

**THE DEVELOPMENT OF AN ADVANCED PRACTICE NURSING (CHILD
HEALTH NURSE PRACTITIONER) CURRICULUM FRAMEWORK FOR SUB-
SAHARAN AFRICA: A MULTI-METHOD STUDY**

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**A thesis submitted to the Faculty of Health Sciences, University of the
Witwatersrand, Johannesburg, in fulfilment of the requirement for the degree of Doctor
of Philosophy in Nursing**

Johannesburg, 2018

DECLARATION

I, Christmal Dela Christmals, declare that this research report (Human Research Ethics Clearance number **M160632** is my own work. It is being submitted for the degree of Doctor of Philosophy in Nursing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

.....

Signed at Johannesburg

On the 1st day of June 2017

ABSTRACT

Background: Nurses are the majority of readily available healthcare professionals in Sub-Saharan Africa (SSA), therefore, improving access to Advanced Practice Nursing (APN) programmes in order to improve healthcare within SSA where preventive services are much needed is essential. Sub-Saharan Africa is unique in terms of its challenges, opportunities and health need hence an APN (Child Health) curriculum must be designed and continually reviewed to meet the needs of the continent. Professional education has not kept pace with SSA's special healthcare challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates.

Aim: The aim of this study is to develop a curriculum development framework to guide governments and Nursing Education Institutions in the development of relevant Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum that responds to the child healthcare needs of Sub-Saharan Africa

Methodology: A sequential multi-method research design was employed in this study. The study began with a scoping review, followed by a Delphi, then concept development, and the development, confirmation and evaluation of the curriculum framework.

Findings: Children are the majority of Sub-Saharan Africa. Between 70-90% of the Sub-Saharan African population is rural and lack access to quality and cost-effective healthcare services as most healthcare facilities are located in the cities and small towns. The implementation of Advanced Practice Nursing programmes is essential in increasing access to quality healthcare services for the majority and marginalized rural population of Sub-Saharan Africa. The introduction of Advanced Practice Nursing programmes is challenged by the opposition from the medical profession, the existence of lower cadre medical professionals, meagre resource allocation, lack of scope of practice, lack of context-specific benchmark programmes and lack of political will. The need to increase access to quality healthcare to the rural population, the push for Primary Health Care, the dominance of nursing professionals in the healthcare system of Sub-Saharan Africa, the existence of resource sharing opportunities were facilitating factors. A concept-based Child Health Nurse Practitioner curriculum framework for Sub-Saharan Africa was developed.

Conclusion: The Child Health Nursing Practitioner curriculum framework is comprehensive, context-specific, has the potential to respond to the special child healthcare needs of Sub-

Saharan Africa and is adaptable for other Advanced Practice Nursing speciality programmes in Sub-Saharan Africa.

PRESENTATIONS ARISING FROM THIS STUDY

Christmals CD and Armstrong SJ, (2017). Advanced Child Health Nursing in Sub-Saharan Africa: A Driving Force for Effective Primary Health Care Delivery, *7th ICCHNR International Conference Community Health: Action for Change*, Monte Casino, Johannesburg, South Africa 20 – 22 September 2017

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DEDICATION

I dedicate this work to my mum and mentor,

Professor Janet J. Gross

(Morehead State University, USA; University of Cape Coast, Ghana; West End University College, Ghana; Muni University, Uganda; Southern Africa Nazarene University, Swaziland; Mother Patern College of Health Sciences, Liberia; Global Health Services Partnership-US Peace Corps Volunteer)

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CHAPTER 1 : OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This chapter introduces the reader to the study, thus describes the context of the study which is sub-Saharan African context, as well as the theory and processes of curriculum and curriculum development, Advanced Practice Nursing, Child Health, conceptual definitions and states the problem statement, the research question, purpose and objectives of the study, the significance of this study and the organisation of this thesis.

Disease, despair and death are the African stories the world is accustomed to (Garcia, Pence & Evans, 2008). The major challenges of Africa can be grouped into five main sectors: education, healthcare, agriculture, governance and infrastructure (United Nations, 2005; Nicholls et al., 2011). These challenges reflect in poverty, war (political and tribal instability), insecurity, poor health indices, and underdevelopment, to mention just a few.

Children are the majority (51.1%) of the population of sub-Saharan Africa (SSA) (Ahmed et al., 2011; World Bank Group, 2015; populationpyramid.net, 2016). It is estimated that 65% of children born in Africa will suffer the consequences of poverty, 14 million of them will be orphaned through HIV/AIDS and a third of them will be excluded from various social amenities due to their gender and ethnicity (Garcia, Pence & Evans, 2008). Fifty percent of children in sub-Saharan Africa lack good shelter, about 45 % lack good water, about 30 % are excluded from education and 27% are deprived of healthcare (Garcia, Pence & Evans, 2008). Sub-Saharan Africa is experiencing an excessive disease burden due to the lack of suitable healthcare workforce to respond to the health problems of the population. There is need to structure the production of the healthcare workforce according to the SSA population dynamics and health needs (Hiatt et al., 2017) which includes providing specialist trained child health nurses. This study developed a curriculum framework to guide institutions and states to develop responsive Child Health Nurse Practitioner curricula in sub-Saharan Africa. In the following section, the concepts Advanced Practice Nursing, child health and curriculum development will be explained within the sub-Saharan Africa context.

1.2 THE CONTEXT: SUB-SAHARAN AFRICA

Sub-Saharan Africa consists of forty-nine countries out of the fifty-four in Africa (Figure 1.1). Sub-Saharan Africa is the region representing all the rest of Africa to the south of the Sahara desert, thus excludes the five Arab/North African countries-Algeria, Egypt, Libya, Tunisia, and Morocco (Federal Ministry for Economic Cooperation and Development Germany, 2017). Some Arab states that are found in North Africa are part of sub-Saharan Africa politically including Somalia, Djibouti, Comoros and Mauritania (Kpodo, Thurling & Armstrong, 2016). Although Arab Africa and sub-Saharan Africa share geographical space and vegetation, their healthcare system and practices are much different. The health statistics of the Arab states are much better than that of sub-Saharan Africa, hence this study focused on SSA (Meso, Mbarika & Sood, 2007; New World Encyclopedia, 2015). sub-Saharan Africa is geographically and politically divided into four main sub-regions: East, West, Central and Southern Africa and their respective countries are given in Table 1.1 (New World Encyclopedia, 2015).

Table 1.1 Countries in Sub-Saharan Africa

No.	East Africa	West Africa	Central Africa	Southern Africa
1.	Djibouti	Benin	Burundi	Angola
2.	Eritrea	Burkina Faso	Cameroon	Botswana
3.	Ethiopia	Cape Verde (Island)	Central African Republic	Comoros (Island)
4.	Kenya	Côte d'Ivoire	Chad	Lesotho
5.	Rwanda	Gabon	Democratic Republic of Congo	Madagascar (Island)
6.	Seychelles(Island)	The Gambia	Equatorial Guinea	Malawi
7.	Somalia	Ghana	Republic of Congo	Mauritius (Island)
8.	South Sudan	Guinea		Mozambique
9.	Sudan	Guinea-Bissau		Namibia
10.	Tanzania	Liberia		South Africa
11.	Uganda	Mali		Swaziland
12.		Mauritania		Zambia
13.		Niger		Zimbabwe
14.		Nigeria		
15.		São Tomé and Príncipe (Island)		
16.		Senegal		
17.		Sierra Leone		
18.		Togo		
19.				
20.				



Figure 1.1: Map of Sub-Saharan African.

Source:(Broad,2007);<http://www.michiganbusiness.org/news/global-trade-outlook-sub-saharan-africa/>

1.2.1 Political Issues in Sub-Saharan Africa

Politics is an overarching factor among other factors such as economics, culture, education, healthcare, transportation, agriculture, food security and technology that impact sustainable development at regional and local levels (United Nations, 2005; New World Encyclopedia, 2015; Federal Ministry for Economic Cooperation and Development Germany, 2017; GSM Association, 2017).

A situational or needs analysis is necessary for the introduction of any business or programme into a new region. The assessment of the political issues within sub-Saharan Africa is necessary to facilitate the introduction and sustenance of Child Health Nurse Practitioner programme.

Poor governance and unstable governments in sub-Saharan Africa is responsible for the increasing poverty, poor economic growth and worsening healthcare indicators (United Nations, 2005). African leaders and their allies have abused and misused their political offices for their personal gains (Nicholls et al., 2011; Transparency International, 2017). Corruption in top-government and the growing trend of families and close allies of presidents in most African countries becoming the richest and influential in the various sub-Saharan African countries is a worrying phenomenon. This lead to the less than 50% corruption perception index score with an average corruption perception index score of 31% in the year 2016 by 89% of sub-Saharan African countries (Transparency International, 2017). During his reign in Nigeria, President Sani Abacha was estimated to have accumulated \$1 billion per annum and was described as practicing ‘grand corruption’ (Nicholls et al., 2011). Even though Ghana is seen as a model of political stability in sub-Saharan Africa, Ghana has declined in corruption index due to rampant corruption allegations against the former president (John Dramani Mahama), his family and government, leading to change of government in the year 2016 (Transparency International, 2017).

Large African economies such as South Africa, Nigeria, Tanzania and Kenya have also failed to improve in the fight against corruption. For example, the South African president (Jacob Zuma) has been probed by the judiciary and the legislature on several corruption charges leading to the African National Congress recalling him from the office of the President of the Republic of South Africa whereas the president of Kenya (Uhuru Kenyatta) lamented that the anti-corruption strategies instituted by his government were not producing results (Transparency International, 2017).

While those in power and their close relations enjoy the resources of the various countries, the larger proportion of the sub-Saharan African countries wallow in poverty. Wars, coup d’état, post-election violence and other forms of political instability had a great impact on sub-Saharan Africa (Minoiu & Shemyakina, 2014; Foster & Brooks-Gunn, 2015). Healthcare policy in Africa is poor and is mostly driven by international organizations and institutions (Soucat, Scheffler & Ghebrey, 2013; Mooketsane & Phirinyane, 2015).

Nursing in Africa, as with other professions, is subjected to political influences (Omaswa & Crisp, 2014). There are four main stakeholders whose roles in nursing education and practice are distinct and complementary. The nursing councils regulate nursing, the nursing unions form the nursing labour arm, the educators/ educational institutions form the training arm

whereas the departments/ministries of health make the necessary policies that affect the roles of all the other arms and serve as the main employers (Omaswa & Crisp, 2014). Some African countries do not have nursing councils and/or no Chief Nursing Officers in the Departments of Health where the ministers are mostly medical doctors. This makes the governance of nursing difficult. Some existing nursing councils do not have the capacity or the necessary autonomy to make regulations, resulting in the nursing councils being advised by the ministries of health instead of the nursing councils advising the ministries of health (Omaswa & Crisp, 2014).

1.2.2 Economic Factors

Sub-Saharan Africa is one of the poorest regions on earth (New World Encyclopedia, 2015). Despite the political challenges, SSA is making strides in economic growth and six out of the 10 fastest growing economies are located in SSA (Tonic Institute, 2017). Factors that contribute to economic growth, inflation and forex exchange rates do have an effect on APN in SSA. Africa is the most resourced continent on earth with about 10% of the world's oil reserve, 40% gold, 80% chromium and platinum reserves and most importantly 60% of the virgin land (Tonic Institute, 2017). Africa is attracting a lot of investors through its natural resources and the increasing political stability. The formation of regional economic blocs such as the African Union, the Southern Economic Development Community (SADC), the East African Community (EAC), the Community of East and Southern Africa States (COMESA) and Economic Community of West African States (ECOWAS) to facilitate trade among African countries promotes economic stability in sub-Saharan Africa (United Nations, 2005; Federal Ministry for Economic Cooperation and Development Germany, 2017; GSM Association, 2017). Economic stability is essential as it influences access to healthcare and the healthcare choices of individuals (Vogenberg & Cutts, 2009).

Healthcare investment is poor in sub-Saharan Africa compared to the global GDP healthcare expenditure. For example, the region spent 4.5% less of its Gross Domestic Products (GDP) on healthcare compared to the 10.5% global GDP healthcare expenditure (Ministry of Health, 2012; Mooketsane & Phirinyane, 2015). It is estimated that for every one extra year lived by human beings, the Gross Domestic Product increases by 4% (Harmonizing for Health in Africa, 2011). It is therefore important for sub-Saharan Africa countries to invest in healthcare (Soucat, Scheffler & Ghebrey, 2013; Mooketsane & Phirinyane, 2015).

Despite the economic challenges, some African countries (Ghana, Kenya, Nigeria, Tanzania and Uganda) have implemented National Health Insurance Schemes that make healthcare affordable to the poor (Carapinha et al., in press). Some countries are in the development and piloting stage of similar insurance schemes (Kruk et al., 2010; Omaswa & Crisp, 2014; Department of Health, 2017).

1.2.3 Technological Issues

At the end of 2016, there were 420 million unique mobile subscribers in sub-Saharan Africa, equivalent to a penetration rate of 43%. The region continues to grow faster than any other region; the Compound Annual Growth Rate (CAGR) of 6.1% over the five years to 2020 is around 50% higher than the global average. The region will have more than half a billion unique mobile subscribers by 2020, by which time about half the population will subscribe to a mobile service. The total number of SIM connections in the region reached 731 million at the end of 2016 and will rise to nearly 1 billion by 2020 (GSM Association, 2017). Tanzania, Uganda and Kenya have successfully implemented e-learning programmes at diploma level. Other African countries are following the examples of these countries (Omaswa & Crisp, 2014). The increasing penetration of internet and mobile telecommunication technology in Africa is an opportunity that the African countries are using to improve healthcare education and delivery (Thierry et al., 2016). For example, the “Living Goods” healthcare application is being used to promote efficiency and effectiveness of Community Health Promoters (CHPs) in Uganda. The use of 321 VAS (the mobile technology platform launched by Airtel Malawi) to improve access to maternal and child health information and other mobile phone-based health delivery systems such as momConnect (South Africa), mHealth (Ghana) are innovative ways of using mobile technology in improving healthcare in Africa (GSM Association, 2017). Technology, especially mobile technology, is very essential in driving healthcare delivery in SSA (The Economist Intelligence Unit, 2011; Thierry et al., 2016).

1.2.4 Demography

In 1950, Africa represented 9% of the population of the world but had increased to 16% in the year 2015 (UNICEF, 2014). It is estimated that by the end of the 21st century, the population of Africa will rise such that 4 out of every 10 humans will be an African (UNICEF, 2014). It is estimated that the population will increase from its current 39 humans per square meter to 80 people per square meter by 2050. This means the population of sub-Saharan Africa will be overcrowded and there will be competition for social amenities due to the slow rate of

infrastructure development (UNICEF, 2014; da Silva Francisco, 2016; Wongboonsin & Phiromswad, 2017).

The population explosion in Africa is attributed to the increasing fertility rate, reduction in child and overall low mortality rates, and high adolescent childbirths (UNICEF, 2014; Wongboonsin & Phiromswad, 2017). It is estimated that every female (between the ages of 15 and 49) in Africa has about 4.7 children. Countries that are politically unstable and economically poor have the highest fertility and birth rates in Africa and the world at large. Somalia, Chad, Mali and Niger have fertility rate above six children per women in their reproductive age (Wongboonsin & Phiromswad, 2017). The top ten countries (Niger, South Sudan, Chad, Democratic Republic of Congo, Somalia, Burundi, Angola, Mali, Mozambique and Uganda) with the highest fertility rate are from SSA (Population Reference Bureau, 2016). Within every country, women who live in the poorest households give birth to more children than those in the richer households. In some selected African countries, women in the poor households have, on average, two to four more children than their counterparts in richer households (Wongboonsin & Phiromswad, 2017).

The average number of birth per year in the world is 147, 183,065 and the average number of deaths is 57, 387,752 resulting to a natural increase of 89,795,313 people. In the more developed countries, births per year are 13,714,857 and deaths per year are 12,580,616 resulting in a natural increase of 1,134,242 people per year. In the less developed countries, births per year are 133,468,215 and deaths per year are 44,807,108 leading to a natural increase of 88,661,107 people per year. It can be deduced from the statistics above that in every minute, about 171 human beings are added to the population of the world, that is two for the developed countries and about 169 for developing countries (Population Reference Bureau, 2016).

Infant mortality in the developed world is 65,229 per year, whereas it is approximately 5,160,998 per year for developing countries, meaning that every day, about 179 children die in the developed world while about 54,140 dies in the developing countries (Population Reference Bureau, 2016). Due to the failing healthcare systems in most developing countries easily treatable diseases and illness are not responded to quickly and effectively, lead to increased infant mortality (Population Reference Bureau, 2016).

About 30 % of children in Africa live in countries plagued with political and economic instability (O'Malley et al., 2014). O'Malley et al. (2014) stated that there are about 40 million children under the age of five and 100 million adolescents in SSA. They further indicated that by the end of the 21st Century, half of the population of children in the world will be below 18 years of age and living in developing countries across Africa (O'Malley et al., 2014). UNICEF (2014) stated that about 47% of the population is less than 18 years with the highest child dependency rate (73%) whereas more than 50% of the population of 31% of SSA countries are children. Forecasts have shown that by the year 2050, about 37% (one billion) of the population of children in the world will be residing in Africa (O'Malley et al., 2014), signifying a five times population growth in African since 1950 (UNICEF, 2014). African populations are fairly young, creating a negative impact on African economic growth and development (Wongboonsin & Phiromswad, 2017). Efforts focussing on child health, education, child right of protection and inclusion are therefore necessary to keep the young population healthy and well educated so as to contribute to the economic growth of the continent (Wongboonsin & Phiromswad, 2017).

Child morbidity and mortality remain a major healthcare challenge in SSA (Cheema, Stephen & Westwood, 2013; Coetzee, 2014; WHO, 2014; Coetzee et al., 2016; UNICEF, 2016; Kassebaum et al., 2017). The two regions in the world with the highest rate of child mortality are SSA and Southern Asia. The major cause of child mortality in SSA is acute respiratory infections (especially pneumonia).

Sub-Saharan Africa is a unique continent with diverse socio-cultural contexts, a frequent outbreak of communicable diseases such as cholera and Ebola, high prevalence and incidence of HIV/AIDS, high poverty rates with associated high rates of malnutrition, and high rates of maternal and child deaths (Sheer & Wong, 2008). The majority of malaria infections in the world occur in children under the age of five in sub-Saharan Africa (World Health Organization, 2006a). The major causes of death in children under the age of five in sub-Saharan Africa are preventable (acute respiratory infections, malaria, diarrhoea diseases, HIV/AIDS, and measles) and are complicated by malnutrition due to the severe poverty across the sub-region (WHO, 2014).

Whereas the developed countries are battling with non-communicable diseases and diseases of old age, SSA is still struggling with communicable diseases to a large extent (Institute of Health Metrics and Evaluation, 2015), thus health professional education and practice in SSA must be more preventive oriented than curative (Soucat, Scheffler & Ghebrey, 2013). Giving

children in SSA the opportunity to develop and function at an optimal level in adulthood is difficult under the conditions of poverty, food insecurity, low literacy rate and political instability (Wittenberg, 2013; WHO, 2014).

Unfortunately, paediatric nursing training in Africa has been historically established on the western philosophy and education materials (Coetzee et al., 2016). Almost all postgraduate paediatric nursing programmes in SSA are acute care oriented despite the preventive diseases that threaten the lives of children in Africa. Experts are wondering if the paediatric nursing training programmes in SSA are appropriate for the context and characteristics of the healthcare system in which they are implemented (Coetzee et al., 2016).

1.2.5 Educational Systems

No scientific statement can ever be proven to be true, thus “every scientific statement must remain tentative forever” (Popper, 1959). Such is knowledge and education. Education is seen as a cause and effect in social change. Systems change as better ways of doing things evolve, curricula are dynamic due to the changing characteristics of students and the changing needs of the society for which the graduates of an educational system function. Any educational system that is not dynamic enough to produce graduates to function at the optimal level of their abilities within the context in which they are being trained is ineffective or irresponsible. All levels of education in Africa are influenced by local and global forces. Among these forces is the influence of the philosophy of colonial masters (Nsamenang, 2005). Knowledge generation is poor in Africa and mostly due to the western and eastern acculturation which trivializes the indigenous African knowledge, misguiding African innovation and inventions (Nsamenang, 2005). Nsamenang (2005) believes that the net outcome of most interventions on the African continent is derived from the wholesale replacement of African systems of education with western and eastern ones. He further stated that one cannot advocate for completely turning away from western educational philosophies and methods as they have their own merits. African educationists (Fafunwa, 1991; Nsamenang, 2005; Casimir & Nwakego, Orajaka Sussan Umezinwa, 2013) believe that the Eurocentric education systems in Africa are detrimental to humanness of Africans and called for pragmatic changes in African education philosophy and curricula such as the use indigenous knowledge and language in education and training.

1.2.5.1 Basic education

The basic education system of SSA generally spans nine years with the pupils having the opportunity to enrol in high schools as illustrated in Table 1.2 below (Lewin & Sabates,

2012). Basic school education improved in SSA after the World Conference on Education for All, held in Jomtien, Thailand in 1990. It was explicitly declared that education is a fundamental right of every human being irrespective of gender. The conference also iterated that education is indispensable as it helps in providing safer, healthier and prosperous life (Lewin & Sabates, 2012). Commitment from governments is a key driving force of education globally. Almost all governments in SSA have implemented free basic school in one form or the other. Since the declaration, access to basic education has increased tremendously in SSA. The increase in infrastructure and human resource is not commensurate with the increasing access to basic education in almost all SSA countries, mounting pressure on the existing infrastructure and the concomitant poor outputs (Lewin & Sabates, 2012). For example, after the election of a new government in 1994 in Malawi, the primary school enrolment sharply increased from 600 000 to more than 1 million, making grade 1 enrolments six times the number of pupils in grade 8 (Lewin & Sabates, 2012).

A major challenge for children in sub-Saharan Africa is ‘over-age for grade’ due to the competition for space in basic schools. When a child is older than his/her grade, it is highly likely that he or she will underperform and miss some fundamental development skills at a stage where he or she is much receptive of those skills (Lewin & Sabates, 2012). A child could be older than a grade because he or she is repeating a grade(s) or gained access to school at an older age.

Lewin and Sabates (2012) studied children who were not in school at school going age across sub-Saharan Africa and noted that the percentage of children (male;female) who were not in school at school-going age reduced from 1990 to 2000 for the following countries: Kenya (21;22 to 13;16); Malawi (32;34 to 20;18%); Nigeria (33;44 to 26;33); Tanzania (46;44 to 22;17%); Uganda (27;32 to 13;14%) and Zambia (34;35% to 19;19). Furthermore, the number of girls at home at the school-going age were more than those of boys across SSA. Children from poorer households are more likely not to be at school at school-going age. Generally, the gap between the rich and the poor in terms of access to basic education has increased in West Africa, stabilised in East Africa and reduced in Southern Africa (Lewin & Sabates, 2012).

UNESCO (2009) stated that the educational system of SSA is fragmented vertically and horizontally, creating a huge gap between the general and the vocational subjects. They asserted that the content-based curricula prescribed by national governments make the educational system resistant to adaptation or innovation in teaching and learning (UNESCO,

2009). They further condemned the dominance of teacher-centred methods in basic education in SSA and stated that quality in basic education should be centered on the teaching and learning process and outcomes of the education process rather than inputs from teachers, textbooks and infrastructure. They concluded that teacher's underperformance and poor basic education was largely attributed to poor remuneration and lack of incentives for most teachers in SSA.

Contrary to the fragmentation critique on the education system by UNESCO, the World Bank stated that the educational system in sub-Saharan Africa is aligned with each other from basic to tertiary level (Verspoor & Bregman, 2008). They also asserted that primary education feed into the junior high school, which prepares pupils for the senior secondary/high school level, and the high school for the tertiary institutions such as the universities, polytechnics/technikons, teacher and nursing training colleges smoothly (Verspoor & Bregman, 2008).

1.2.5.2 High/Secondary School Education in SSA

High school education is the conduit to nursing education in SSA. The quality of basic and secondary/high school training, arguably, affects the process and outcomes of nursing education in SSA. Sub-Saharan African countries have increased investment in access to secondary school and higher education over the years (Al-Samarrai & Bennell, 2007). Free high school education currently ongoing in Ghana and other countries (Kavuma, 2011). Despite the huge investments and the relative increase in access to high school education in SSA, the enrolment of basic school leavers to high school is about 30% and the quality of the training questionable (Verspoor & Bregman, 2008). Verspoor and Bregman (2008) in their report to the World Bank indicated that there is the need to refocus on secondary education without completely shifting attention and the necessary resources from basic education. Despite all levels of education linking into each other, Verspoor and Bregman (2008) believed that secondary school curriculum is outdated and does not prepare the leaver to contribute to economic growth. They stated that there is the need for a pragmatic (practically oriented) review of the curriculum to respond to the current needs of the economy instead of the partial momentary changes, which are subject-specific and does not affect the holistic teaching and learning philosophy.

The increased number of graduates competing for the fixed government job opportunities creates an excess of high school and university graduates without jobs to utilize the skills they acquired through formal education. The nursing profession seems to be one of the surest ways of gaining employment during and after training.

Basic and high school education are the foundation of tertiary education. Poor quality of the 12-year compulsory education will have an adverse effect on the higher education process, for instance, either the quality standards of the higher education system are lowered for the poorly prepared students to cope with the demands of higher education or the students drop out of school. Extra resources may also be committed to helping the students to cope leading to increased cost of education to the funders of the higher education system.

Table 1.2: Number of years for Basic, High School and Nursing Qualification in some selected SSA countries

Level of Education	South Africa	Malawi	Ghana	Nigeria	Zambia	Kenya	Rwanda
Basic	9	10	9	9	9	8	9
High	3	2	3	3	3	4	3
Enrolled Nursing	2	3	2		2	2.5	
Diploma in Nursing	4	4	3	3	3	3	3
BSc/BN	4	4	4	5	4	4	4

Sources: (EP-Nuffic, 2015; Nursing Council of Kenya, 2017; U.S. Embassy in Ghana, 2017).

1.2.6 Bachelors in Nursing in Sub-Saharan Africa

A Bachelors (first) degree in nursing is the only way students could get access to Masters level Advanced Practice Nursing programme in SSA and other parts of the world since the former is a prerequisite for the latter. The Bachelors of Nursing programme in sub-Saharan Africa is mainly four years, except for Nigeria, where it is implemented over a five-year period. Despite bachelors' programmes being a minimum of four years, the post-diploma/certificate track gives nurses the opportunity to qualify for a degree certificate in two or three years. Across SSA, there are disparities in the course content, the number of credit hours and the number of clinical hours gained by the pre-registration bachelor's students. Table 1.3 shows an overview of the content of the bachelors in nursing programmes in some universities of some selected countries in SSA.

Table 1.3: Bachelors’ of Nursing across Sub-Saharan Africa

Year	University of Nairobi	University of Limpopo	University of Ghana	Ahmadu Bello University, Nigeria
1 st Year	Nutrition And Health	Fundamentals of Nursing Practice 1	Human Anatomy I	Foundation of Nursing I
	Fundamentals Of Nursing	Chemistry	Human Anatomy II	Heat and Property of Matter
	Medical Physiology	English for Health Science I	Human Physiology I	Introduction to Practical Physics
	Psychology	Human Anatomy 1	Human Physiology II	Introductory Organic Chemistry
	Introduction To Sociology	Introduction to Psychology	Introduction to Community Health Nursing	Introduction to General Chemistry
	Introduction To Anthropology	Fundamentals of Nursing Practice 2	Introduction to Mental Health Nursing	Introduction to Organic Chemistry
	Community Health	Biophysics 1C	Fundamentals of Mental Health Nursing	Introduction to Practical Chemistry
		Cognitive and Health Psychology	Nursing Perspectives	Plants systemic
		English for Health Sciences	Trauma and Emergency Nursing	English and Communication Skills
		Human Anatomy	Psychology for Nurses	History of Scientific ideas
			Obstetric Anatomy and Normal Pregnancy	Nationalism
			Fundamentals of Nursing	Foundation of Nursing II
			Nursing Practical I	Introduction to Evolution and Genetics
				Introduction to Ecology
				General Physics Practical II
				Electricity Magnetism and Modern Physics
				Introduction to Organic Chemistry
				Introduction to Chemistry Practical
				Introduction to Physical Chemistry
2 nd Year	Human Anatomy	Community Health Nursing	Principles and Practice of Health Assessment	Foundation of Nursing III
	Haematology	General Nursing Science I	Medical Conditions of Integumentary, Gastrointestinal and Endocrine Systems	Human Anatomy I
	Basic Statistics	Microbiology	Medical Microbiology and Parasitology	Human Physiology I
	Reproductive Anatomy And Physiology	Physiology for the Health Sciences I	Surgical Conditions of Integumentary, Gastrointestinal and Endocrine Systems	Biochemistry of Macromolecules
	Educational Psychology	Psychology for Nurses	Normal Labour and Puerperium	Biochemistry PracticalI
	Medical Microbiology	Community Health Sciences	Abnormal Pregnancy, Labour and Puerperium	Nigerian Government and Politics
	Clinical Chemistry	General Nursing Sciences 1	Theoretical Foundations of Nursing	African History and Culture
	Medical-Surgical Nursing I	Medical and Social Psychology	Classification and Management of Mental Disorders	Introduction to Computer Science
	Clinical Pharmacology & Pharmacotherapeutics	Psychology for the Health Sciences II	Pharmacology	Biostatistics
	Family Health Nursing		Medical and Surgical Conditions of the Newborn and the Child	Foundation of Nursing IV

			Prevention and Control of Communicable Diseases	Human Anatomy II
			Management of Child Welfare Clinics	Human Physiology II
			Nursing Practical II	Man and His Environment
			Nursing Practical III	Medical Microbiology & Parasitology
			Nutrition and Dietetics	Sociology II
			Pathology	General Metabolism I
3 rd Year	Paediatric Nursing	Community Health Nursing	Medical Conditions of Respiratory, Cardiovascular and Genitourinary Systems	Mental Health Nursing I
	Community Health Nursing I	General Nursing Science	Medical Conditions of Nervous and Musculo-skeletal Systems and Sensori-Neural Organs	Medical-Surgical Nursing I
	Mental Health And Psychiatric Nursing	Midwifery	Surgical Conditions of Respiratory, Cardiovascular and Genitourinary Systems	Community Health Nursing I
	Midwifery/obstetric & Gynaecological Nursing	Pharmacology	Surgical Conditions of Nervous and Musculo-skeletal Systems and Sensori-Neural Organs	Moral Philosophy
	Educational Communication And Technology	Psychiatric Nursing Science	Community Health Service Organization and Participation	Nutrition
	Medical / Surgical Nursing II	Community Health Nursing	Occupational and Community Health Services	Clinical Posting and Practical Examination
		General Nursing	Nursing Practical IV	Human Anatomy III
		Pharmacology	Nursing Practical V	
		Post-Natal and New-Born Care and Legislation	Reproductive Health	Developmental Psychology
		Psychiatric Nursing Science	High-Risk Neonate	Mental Nursing II
			Medical Surgical Conditions in Childhood	Medico-Surgical Nursing II
			Principles of Psychiatric Nursing	Maternal and Child Health I
			Management of Major Psychiatric Disorders	Community Health Nursing II
			Nursing Research	Pharmacodynamics and Chemotherapy
			Proposal Development and Report Writing	General Cellular Pathology & Cytology
			Gynaecological Nursing and Obstetric / Gynaecological Operations	Conc. Clinical posting+ Practical exam (5 weeks)
			Advanced Clinical Nursing I	
	Medical-Surgical Nursing III	General Nursing and Professional Practice	Project work	Principles and Methods of Epidemiology
	Management And Administration Of Nursing Services	Midwifery	Tools and Methods of Teaching Nursing	Medico-surgical Nursing
	Curriculum And Instruction In Nursing	Pharmacology	Curriculum Development in Nursing Education	Principles of Education
	Research Project	Post-Natal and New-born Care and Legislation	Principles of Management in Nursing	Curriculum Dev. & Teaching Methods
	Community Health Practice	Psychiatric Nursing Science	Administration of Nursing Services and Schools	Community Health Nursing III
	Research Methodology	Midwifery	Biostatistics	Maternal and Child Health II
		Nursing Administration and Clinical Teaching	Teaching Practice	Clinical Posting + Practical Examination (Paediatrics) (6 weeks)

4 th Year		Psychiatric Nursing Science	Nursing Practical VI (Speciality Option)	Systemic Pharmacology
		Sociology	Nursing Practical VII (Speciality Option)	Management of Nursing Care Services
			Advanced Clinical Nursing II	Research Methodology
			Nursing Seminar	Teaching/Management Practice (TP)
			Palliative care and Hospital Emergency Management	Nursing Seminar
			Peri-Operative and Critical Care Nursing	Medical-Surgical Nursing IV
			Childhood Chronic and Life Threatening Diseases	Nutrition in Health and Illness
			Integrated Management of Childhood Illnesses	Medical Jurisprudence
			Home-Based Nursing and National Health Programme	Management of Nursing Care Services
			Community Health Nursing Administration	
			Domiciliary Midwifery	
			Advanced Midwifery Practice	
			Theoretical Frameworks in Mental Health Nursing	
			Advanced Practice in Mental Health Nursing	
5 th Year				Primary Health Care Nursing I
				Maternal and Child Health III
				Clinical Posting + practical Examination (O&G Posting) (8 weeks)
				* Clinical Posting + Practical Examination (Labour Ward) (8 weeks)
				Primary Health Care Nursing III
				Research Project
				Health Economics
				Examination (Labour Ward) (8 weeks)
Credits	Not available	480	Not available	188

Sources: (Ahmadu Bello University, 2017; University of Ghana, 2017; University of Limpopo, 2017)

1.2.7 National Qualification Frameworks

Apart from the South African Qualification Authority (SAQA), none of the sub-Saharan African countries have well defined and coordinated National Qualification Framework (NQF). This study makes reference to the NQF of SAQA for consistency and verifiability. A national qualification framework is a system that describes education qualifications in terms of the level of qualification and the knowledge, skills and attitudes the student should acquire to be awarded such qualifications (South African Qualifications Authority, 2000a, 2017; Koleva et al., 2012; Stanciu & Banciu, 2012; UK Accredited Qualifications, 2017).

A National qualification framework makes the administration and quality control of an educational system easy (Young, 2003). It also informs job descriptions and remuneration scales. Foreign qualification authorities and education institutions are able to comprehend and synchronize qualifications from foreign institutions easily when that nation has a well-defined national qualification framework (Young, 2003).

According to the South African Qualification Authority, a four-year degree carries 480 credits. Currently, only NQF level 8(4-years/ honours degree in nursing) is eligible for admission into the Masters of Nursing in South Africa (Table 1.4). As demonstrated in Table 1.3 above, there are different credit systems in various countries. For example, a four-year degree in Ghana carries between 120-144 credits (National Accreditation Board, 2013), a five-year degree in Nigeria covers about 188 credits and in the United States, a four-year Bachelor's degree in Nursing requires a minimum of 120 credits for qualification (U.S. Department of Education, 2008) whereas 120 credits are required to complete one year of the four-year degree in South Africa and Europe (Scottish Qualification Authority, 2006; Duma et al., 2012; European Centre for the Development of Vocational Training, 2012; South African Qualifications Authority, 2014; Quality and Qualifications Ireland, 2017).

One credit in Ghana is equivalent to one credit in the USA (North Carolina State University, n.d.) and defined as a one hour lecture or tutorial or a 2-3 hours practical session or a six hours fieldwork (University of Ghana, 2009). South African Qualifications Authority (2000b) defined one credit as equivalent to ten notional hours (the number of hours needed for the average student to learning towards the achievement of a specified standard. Definition of credits differs from one jurisdiction to the other therefore the comparison of credits alone is inadequate for the comparison of degrees.

If credits were the only criteria for foreign qualification evaluation, it will be difficult to transfer qualifications from a USA-benchmarked educational system to any European or African educational system. The disparities in the credit systems of various countries create space for under cognition or over recognition of foreign qualifications. Below is a sample of some qualification frameworks of some countries.

Table 1.4: Some Countries and their national qualification Frameworks

Level	Europe/ England/Northern Ireland	Ireland	South Africa (Post 2009)	Scotland
1	GCSE Grade D-G	Level 1 certificate	Grade 9	National 1
2	GCSE Grade A-C	Level 2 certificate	Grade 10 /National (vocational) Certificates level 2	National 2
3	A level/ National Diploma/National Certificate	Level 3/Junior certificate	Grade 11 and National (vocational) Certificates level 3	National 3
4	Higher National Certificate (HNC)	Level/Leaving certificate	Grade 12 National Senior Certificate /National (vocational) Cert. level 4	National 4
5	Foundation Degree/ HND	Level 5/Leaving certificate	Higher Certificates and Advanced National (vocational) Cert	National 5
6	University Degree	Advanced/ Higher certificate	National Diploma and Advanced certificate	Higher Skills for Work
7	Masters	Ordinary Bachelor's degree	Ordinary Degree/ Advanced Diploma/Bachelor of technology	Higher National Certificate
8	PhD	Honours Bachelor's degree	Honours degree/ Post Graduate Diploma/Professional Qualification	Higher National Diploma
9		Master's degree/ Post-graduate Diploma	Master's degree	Ordinary Degree
10		Ph.D./ Higher Degree	Doctoral degree	Honours
11				Masters
12				PhD

Nursing education in SSA has evolved over the years. Progress has been made in the profession in areas of specialisation, regulation and research. However, due to knowledge evolution, increasing influx of technology and practice-based nature of nursing programmes, constant review and improvement are needed to stay abreast with current population health needs and demands of the nursing profession. This is necessary to ensure educational programmes and their products effectively responsive to the population health needs.

1.2.8 The SSA Healthcare System

The healthier the population, the more productive they are and the easier they are able to climb the social and economic ladder (Sambo, 2014). The weaknesses in the healthcare system of Africa are reflected in the level of poverty and the widespread inequality as observed

across the continent (Sambo, 2014). The SSA healthcare system discriminates against those who live in the deep rural areas. Those living in cities and towns travel short distances to access healthcare, whereas the rural folks commute long distances to clinics, which are often understaffed and have to pay service fees to be treated (Kong et al., 2013; Sambo, 2014; Brinkerhoff, Wetterberg & Wibbels, 2017). Some African governments are considering sustainable healthcare investments to mitigate the high cost of healthcare (Kruk et al., 2010; Harmonizing for Health in Africa, 2011; Ibrahim et al., 2016; Department of Health, 2017). Despite the move to provide affordable healthcare for the general population, there is an increasing number of middle class and upper-class citizens in the cities and towns who are willing to pay for their healthcare, arguably, due to lack of trust in the National Healthcare systems, resulting in upscaling of private healthcare systems (The Economist Intelligence Unit, 2011; Soucat, Scheffler & Ghebrey, 2013). The Economist Intelligence Unit (2011) indicated the health systems of Africa are in a crucial state and governments need to make policies and take directions to ensure positive transformation. They believe that a healthcare system must increasingly be weaned off donor funding to avoid a complete collapse in cases of withdrawal of donor funding which is expected in the current world economic downturn. The communities must be continually empowered to take centre stage in the provision of care to their members as the difficulty created by bad roads to healthcare facilities still linger (Soucat, Scheffler & Ghebrey, 2013). New cadres of healthcare providers who are capable of providing quality community-based healthcare are needed more than ever (The Economist Intelligence Unit, 2011).

1.2.8.1 Levels of Healthcare

The levels of classification of the healthcare system varies across sub-Saharan Africa, ranging from three (Ministry of Health-Zambia, 2013) to six (Government of Kenya, 2012) levels of healthcare. Table 1.5 shows the levels of healthcare in some selected sub-Saharan African countries. Common to these systems are National, Regional/Provincial/State, District and community levels of healthcare. For service delivery, there are four main levels of practiced in SSA. These are the Primary Health Care clinics or Community Health Clinics where preventative and referral services are mostly provided, the District and sub-districts level of care where curative, preventative, and referral of some conditions for appropriate care are provided and the Regional/Provincial Hospitals where advanced curative healthcare is provided. The Regional/Provincial hospitals provide sophisticated care to clients referred from district hospitals. In some countries, regional hospitals serve as teaching or academic hospitals. If these hospitals are not able to deal with the severity of the sickness, they then

refer to specific academic, referral or specialist hospitals for the needed assistance. Central hospitals and specialist centres are seen as the last resort to sophisticated curative or rehabilitative healthcare service delivery (KZN Department of Health, 2017). If these hospitals cannot handle a specific case due to its complexity or lack of human, technological and physical resources, the client is flown outside to any foreign country where the needed resource is located, if the client or the government can afford the cost (Ann Eissler, Casken & Lee Ann Eissler, 2012).

Table 1.5 Levels of Healthcare in Some Selected sub-Saharan African Countries

Country	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
South Africa	PHC, Community Health Centres and District Hospitals	Regional Hospitals	Provincial Teaching Hospitals	Central Hospitals and Specialist Hospitals		
Zambia	District Hospital	Provincial/ Central Hospitals	Specialist of Tertiary Hospitals			
Nigeria	PHC (Health post/Dispensary, Health Clinic and Community Health Centre)	Local Government (specialist and general hospitals)	State (Tertiary and Teaching Hospitals)			
Ghana	Community Level (health posts/CHPs)	Sub-district Level (health centres and clinics)	District Level (district hospitals)	Regional Level (regional hospitals)	National Level (tertiary hospitals)	
Kenya	Community: Village/households/ families /individuals	Dispensaries/clinics	Health centres, maternities, nursing homes	Primary hospitals	Secondary hospitals	Tertiary Hospitals
Rwanda	Peripheral (District Hospitals and community level healthcare centres)	Intermediary (provincial hospital)	Central (National referral hospitals)			
Cameroon	III- Peripheral level (district and community health centres)	II- Intermediate level (Provincial Hospitals)	I- Central level (Teaching and specialist referral hospitals)			
Gabon	Peripheral	Intermediate	Central			

Sources: (DRC Ministry of Health, 2006; Ministry of Health, 2012; Ministry of Health-Zambia, 2013; Rwanda Ministry of Health, 2014; Kress, Su & Wang, 2016; Ghana Health Service, 2017; KZN Department of Health, 2017; MEDCAMER, 2017)

1.3 PRIMARY HEALTH CARE

Primary Health Care (PHC) is defined as “essential healthcare based on scientifically sound and socially acceptable methods and technology, which make universal healthcare accessible to all individuals and families in a community through their full participation and at a cost that the individuals in the community and country can afford to maintain at every stage of their

development in the spirit of self-reliant and self-determination”(World Health Organization, 1978).

The World Health Organization (1978) has identified five elements of Primary Health Care, which are:

- To make sure all people of various socioeconomic status are included in healthcare policy and delivery.
- To ensure that health policy and delivery plans are made with the consideration of the special healthcare needs of the population it is been made for.
- To ensure that the issues of healthcare are considered for various sectoral policy for formulation.
- To create a framework for collaboration in policy reforms.
- To increase the participation of stakeholders.

The Primary Health Care a concept is based on the social healthcare model which dictates a multi-sectoral approach in the provision of basic needs (clean water, good housing, basic education, home-based care, food etc.) for all people to live a healthy life irrespective of economic and social status. PHC is, therefore, a broader concept than just the provision of essential healthcare and encompasses all sectors that are related to or affect the healthcare of the population (World Health Organization, 1978; Dookie & Singh, 2012).

Primary care, on the other hand, is mainly healthcare delivery related (Dookie & Singh, 2012). The Institute of Medicine (IOM) describe primary care as the “provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients and practicing within family and community context” (Doyle et al., 2017).

Dookie and Singh (2012) stated that primary care is the disease prevention and health promotion focused healthcare delivered to individuals and families at their first point of contact with the healthcare system by a physician, nurses and other allied healthcare professionals. It focuses on health education, screening, risk assessment and various strategies to promote health and wellness in the individuals and families rather than on broader social and environmental issues.

Primary care is, therefore, a key component of Primary Health Care. As primary care is important in PHC, the same way Advanced Practice Nursing is vital to primary care. The three most important aspects of PHC (improving access, providing quality care, and cost-effectiveness) can be optimally fulfilled through the anticipated quantity and competence of

APN in SSA (Sheer & Wong, 2008; Ngángá & Woods, 2012). Research has shown that the Advanced Nurse Practitioner provides quality care which results in higher patient satisfaction than the general practitioner (Institute of Medicine, 2011; Doyle et al., 2017) while Nurse lead care is eleven percent less than other providers (Institute of Medicine, 2011). APN is therefore an essential healthcare workforce in driving PHC in SSA.

1.3.1 Protecting People against the Cost of Healthcare in Sub-Saharan Africa

A study conducted in Madagascar to evaluate the effect of the political crisis and the reduction of health service user fees on the public service utilization revealed that the abolition of a healthcare user fee at the Primary Health Care level increases facility attendance by 17% (Fafchamps & Minten, 2003; Brink & Koch, 2015).

The introduction of National Health Insurance Scheme (NHIS) in Ghana saw the outpatient utilization of healthcare increase by 64% while the inpatient utilization increased by 51% (Aryeetey et al., 2012).

A longitudinal study (comparing Health Management Information System data before and after removal of cost) conducted in Uganda to ascertain the utilization of healthcare facilities among the poorer communities shows that there was an increase of 25% in the government facilities and about 44% attendance at referral centres (Nabyonga et al., n.d.; Brink & Koch, 2015). Burnham et al. (2004) discovered that there was about 25% increase in the number of children under the age of five who utilize the public hospitals and about 5% increment in the number of first-time hospital attendees when the hospital user fees were abolished in Uganda.

In Malawi, an agreement between the government and mission health facilities to waive the fees for maternal and child health services resulted in 15% increase in antenatal care visits and 11% increase in the number of child birth at healthcare facilities (Manthalu et al., 2016).

In Zambia, it was found that the abolition of user fees increases the utilization of health facilities in the rural communities by 50% (Masiye et al., 2008). It is however evident from the studies conducted across sub-Saharan Africa that a major challenge to healthcare access is the cost of care. It is very important for SSA governments to develop sustainable ways of reducing or abolishing the cost of healthcare, especially for Primary Health Care in their respective countries (Brink & Koch, 2015). Advance Practice Nursing, as indicated by research evidence (Duffield et al., 2009; East et al., 2014; Heale, Rieck Buckley & Heale, 2015), is essential in reducing cost and increasing access to quality healthcare, hence some

countries have developed programmes to fund and expand the training of APN (Doyle et al., 2017).

1.4 CHILD HEALTH IN SUB-SAHARAN AFRICA

According to the United Nations, a child is anyone less than the age of 19 years. Children have right to health enshrined in the Convention on the Rights of the Child (UNICEF, n.d.; OHCHR, 1990). These rights are binding on all UN member states. Children are vulnerable and form the majority of the population in SSA. As the majority of the SSA population, they deserve special consideration in healthcare policy. Healthcare challenges during childhood have a devastating effect on the developmental process of the child, as well as on his/her education and adult life, hence strategic child health programmes are vital in protecting children and their future from the effects of ill health (Delaney & Smith, 2012).

The rights of children to health as enshrined in Articles 23, 24, 25 and 39 of the United Nations Convention demands the need to provide care, especially with Primary Health Care, for the healthy, sick and disabled children (UNICEF, n.d.; OHCHR, 1990). Article 23 emphasised the need for rehabilitation for disabled children so as to improve their livelihood and keep them happy. Article 24 mainly focused on healthcare covering perinatal and postnatal care, which affect children. Article 39 implored member countries to provide physical and psychological care for the children that are affected by any form of neglect such as war, abuse, exploitation etc. The entire Article 24 is stated as follows:

24: 1. “States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such healthcare services

2. States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures:

(a) To diminish infant and child mortality;

*(b) To ensure the provision of necessary medical assistance and healthcare to all children with emphasis on the development of **primary health care**;*

(c) To combat disease and malnutrition, including within the framework of primary healthcare, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution;

(d) To ensure appropriate pre-natal and post-natal healthcare for mothers;

(e) To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the prevention of accidents;

*(f) To **develop preventive healthcare**, guidance for parents and family planning education and services.*

3. States Parties shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children”.

Most of the SSA population live in the rural areas where healthcare facilities are either not available, under-resourced or inaccessible. The major health facilities are in the major towns and cities which are difficult to reach by the rural dwellers due to poverty, bad roads, or no vehicular transport system (Garcia, Pence & Evans, 2008). There are many child health initiatives in SSA. Such programmes are well planned but problematic in implementation due to financial or human resource limitations (Whitworth, Sewankambo & Snewin, 2010). Primary Health Care programmes are much received and implemented in SSA (Thandrayen et al., 2010; Dookie & Singh, 2012; Sambo, 2014). Taking advantage of the PHC system in SSA to deliver quality child healthcare will improve the child healthcare indicators of the region to a greater extent. The African Leadership for Child Survival (2015) stated that having skilled birth attendants, engaging in new-born care, integrated community case management, stunting, immunization, family planning, Prevention of Mother-to-Child Transmission, and social behavioural change will improve child mortality rate in SSA. They have failed to mention the need for quality trained responsive cadres of healthcare personnel in meeting such needs (Soucat, Scheffler & Ghebrey, 2013). The researcher believes that the initiatives stated by the African Leadership for Child Survival (2015) will better be implemented or driven by the Child Health Nurse Practitioner in SSA.

1.5 EDUCATION-NEEDS MISMATCH IN SSA

The healthcare education in SSA is not the best, compared to the population healthcare needs (Frenk et al. 2010). Frenk et al. (2010) believed that the education and healthcare mismatch was due to outmoded, static and fractured healthcare curricula in SSA. The paucity of nursing research output from SSA creates the opportunity for the academics to develop and review curricula using western research which may not be applicable to SSA context (Adejumo & Lekalakala-Mokgele, 2009; Sun & Larson, 2015; Kpodo, Thurling & Armstrong, 2016). The focus on curative care instead of the needed Primary Health Care and the episodic technical

responses to healthcare challenges without contextual insight are contributing factors to the healthcare need and education mismatch (Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Fineberg, Garcia, Ke, Kelley, Kistnasamy, Meleis, Naylor, Pablos-Mendez, Reddy, Scrimshaw, Sepulveda, Serwadda, Zurayk, et al., 2010).

Sheer and Wong (2008) posited that the characteristics of the nurse trained at the APN level must be shaped by the context in which they are licensed to practice and that every country must recognize the need and practice of the APNs in their specific context of healthcare. It is essential for curricula to be responsive to the context within which the graduates will practice. The World Bank proposed the recruitment of students with rural background and tailoring their training towards the management of local diseases and health issues as a way of matching training with needs and reducing rural-urban migration (Soucat, Scheffler & Ghebrey, 2013).

1.6 PROBLEM STATEMENT

About half of the population of SSA is less than 18 years of age (Ahmed et al., 2011; World Bank Group, 2015; populationpyramid.net, 2016). Sixty-five percent of children born in Africa suffer the consequences of poverty, 50% of them lack good shelter, about 45 % lack good water, 30 % are excluded from education, 27% are deprived of healthcare, 14 million of them are orphaned through HIV/AIDS whereas a third of them are excluded from various social amenities due to their gender and ethnicity (Garcia, Pence & Evans, 2008).

Whereas the western world is battling with non-communicable diseases and diseases of old age, sub-Saharan Africa is experiencing an inordinate communicable and infectious disease burden. The meagre nursing research SSA Africa coupled with the various political, economic, social, technological legal and resource challenges (Sheer and Wong 2008) lead to the development of the paediatric nursing curriculum on western philosophy and materials (Coetzee, 2014; Kpodo, Thurling & Armstrong, 2016). This is evident in the curative focus of the paediatric nursing programmes in SSA instead of the much needed preventative oriented health workforce to function in Primary Health Care (Swingler et al., 2012; Coetzee, 2014).

The majority of healthcare facilities and practitioners are located in the cities and towns, thus denying the larger proportion of the population who live in rural and urban slums timely, quality and cost-effective healthcare (Ahmed et al., 2011; East et al., 2014; Kimani-Murage et al., 2014; Tong, 2015; Mwangi, 2017). The majority (about 55-64%) of child deaths in some sub-Saharan African countries are preventable, 55% of children die before reaching

healthcare facilities, 31% die within 24 hours of hospitalization. Healthcare professionals are responsible for about 55% of the cause of death (Coetzee 2014; Nannan *et al.* 2012 & Mulaudzi 2015). This means that if the children were to have timely quality healthcare, most of the deaths would have been prevented. The education of the professionals have not been responsive to the population dynamics and healthcare needs due to the static, fragmented and outdated curricula (Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Fineberg, Garcia, Ke, Kelley, Kistnasamy, Meleis, Naylor, Pablos-Mendez, Reddy, Scrimshaw, Sepulveda, Serwadda & Zurayk, 2010).

Various efforts have been made by universities and colleges in SSA to establish APN programmes but hindered by lack of context-specific benchmark programmes, the scope of practice, lack of political will, legislation and lack of resources (Sheer and Wong 2008). Strengthening child health in SSA requires a critical look at the curriculum that produces the child healthcare nurses (Coetzee, 2014). There is no framework to guide governments and institutions in the development of relevant and responsive Advanced Practice Nursing (Child Health Nurse Practitioner) curricula in SSA.

The development of a Child Health Nurse Practitioner curriculum framework for SSA will guide institutions and governments in their quest to develop, review and maintain relevant and responsive APN curricula in SSA. Such curricula will help SSA in responding to the child health needs and achieving, in part, the United Nations Sustainable Development Goal 3 (United Nations, 2015).

1.7 SIGNIFICANCE OF THE STUDY

This study developed a concept-based Child Health Nurse Practitioner curriculum framework to guide sub-Saharan African countries, Nursing Education Institutions and other nursing education, research and practice institutions in the development of relevant and responsive Child Health Nurse Practitioner curricula. Being the first to develop a concept-based Advanced Practice Nursing curriculum framework in sub-Saharan Africa, this study will take a centre stage in further studies, academic discourse and practice in the area of Advanced Practice Nursing curriculum development in SSA will revolve. The curriculum framework will serve as the SSA context specific benchmark for the development and implementation of CHNP curriculum.

1.8 RESEARCH QUESTION

What are the mechanisms and processes of developing an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum that is relevant and responsive to the special healthcare needs of sub-Saharan Africa?

1.9 PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of this study is to develop a curriculum framework to guide governments and Nursing Education Institutions in the development of relevant Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum that responds to the child healthcare needs of sub-Saharan Africa

The main objectives of the study are as follows:

- To establish the current state of Advanced Practice Nursing and child health in sub-Saharan Africa.
- To establish expert opinions on mechanisms and processes of developing a relevant and responsive APN (Child Health Nurse Practitioner) curriculum in SSA.
- To develop a Child Health Nurse Practitioner curriculum framework to guide countries and institutions in the development of relevant and responsive Child Health Nurse Practitioner curricula in SSA.

1.10 CONCEPTUAL DEFINITIONS

This study shall be guided by the following conceptual definitions:

- **Sub-Saharan Africa:** Sub-Saharan Africa consists of all African countries except the five Arab African countries (Algeria, Egypt, Libya, Morocco and Tunisia).
- **Advanced Practice Nurse:** The International Council of Nurses (ICN) definition will be adopted viz. “registered nurses who have acquired the expert knowledge base, complex decision-making skills, and clinical competencies for expanded practice, the characteristics of which are shaped by the context or country in which they are credentialed to practice”
- **Advanced Practice Nursing Programme:** any masters’ level nursing programme in Child Health nursing that gives the nurse an expert knowledge base, complex decision-making skills, and clinical competencies for expanded infant, children and adolescent nursing care in SSA.

- **Curriculum Framework:** a document that guides any academic or research institution to develop and/or review an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum within sub-Saharan Africa.
- **Curriculum:** formal structure and processes through which a student gains knowledge, skills, attitudes and capacity to meet up with predetermined outcomes and standards of the educational system and society (Ignatavicius 2017).
- **Curriculum Development:** Curriculum development focuses on engaging stakeholders' commitment and ownership in appraising, planning, developing, implementing and sustaining curriculum (Parsons & Beauchamp, 2012).
- **Advanced Child Health Nurse Practitioner (ACHNP):** is any nurse trained at the masters level with the expertise in providing Primary Health Care (performing in-depth physical assessment, requesting and interpreting medical laboratory tests, diagnosing and managing common childhood diseases, follow-up care, referral services, childhood immunizations, school health programmes and counselling) for children in sub-Saharan Africa (SANC & South African Nursing Council, 2005; SANC, 2012; RCN, 2014).
- **Learning opportunity:** refers to the situations the faculty creates for the students to acquire knowledge, skills and attitudes recommended of them by the curriculum.
- **Concept:** Concepts are abstract ideas or thought patterns that have distinct characteristics exhibited in phenomena, thus, generalizable.
- **Exemplar:** Exemplars are the specific aspects of the content of the curricular that defines a specific concept.
- **Macro-concept:** A group of concepts with similar orientation forms a macro-concept which provide the depth of the profession and creates the opportunity for deep learning
- **Mega concept:** a group of similar macro-concepts form a mega concept which provides the breadth of the nursing profession
- **Module:** A unit within a programme or a course, which can be examined separately.
- **Concept-based curriculum (CBC):** A concept-based curriculum is a student-centred, competency-based and andragogic curriculum in which concepts form the framework of the learning programme and are learned through exemplars.
- **Stakeholders:** Individuals or groups who have an interest in the outcomes of nursing education and practice in sub-Saharan Africa
- **Course outline:** A brief description of a course which allows the reader to understand the curriculum.

- **Child Health:** refers to all the necessary policies, strategies and practices that promote complete physical, psychological and social-wellbeing of anyone less than the age of nineteen.

1.11 ORGANIZATION OF THE THESIS

This thesis is divided into nine (9) chapters as described in Table 1.6.

Table 1.6: The overview of the thesis

CHAPTER		OJECTIVES
1	Overview Of The Study	The introduction and background of the study
2	Literature Review	Literature review on Advanced Practice Nursing, curriculum, curriculum development, concept-based curriculum and curriculum framework
3	Research Methodology:	Description of the methods and tools used to reach the results of this study, thus, answering the research question and meeting the objectives to fulfil the purpose of the study.
4	The Scoping Review	To establish current state of Advanced Practice Nursing and child health in sub-Saharan Africa through a scoping review in order to develop the Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa
5	Delphi study	To explore multidisciplinary expert opinions on best ways of making APN (Child Health Nurse Practitioner) curriculum relevant and responsive to the health needs of sub-Saharan Africa through a Delphi survey
6	The Development of Concepts for the Curriculum Framework	To develop a Child Health Nurse Practitioner curriculum framework to guide countries and institutions in the development of relevant and responsive Child health Nurse Practitioner curricula in sub-Saharan Africa
7	The Development of the Child Health Nurse Practitioner Curriculum Framework	To develop and confirm the Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework for sub-Saharan Africa
8	Confirmation and Evaluation of the Child Health Nurse Practitioner curriculum Framework	To evaluate and revise the curriculum of the Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa
9	Discussion, conclusion and recommendations	To discuss the results of the study, conclude and made recommendations.

10.12 CONCLUSION

Chapter one presents an overview of the study, looking at the context, the importance of Primary Health Care, Advanced Practice Nursing and Child Health within the context. The

statement of the problem, the purpose and objectives of the study, the significance of the study, conceptual definitions and the organization of the thesis were also presented in chapter one. Chapter two presents the literature review.

CHAPTER 2 : LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents the literature review on Advanced Practice Nursing, curriculum, curriculum development, concept-based curriculum and curriculum framework.

2.2 ADVANCED PRACTICE NURSING

The International Council of Nurses (2016) defined Advanced Practice Nurses as licensed nurses who gained advanced specialist knowledge, complex decision-making skills, and expanded clinical competencies for contextual nursing practice. The Canadian Nurses Association also defined the APN as a higher level of nursing practice that utilises postgraduate training, deeper knowledge and skills to meet the healthcare needs of the population they service (Kaasalainen et al., 2010). They believed that a higher form of thinking such as analysis, evaluation and synthesis of new knowledge and methods is important in APN education and practice (Kaasalainen et al., 2010).

The Advanced Practice Nursing programme is a new trend in nursing and healthcare practice. It emerged due to the need for countries to reduce the cost of healthcare and improve access to healthcare by providing high-quality care, reducing the length of hospitalization and preventing hospitalization through Primary Health Care (Canadian Nurses Association, 2008; Sheer & Wong, 2008; Duffield et al., 2009; Currie, Chiarella & Currie, 2013; East et al., 2014; Swan et al., 2015). Sheer and Wong (2008) posited that the characteristics of the nurse trained at the APN level must be shaped by the context or country in which they are licensed to practice and that every country must recognize the need and practice of the APN's in their specific context of healthcare.

Advanced Practice Nurses have been providing care, licensed or not, in various jurisdictions. Gaining autonomy to practice has been the point of contention in all the jurisdictions in which their practice has been legally accepted or not. Autonomy is defined as 'practicing with no requirement for a written collaboration agreement, no supervision and no conditions for practice' (Mccleery et al., 2014). Regarding autonomy, the most fought over concepts are the right to diagnose and to prescribe medicines. Many other important concepts such as practice entry, the power to cost service provided, ability to admit and discharge patients and being

recognised as a principal care provider are not really considered (McCleery et al., 2014). Advanced Practice Nursing has been documented in South Africa, Kenya, Zambia, Malawi, Swaziland, Botswana, Uganda, and Rwanda but the scope of practice and legislation to formalise their respective practices is not explicit (INEPEA, 2008a; Sheer & Wong, 2008; Chang et al., 2010; Kaasalainen et al., 2010; East et al., 2014; Sastre-Fullana et al., 2017). An overview of the Advanced Practice Nursing roles in some selected countries that have successfully implemented the APN programmes is discussed below.

2.2.1 Canada

In Canada, the APN roles emerged through the task shifting of nurses to work in the hard to reach areas such as Newfoundland and Labrador in the 1890s (Duffield et al., 2009; Kaasalainen et al., 2010). In the 1960s, the APN roles were formalized in Canada (Kaasalainen et al., 2010). The introduction of the advanced roles in Canada started after the Second World War due to the dire need of nurses to fill in the roles of general practitioners. This was as a result of the tuberculosis pandemic and the shortage of psychiatric nurses. The four major driving forces of APN in Canada from the mid-1960's to the early 1970's were:

- The introduction of the public funded national health insurance,
- The acute shortage of medical doctors,
- The government policy in support of Primary Health Care and
- The shift towards specialization of the medical profession (Kaasalainen et al., 2010).

In 1972, when basic nursing training was still undergoing difficulty in many sub-Saharan African countries, Canadian Department of National Health and Welfare tasked the Committee of Nurse Practitioner to report on the APN introduction in Canada (Kaasalainen et al., 2010). The committee report (Boudreau report in 1972) stated that the Advanced Practice Nurses are highly recommended as the first point of Canadian contact to the healthcare system and are very important for the success of Primary Health Care in Canada (Kaasalainen et al., 2010).

2.2.2 United State of America (USA)

In the United States of America, the introduction of the Advanced Practice Nursing roles was due to the need for the country to provide quality healthcare at affordable rates to the underserved communities (Sheer & Wong, 2008; Duffield et al., 2009). A pilot APN programme was conducted in the United States of America in response to the escalating cost of healthcare, shortage of general practitioners and poor distribution of healthcare human resource (Sheer & Wong, 2008). The American Nurses Association (2011) stated that the majority of the Advanced Practice Nurses work in the PHC settings, rural communities, major

metropolis and inner-cities delivering care to the underserved populations. Even though the APN roles were in existence in the 1940s, it was only in 1954 that the first Advanced Practice Nursing programme (psychiatric nursing) was established at Rutgers University. This was pioneered by Hildegard. E. Peplau, the author of ‘Theory of Interpersonal Relations’, (Sheer and Wong, 2008). The full recognition of the APN was realised in 1965 when the Nurse Practitioner programme was introduced (Sheer and Wong, 2008). Even though the programmes and the roles evolved over time and became acceptable in the country, opposition and resistance to the APN roles still exist in the USA. Studies conducted (Seale, Anderson & Kinnersley, 2005; Hutt et al., 2013; Pirret, Neville & La Grow, 2015; Swan et al., 2015) have proven that the APN provides the same or higher level of patient care at a lower cost and to the better satisfaction of clients (Sheer and Wong, 2008).

Most of the Advanced Practice Nurses are in the Nurse Practitioner category and are trained at a minimum of a masters degree level (Sheer & Wong, 2008; Duffield et al., 2009). The Doctor of Nursing Practice (DNP) programme was developed to create a career path for the Advanced Practice Nurses in the USA (Sheer & Wong, 2008; Duffield et al., 2009).

2.2.3 United Kingdom (UK)

The Advanced Practice Nursing started in the UK to serve the underserved rural communities in the early 1980s but the first Nurse Practitioner programme was established in the United Kingdom in 1991 for the Royal College of Nursing (Sheer and Wong, 2008). Like the Boudreau report in 1972 in Canada, the “Post Registration Education and Practice Project (PREP)” in the United Kingdom stated that the Advanced Practice Nurses demonstrated a higher level of thinking and clinical judgment in diagnosing and prescribing medications. The report further stated that the APN improved the standards of care. The APN’s were instrumental in clinical audits, the development and leading practice, research, teaching and peer support (Duffield et al., 2009). With the development of various categories of APN through different levels of nursing qualification and nomenclature, it is becoming very difficult for Nursing and Midwifery Council to regulate the practice under the same standard in the United Kingdom (Duffield et al., 2009).

2.2.4 Other Jurisdictions

As in Canada, USA and the United Kingdom, many other nations and states have recognise the APN as the best category of healthcare workforce in responding to the poor access to quality and cost-effective healthcare especially in the deprived areas where medical doctors are either resistant to go or are not enough to cover (Canadian Nurses Association, 2008;

Sheer & Wong, 2008; Duffield et al., 2009; Currie, Chiarella & Currie, 2013; East et al., 2014; Swan et al., 2015).

In China, the Advanced Practice Nursing roles were introduced as a result of a reduction in medical doctors posted to hospitals in a health reform. Some of the Advanced Practice Nurses were introduced to take care of clients with cardiovascular problems. In the Midlands of China, the advanced practice roles were introduced under an unusual circumstance in which the number of medical doctors were more than the nurses (Sheer & Wong, 2008).

In Japan, as of 2008, about 25 universities offer Advanced Practice Nursing programmes for different specialities. These programmes were accepted nationally and the Advanced Practice Nurses are certified by the Japanese Nursing council (Sheer & Wong, 2008).

In Korea, the roles of Advanced Practice Nursing existed and have been accepted since the 1950's even though the term Advanced Practice Nursing was not in existence at the time. The role evolved with the addition of various specialities up until the year 2000 when all the roles were brought under the Advanced Practice Nursing umbrella and licensed by the Korean Ministry of Health (Sheer & Wong, 2008).

Singapore started APN training in the year 2003. The roles of the APN were evaluated and found to be effective in prescription and monitoring of the therapeutic regimen. The country intends to increase the number of the APN over the years (Sheer & Wong, 2008).

Thailand had their first APN certified in the year 2003, a year before Singapore graduated their first cohort of masters level trained Advanced Practice Nurses (Sheer & Wong, 2008).

In Australia, the Advanced Practice Nursing programme was introduced in the year 1990. The Advanced Practice Nurses were posted to the rural and underserved communities to provide medical care. Reports commend the Advanced Practice Nurses' provision of quality healthcare to the rural communities. Even though some provinces in Australia permit Nurse Practitioners to prescribe, some resist the move to expand the roles of the Nurse Practitioner to include the prescription of medications. There were calls for the country as a whole to recognise the roles of the nurse practitioners who are trained at the masters level to improve access to healthcare to the population, especially the underserved (Sheer & Wong, 2008).

In New Zealand, the role started in the year 2000 with 38 nurses trained at the masters level and licensed to use the APN title but only 17 of them were granted the right to prescribe by the New Zealand Nursing Council (Sheer & Wong, 2008).

2.2.5 Sub-Saharan Africa

Advanced Practice Nursing is an emerging area in sub-Saharan Africa with anticipated benefits. Various efforts by the universities and colleges in sub-Saharan Africa to establish APN programmes are being hindered by lack of role models, lack of scope of practice, and difficult reimbursement mechanisms' (Sheer & Wong, 2008).

There are various Advanced Practice Nursing programmes in the SSA. East Africa has a peculiar trend in the APN programme. The Improving Nursing Education And Practice in East Africa (INEPEA) collaborated with some universities and countries to initiate a common APN curriculum (INEPEA, 2010). This curriculum is to be implemented by various institutions including Makerere University (Uganda), The Zanzibar College of Health Sciences (Tanzania), Kenyatta University (Kenya) and Aga Khan University (Kenya) within the East African sub-region. Unfortunately, the nursing councils and the governments have not developed legislation to recognise these qualifications (Mwangi, 2016). This APN programme is at the masters level of nursing education (INEPEA, 2010).

The West African Nursing Council registers are yet to record an Advanced Practice Nurse category (ICN, 2014). The West African College of Nursing stated that they will need to lobby, advocate, explain, for a period of time to be able to get the countries recognise the need for Advanced Practice Nursing education and roles in the near future (Madubuko, n.d.; ICN, 2014). There is, therefore, the need to shift the boundaries of nursing legislation into medical practice roles to enable well-trained nurses (APN) to take up some medical practice roles in order to improve access to quality and affordable healthcare for the West African population (Madubuko, n.d.; ICN, 2014).

The move for Advanced Nursing practice has gained more ground in Southern Africa than the East, Central, and West Africa. South Africa currently implements two main tracks of APN programmes- the Nurse Specialist (postgraduate diploma level) and Advance Nurse Specialist (masters level) (Duma et al., 2012; SANC, 2012). A major breakthrough in APN programmes in Southern Africa is the Primary Health Care nursing programme which allows nurses to prescribe using protocols in South Africa and the Family Nurse Practitioner in Botswana. Unfortunately, all these categories of Advanced Practice Nurses do not have scopes of

practice or legislation conferring autonomous diagnosis, prescription, admission, discharge and referral roles on them.

With nurses forming the majority and readily available health workforce in SSA Africa, improving quality and access to healthcare within the SSA where preventive services are needed is essential.

2.2.6 Advanced Practice Nurses versus General Practitioners

The main opposition to the Advanced Practice Nursing role is the medical profession, thinking that the ability to assess, diagnose, prescribe medication, monitor therapeutic regimen, admit and discharge is their 'birth right' (Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Fineberg, Garcia, Ke, Kelley, Kistnasamy, Meleis, Naylor, Pablos-Mendez, Reddy, Scrimshaw, Sepulveda, Serwadda, Zurayk, et al., 2010). A few studies have compared the quality of care provided by the APN and the general practitioner.

In a study conducted in New Zealand to determine the difference between the nurse practitioner and the general practitioner in terms of diagnostic reasoning, it was concluded that there is no significant difference between the diagnostic reasoning between the two categories of health professionals regarded making diagnoses, finding patient problems and planning treatment (Pirret, Neville & La Grow, 2015).

A systematic review conducted by Swan, Ferguson, Chang, Larson, & Smaldone (2015) found that Advanced Practice Nurses spend more time in consulting patients but produce the same quality of care compared to general practitioners. They further stated that the assessment and patient education by the APN are more thorough than the general practitioner and the cost of care provided is either equal or lower compared to that of the general practitioners. The APN spends as much as twice the time spent by the general practitioner on patient consultation and provides enough information to patients, resulting in higher patient satisfaction with APNs' care than that of the general practitioners (Seale, Anderson & Kinnersley, 2005).

A systematic review conducted by Hutt et al., (2013) demonstrated that patient outcomes were better in care provided by nurse practitioners than general practitioners in terms of serum lipid levels. In terms of patient satisfaction, health and functional status, other blood assays,

emergencies and hospitalization, the outcomes were similar in nurse practitioners and general practitioners (Hutt et al., 2013).

2.2.7 The Need for Advanced Practice Nurses in Sub-Saharan Africa

Every nation has the responsibility to align their human resources and training with their population needs in order to maximise the nations' resources (World Health Organization, 2016a). Globally, the number and capabilities of the nursing profession are being leveraged to improve access to quality cost-effective healthcare (Ngángá & Woods, 2012). Nurses provided quality and safe care when they were given the opportunity to practice beyond their scope of practice through task shifting (Shumbusho et al., 2009; Collaghan, Ford & Schneider, 2010; Ngángá & Woods, 2012; Terry et al., 2012). Task shifting responsibilities are given to nurses without the proper scope of practice mainly due to medical professions' *'tribalism'* against the nursing profession (Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Fineberg, Garcia, Ke, Kelley, Kistnasamy, Meleis, Naylor, Pablos-Mendez, Reddy, Scrimshaw, Sepulveda, Serwadda, Zurayk, et al., 2010)—the phenomenon in which the medical profession believes they own diagnosis and prescription of medication and will not allow the nursing profession to expand their traditional boundaries of practice even if the population suffers the coinsiquences.

2.2.8 Competencies for APN

Various types of Advanced Practice Nursing roles exist throughout the world either regulated or unregulated (Nursing and Midwifery Board of Ireland, 2017). The categories reported in literature include: Nurse Practitioner (NP), Clinical Nurse Specialist (CNS), Nurse Midwife (NM), Certified Nurse-Midwife (CNS), Nurse Anaesthetist (NA), Consultant Nurse (CN) and Nurse Case Manager (NCM), Specialist Practitioner (SP), Specialise Community Public Health Nurse (SCPHN), Nurse Prescriber (NP) and the Primary Health Care Nurse (PHCN). The roles performed by these APNs differ in terms of jurisdiction and speciality. The most commonalities related to their roles reported in literature consists of “research, clinical and professional leadership, mentoring and coaching, collaboration and inter-professional relationships, expert clinical decision making, ethical and legal practice, teaching, quality management, consultancy, health promotion, and advocacy” (INEPEA, 2008a; Sheer & Wong, 2008; Chang et al., 2010; Kaasalainen et al., 2010; SANC, 2012; East et al., 2014; Nursing and Midwifery Board of Ireland, 2017; Sastre-Fullana et al., 2017).

2.3 CURRICULUM AND CURRICULUM DEVELOPMENT

Curriculum is defined in various ways by various scholars and institutions (South African Qualifications Authority, 2000b; Uys & Gwele, 2004). To some scholars, curriculum is content (list of facts and figures) that students need to memorise and regurgitate (South African Qualifications Authority, 2000b; Higgins & Reid, 2017). To other scholars, it is a process, outcome or a framework. Uys & Gwele (2004;1) defined curriculum as ‘planned learning experiences that the educational institution intends to provide for its learners’. Hall (2014) defined it as an intentionally designed learning opportunity provided by an institution to students as an interactive event integrated with learning experiences throughout the programme of study. According to Beigi, Keramati and Ahmadi (2011), it is the why, what, when, where, how and the who of teaching and learning.

Curriculum is seen as the pivot of human existence and the duty of society as it concerns governments, educationists, students, parents, and communities for its relevance and impact on nation building (Parsons & Beauchamp, 2012). The South African Qualification Authority (2000) conceptualised curricula as the totality of all learning and teaching activities that take place in a higher education institution. Ignatavicius (2017) defined curriculum as either formal or an informal structure and processes through which a student gains knowledge, skills, attitudes and capacity to meet up with predetermined outcomes and standards of the educational system and society. She further differentiated formal curriculum from the informal one, stating that the former is explicitly documented in an educational institution’s archive whereas the latter consists of learning opportunities that may not be planned (Ignatavicius, 2017).

From the definitions above, it is evident that a curriculum must, explicitly, state the goals of the educational institution, the need for the programme, what must be learnt and taught, how teaching and assessment is organised, the values upon which teaching and learning are based, how long it will take a student to complete the curriculum, what the students must gain after completing the curriculum and what the students can do after completing the curriculum (South African Qualifications Authority, 2000b; Uys & Gwele, 2004; Stabback, 2007).

Curriculum development, on the other hand, focuses on engaging stakeholders commitment and ownership while appraising, planning, developing, implementing and sustaining curriculum (Parsons & Beauchamp, 2012). The nursing curriculum must be coetaneous, germane and responsive to the needs of the people it serves (Uys & Gwele, 2004; Sheer &

Wong, 2008; Hall, 2014). Parsons and Beauchamp (2012) stated that it is not advisable to copy and implement curricula from another jurisdiction without considering the differences in context and the educational system in which it implemented. Adoption of foreign curriculum and educational methods is inevitable at the current stage of African educational development. It is, however, necessary to adapt any adopted method to fit the sub-Saharan context and to evaluate the effectiveness of such methods within the region.

2.3.1 Overview of Educational Philosophy

The type of curriculum chosen by an educational institution is dependent on their philosophical perspective of knowledge and how such knowledge is acquired (Uys & Gwele, 2004; Moss & Lee, 2010; Joseph, 2015; Higgins & Reid, 2017). According to Uys and Gwele (2004), there are three main philosophical worldviews: the conservative, progressive and radical.

The Conservatives (perennialists and essentialists) believe that there is wealth of information in the traditional curriculum and must be protected from any attempt to change. They support teacher-centred education in which knowledge is transmitted from the teacher to the learner (Uys & Gwele, 2004; Moss & Lee, 2010). They see education as a means of socializing students into their expected roles in society through the mastery of laid down skills and attitudes (Pinnegar & Erickson, 2010). The content of the curriculum is valued over the process and outcomes in conservatism (Uys & Gwele, 2004; Moss & Lee, 2010).

Within conservatism, the perennialists believe education should be centred around the acquisition of basic skills such as reading, writing and making arithmetical deductions (Uys & Gwele, 2004; Moss & Lee, 2010). They believe there is a prescribed body of knowledge, which all members of a society must learn in order to form a uniform society in terms of thoughts and behaviour. This is typical of nursing as a community or society (Uys & Gwele, 2004; Moss & Lee, 2010).

On the other hand, the essentialist believes that knowledge is what is real and exists outside the individual, therefore, must be gained through observation (Uys & Gwele, 2004; Moss & Lee, 2010). They believe that there are some essential skills that need to be preserved and passed down from generation to generation. Also, they believe that not all knowledge or information is essential and therefore proposed some subjects as essential/compulsory (Mathematics, English, History, Science and Modern Languages). Some other subjects such

as music, arts, vocational studies and physical education are described as non-essential (Uys & Gwele, 2004; Moss & Lee, 2010).

The second worldview (progressivism) postulates that the traditional education and curricula are content-based, therefore do not consider the needs and satisfaction of the learner. The first stream of the progressivist philosophy based on J.J. Rousseau (1712-1778) believed that “the best thing the teacher should do is to do nothing” arising from the premise that society intrudes too much into the learners education if not, every individual will learn to be a unique person and thinker devoid of societal patterns (Uys & Gwele, 2004). A closer concept to the romantic naturalist is existentialism which advocates that the individual must find his or her own meaning about life through freedom of choices and introspection. They existentialist believe that existence comes before essence (Uys & Gwele, 2004; Moss & Lee, 2010).

The second view of the progressivism comes from John Dewey (1859-1959) who believed that education must not be separated from the context because the students need to experiment within the social context. His philosophy is centred on prioritizing the experience and interests of students rather than the prescribed content to be imbibed (Uys & Gwele, 2004). The progressivists believed that knowledge is not static or limited to some essential skills or content but dynamic since change is the only constant in human existence. They hold the belief that the experiences and interest of a student are as important as the content of the curriculum, therefore, the interests and experiences of students should be capitalised upon by the teacher to deliver content (Uys & Gwele, 2004; Moss & Lee, 2010). Dewey reckoned that the experiences of the learner are a better source of knowledge than what is contained in the textbook.

In his experimentalist philosophy, Dewey believed that knowledge and reality exist outside the self and is observable, thus truth is the only reality that can be tested and proven through scientific experiment. In pragmatism, Dewey, Pierce and Whitewood postulated that if knowledge is true and real, then it must work or produce expected results, that is, outcomes determine reality or truthfulness of knowledge. An experimentalist curriculum therefore centres on developing the life experiences of learners to deliver the content of the programme (Uys & Gwele, 2004; Moss & Lee, 2010).

Lastly, the radical educational philosophy is of the view that education should not only be progressive (prepare students for participatory democracy) but should also prepare students to engage in deliberative democracy (decision making through deliberation on ideas and issues)

(Uys & Gwele, 2004; Moss & Lee, 2010). Paulo Freire (1921-1997) in *“The pedagogy of the oppressed”* (1970) stated that the oppressed (the student) must play a critical role in his or her liberation (education). Freire believed that education is very important as it gives individuals the ability to make and remake themselves (Uys & Gwele, 2004). There are two major divisions of radical educational philosophy, namely: reconstructionism and critical curriculum theory (Uys & Gwele, 2004; Moss & Lee, 2010).

The Reconstructionist believed education is essential in providing social, economic, political and cultural change. They believe that it does not take progressive educational philosophy (which is too slow and centred on problem-solving skills) to deal with societal inequalities but revolution and constructive engagements. Within the Reconstructionist philosophy of education, there exist two dimensions, the methodological and the ideological worldviews. The methodological Reconstructionist philosophy advocates evidence-based strategies for social change whereas the ideological Reconstructionist philosophy places emphasis on the development of theories and conceptualizing Reconstructionism as an act of education. A methodological Reconstructionist, Ralph Tyler, believes that the needs of the students, previous knowledge acquired, and their life outside the school environment, their characteristics and subject expert opinion are important in curriculum development.

Critical curriculum theorists believe that the student must be equipped to become a critical thinker and an agent for societal change. Curriculum content is not seen intrinsic in critical curriculum theory but selected based on social importance (Moss & Lee, 2010). John Dewey believes that the curriculum content must be taught with scenarios that represent reality in society to enable students to gain social insight and responsibility.

2.3.2 Overview of Common Types of Nursing Curriculum

Educational curricula remain a socially and politically contested concept worldwide because of the essential role education play in the transmission of ideologies (worldviews) and societal culture. Nations, international communities and organisations have invested in many educational projects because of the essence of education for communities and the globe at large (Uys & Gwele, 2004; Stabback, 2007; Trapese.clearerchannel.org, 2011).

Hegemony, dominant ideology, determines the ideological direction in which education curriculum goes (Hicks, 2004). The concept of hegemony simply states that the dominant political and social belief, values and generally accepted practices of a society and educational

system determines what goes into the curriculum and how it is taught and accessed. In some instances in sub-Saharan Africa, the dominance of colonial concepts and beliefs influenced the content, teaching and assessment methods of educational programmes hence the call for conceptualization and decolonizing nursing curriculum (McGibbon et al., 2014; Mulaudzi, 2016; Vasuthevan, 2017). International institution and organizational charters also influence national policies and curriculum. For instance, the Convention on the Rights of the Child passed by the United Nations General Assembly in 1998 is binding on all member states to uphold the rights of children in all policies they make and implement (UNICEF, n.d.; OHCHR, 1990). International funders also have a say in local curriculum and teaching materials in sub-Saharan Africa (UNESCO, 2009).

Curriculum is then defined based on the theoretical orientation of the forces that dominate an educational system. According to Oliva (1997) cited in (Wilson, 2017), curriculum could be defined as:

“That which is taught in schools; a set of subjects; content; a program of studies; a set of materials; a sequence of courses; a set of performance objectives; a course of study; everything that goes on within the school, including extra-class activities, guidance, and interpersonal relationships; everything that is planned by school personnel; a series of experiences undergone by learners in a school; that which an individual learner experiences as a result of schooling”.

Curriculum can be:

- **Overt:** a curriculum that is explicitly written. It spells out what the student is to know and how it should be taught and assessed (Wilson, 2017)..
- **Societal:** the forms of informal and uncontrolled training within society through various media for various social, political and economic reasons. It is life-long and has no time limits (Wilson, 2017)..
- **Hidden:** a form of learning that the student gains through the experiences and actions of those involved in the school. This is not written down but is expected that the student will be able to acquire such knowledge, skills and attitudes. For example, how to comport oneself in public gathering, how to sit in class and public gathering, submitting work/assignments on schedule (Wilson, 2017)..
- **Null:** this refers to the part of the curriculum that the school does not teach, implying that it not necessary or vital to neither students nor society. For example, in religious studies courses in most African context, Christianity and Islam are taught implying that other forms of religion that might exist in their countries are not very relevant (Wilson, 2017)..

- **Phantom:** this is the type of knowledge, skills and attitudes the student acquires through the uncontrolled media exposure within and outside the school environment. This shape the social and professional life of the individual. In the 21st century, the phantom curriculum is playing a major role in the life of the students as they seek to model their lives after icons and popular media figures (Wilson, 2017)..
- **Concomitant:** this is the type of teaching and learning that goes on in the home of the student. These are mostly values and belief systems which influence the way of life of the students in and outside the school. Sometimes these curricula could conflict with the school curriculum, leaving the student in dilemma (Wilson, 2017)..
- **Rhetorical:** this represents the thought and positions taken by policymakers and stakeholders in curriculum reform and implementation. Their thought and ideas could be communicated through verbal and non-verbal means (Wilson, 2017)..
- **Curriculum-in-use:** this refers to the portion of the formal written curriculum (textbooks, study guides, online learning resources etc.) taught by the teacher (Wilson, 2017)..
- **Received curriculum:** this is the portion of the curriculum taught that the student has grasped. This is dependent on the student as it is completely out of control of the educational stakeholders (developers and implementers) of the curriculum (Wilson, 2017)..
- **Electronic:** this is information acquired by the student through the internet. Depending on the source of the information, the purpose of the educational system and societal values, these lessons could be overt or covert. It could be good or bad, wrong or right. The worth of information on the internet is overwhelming that controlled sources are used to implement educational curricula in the 21st century. These sources are called learning platforms and examples are Ovid, Sakai and Moodle (Wilson, 2017)..
- **Assessed curriculum:** this is the portion of the curricula on which students are assessed. This is the portion of the curricula is important to the student as grades form an important part of the life of students and their career development. Mostly teachers lay emphasis on these portions of the curriculum whiles students spend most of their school time scheming and strategizing on how to master such portions of the curriculum (Wilson, 2017)..
- **Extra curriculum:** this is the activities that the student engages in outside the school curriculum. It could be sports, business, and others (Wilson, 2017).

There are some types of curriculum that have been implemented by nurses over the years. These include:

2.3.2.1 Content-based Curriculum

A content-based curriculum is an overt curriculum which indicates what must be taught, how it should be taught and how learning should be evaluated. The specified content can be organized chronologically or in order of difficulty. This type of curriculum allows for a large number of students as there is less interaction between the teacher and the student. Teaching in this system is mostly teacher-centred and unidirectional.

2.3.2.2 Experience-centred Curriculum

The experience-centred curriculum is when the learning activities are based on the experiences of the students. John Dewey claimed that students learn through their experiences and these are very vital for their development than the content they are taught. These experiences are life-long (Shodhganga n.d.). Kolb (1984) also alluded that experiential learning is cardinal to knowledge acquisition and classified experiential learning into four cyclical phases, which are: concrete experience, reflective observation, abstract conceptualisation and active experimentation. The first stage is for the student to have a concrete experience of the learning situation. The student then reflects on these experiences to arrive at some abstract conclusions. These conclusions are then conceptualised, and put to test, thus practice or experimentation (Kolb, 1984; Andresen, Boud & Cohen, 2000). The student should be respected and given the opportunity to share and reflect on their previous experiences and emotions in order to draw learning and inspiration from them (Andresen, Boud & Cohen, 2000).

2.3.2.3 Outcomes-based Curriculum

This is a competency and performance-based curriculum that aligns learning with certain competencies that are required from the student during and after the training (Du Plessis 2005). It determines where the student is and where the education programme must take the student, thus predetermining the endpoint/outcomes of educational programmes (Du Plessis, 2005). The curriculum, teaching and learning methods are designed for the acquisition of such knowledge, skills and attitudes. It is student-centred and does not necessarily focus on inputs (the resources available to students). This curriculum type had a very good reception from nursing educators and clinicians as they can measure the achievements of the students against set standards which are well established prior to training. The students also find it easy to choose the important knowledge, skills and attitudes to learn from the worth of textbooks, internet resources and clinical situations.

2.3.2.4 Standard-based Curriculum

In standard based curriculum, the developing authority goes further from setting outcomes to defining the criteria for teaching/learning and assessment of the outcomes.

2.3.2.5 Community-based Curriculum

Community-based curriculum is the type of curriculum in which the learning opportunities of the education programmes are mainly planned in the community. The community becomes the learning environment. The student encounters the various stakeholders of education and other sectors of society in the community during their training.

2.3.2.6 Case-based Curriculum

To make teaching much experiential, student-centred, practice-based, case-based and problem-based curricula were introduced. Case-based curriculum is based on the constructivist educational philosophy of Jerome Bruner (1915-2016) and the experientialism of John Dewey (Health Education England, 2012; Kantar & Massouh, 2015). This curriculum brings the students closer to their expected workplace, so as to train them to fit into the professional environment through critical thinking, problem-solving and clinical reasoning skills. This is considered as one of the best discoveries in nursing and other health professional education (Health Education England, 2012; Kantar & Massouh, 2015; Thistlethwaite, 2015).

2.3.2.7 Problem-based Curriculum

First introduced by McMaster University in 1969, problem-based learning has influenced health educational curricula positively over the years. Problem-based learning is a curriculum or a teaching method in an outcome-based education (Tsai, 2009; Health Education England, 2012). This system gives the student the freedom to learn within the workplace and school environment, exploring all sources of prescribed knowledge in order to solve problems through critical thinking and group approach. This curriculum places the student at the centre of education and makes the teacher a source of direction for the students along their journey through the programme. The students are confronted with practical scenarios called triggers and given the opportunity to explore all sources available to find a solution to the problems they are confronted in small groups. This approach utilises small group teaching and learning methods (Tsai, 2009; Health Education England, 2012).

2.3.2.8 Content-based, Case-based, Problem-based and concept-based curricula

The content-based curriculum is teacher-centred and does not give students opportunity to explore, interact and learn how to solve problems through critical thinking. The content of the curricula keeps increasing and changing as new diseases are discovered and expectations for quality care of the patient and employers keep changing regularly. Due to the increasing contents of content-based curriculum, it is difficult for students and teachers to cope with the associated demands rarely. Case-based and problem-based curricula are better in building the capability of students to solve problems through critical thinking, exploration and team work, however, the numbers of students in these case-based and problem-based classes are too small making the process very expensive and not feasible in limited resource contexts such as sub-Saharan Africa. Concept-based curriculum is an innovative way of overcoming the weaknesses of the types of curriculum described above.

2.4 CONCEPT-BASED CURRICULUM

2.4.1 Introduction

New diseases and technologies are being discovered, expectations of the nurse employers are constantly changing, there is sustained demand for quality of care, while higher education institutions are under constant pressure to be locally relevant as well as internationally competitive (Joseph, 2015; Higgins & Reid, 2017). These factors lead to a sustained increase in the content of nursing curricula. It has become extremely difficult for nursing institutions and students to cope with the ever-increasing content of the nursing curriculum (Giddens et al., 2008; Caputi, 2014). Two reports (Institute of Medicine, 2011; Benner, 2012) calling for a radical and innovative transformation in nursing curriculum inspired the current trend of nursing curricula (concept-based curriculum) in the western and eastern world (Giddens, Wright & Gray, 2012).

A concept is a way of organizing thought or information. It is the basic unit of theories (Ignatavicius, 2017). It is an abstract idea or thought pattern that has distinct characteristics exhibited in phenomena. Conceptual learning centres on the acquisition of the concepts (big-ideas) and the application those ideas to specific phenomena (Elsevier Evolve, 2017).

A concept-based curriculum, therefore, is a student-centred andragogic curriculum in which concepts form the framework of the learning programme and are learnt through exemplars (Brady et al., 2008; Giddens & Morton, 2008; Giddens, Wright & Gray, 2012; Caputi, 2014; Brooks, 2015; Ignatavicius, 2017). The components of a concept-based curriculum can be organized in a hierarchical manner. That is, the programme is made up of mega-

concepts/units, made up of macro-concepts which are made up of concepts which are taught through exemplars.

Concept mapping is a metacognitive tool which enables the student to make connections between concepts for easy comprehension. Concept mapping allows the students to develop meaningful learning and understanding of concepts. Concept mapping enables the student to bridge the theory practice gap. This enables the students to develop clinical judgement (Higgins & Reid, 2017). Conceptual learning is enhanced by concept mapping (Higgins & Reid, 2017).

Concept-based curriculum existed from the early 1960s where nursing education was built on grounded nursing theories such as Dorothy Orem's "Self-Care theory", Callista Roy's "Adaptation Model of Nursing" and Carl Roger's "Theory of Unitary Human Beings" (Giddens, Wright and Gray 2012). These models used for nursing education were complex and created difficulties for many nursing faculties (Giddens, Wright and Gray 2012). The concept-based curricula as postulated by Giddens and Morton (2008) is rooted in meaningful learning postulated by constructivist educational philosophers (e.g. David Ausubel-1918 to 2008) and andragogy (adult learning theory) developed by Malkom Sherpherd Knowles (1913-1997) which makes it easier for conceptualisation and application (Giddens, Wright & Gray, 2012).

Concept-based curriculum was introduced by Jean Giddens at the University of New Mexico in the year 2004. Giddens et al. (2008) believe that the content of the curriculum could be synthesised into *concepts* (patterns of knowledge) that could be taught. In a concept-based curriculum, the defined concepts form the development framework of the curriculum, whereas concept-based teaching and learning ensures meaningful or experiential learning and application of the concepts within specific and variety of contexts (Giddens & Morton, 2008; Giddens et al., 2008; Giddens, Wright & Gray, 2012; Ignatavicius, 2017).

Knowles (1913-1997) propounded that students understand new knowledge better when it is connected to prior acquired knowledge. Ignatavicius (2017) stated that deep understanding of concepts and the ability to transfer/apply such concepts in practical situations is essential for nursing practice. Concept-based curricula enable the student to move from one learning situation to the other without the new and previous seeming completely different.

Concept learning provides some form of advantages over the traditional form of learning. These include:

- Increased student centeredness of the teaching process,
- Reduction in the content of the curriculum,
- Focus on nursing practice compared to medical diagnosis,
- Increased opportunity for collaborative learning,
- Increasing critical thinking and decision-making skills,
- Process driven and
- Promotes deep learning.

Giddens combined various contents into a specific concept e.g. in sub-Saharan Africa, a major concept will be “communicable diseases” which will probably take away chunk of the content on Malaria, Ebola, cholera, diarrhoea, typhoid fever, whooping cough, tuberculosis, tetanus, pneumonia, HIV/AIDs, gonorrhoea, measles, hepatitis and yellow fever from the nursing curricula. Concept-based curricula reduces the workload on the students and the teachers, given the students the opportunity to apply the concepts mastered to each of the diseases as and when he/she is confronted with it in practice setting (Giddens & Morton, 2008; Giddens et al., 2008; Giddens, Wright & Gray, 2012; Ignatavicius, 2017).

2.4.2 The Development of a Concept-based Curriculum

In a study to develop a concept-based curriculum for sports nutrition, Shock (1992) conducted a literature review to develop a questionnaire for a survey to rank the content of the curriculum and the teaching methods according to their importance. The nationwide survey ranked the topics and teaching methods by the participants according to importance. The researcher then recommended the most important topics to be included as concepts in the curriculum (Shock, 1992).

In Kumm & Fletcher (2012), the nursing faculty went through three complex phases to develop a concept-based Bachelor of Nursing curriculum for the University of Kansas. This phases included:

- Understanding (the phase in which the old curriculum was analysed and the planning for the new curriculum was made including the formation of the curriculum development team, the determination of the number of semesters and development of student learning outcomes);

- Analysis (in which the learning concepts were developed based on the learning outcomes developed in phase I and then categorised into five defined themes); and
- Design (in which the credit hours were assigned to the themes and the curriculum model was selected). The BSN programme of the University of Kansas, USA requires 124 credit hours for graduation. This phase ended with the stakeholder acceptance of the curriculum and the development of the syllabi (Kumm & Fletcher, 2012).

The curriculum was then implemented and evaluated over a five years period using surveys and focus group discussions (Kumm, Laverentz & Laverentz, 2017).

In a New Mexico state-wide project to develop concepts for the Bachelor of Nursing programme, Giddens, Wright and Gray (2012) formed a “concept committee” from nursing educators across various nursing programmes and specialities to proposed concepts for the curricula. They realised that the selection of concepts is very difficult especially if many stakeholders are involved. Decision making on the concepts took a longer period because of the differences in viewpoints of the stakeholders and the overriding of previous decisions due to varying numbers and composition of the concept committee at different times (Giddens, Wright & Gray, 2012). Finally, concepts from other institutions were sourced and used as a guiding framework for the selection of the concepts for the curriculum by the curriculum committee. Leaders from ten educational institutions were recruited to review the concepts for inclusion in the curriculum (Giddens et al., 2012). The concepts provided by the leaders in the ten institutions were further divided into three categories (mega concepts) namely: Attribute Concepts (client’s characteristics), Health and Illness Concepts (disease and illness processes that affect the client), and Professional Nursing Concepts (professionalism). The common concepts listed from the ten institutions were analysed for similarity and differences (Giddens et al., 2012). The most common ones were pulled together and submitted to the concept committee for consideration. Fifty-four concepts were included in the curriculum (Giddens, Wright & Gray, 2012).

In the development of a concept-based curriculum, each programme requires a competency-based graduate learning outcomes covering the core concepts of the programme. Student learning outcomes are to be stated for each course or module within the concept-based curriculum. After the graduate learning outcomes, a course description is formulated. The course description is a brief overview of the course within the curriculum. This is followed by individual course learning outcomes, known as student learning outcomes. The individual course learning outcomes must be consistent with the programme outcomes and be drawn

from the course description (Ignatavicius, 2017). The selection of concepts, outcomes and exemplars are key to the development of a concept-based curriculum (Giddens, Wright & Gray, 2012).

Brady et al. (2008) stated that there were divergent views as to whether to develop the concepts first before the outcomes and competencies of the programme or vice versa. At the end of the argument for and against each view, the team decided to develop the concepts, outcomes and competencies simultaneously by two different groups and then combined the end products later. It is difficult for a group of faculties to reach consensus on concepts to be included in curricula due to varying individual interests during the decision making phase. An initial development of a concept-based curriculum is time consuming. Having standard (benchmark) concepts to guide the curriculum development saves time (Giddens, Wright & Gray, 2012).

2.4.3 Stages of the Concept-Based Curriculum Development Process

In a multi-method exploratory study involving two separate surveys and a focus group discussion exploring the experiences of those who have developed and implemented a concept-based curriculum in nursing, Sportsman and Pleasant (2017) outlined the curriculum development process to include four main stages and others:

2.4.3.1 Making the decision

This phase involves the conceptualisation of the curriculum change. It includes sampling faculty opinion and seeking the support from the institutional administration on the curriculum change, explaining the expected benefits and challenges through the curriculum change process.

2.4.3.2 Developing the curriculum

At this stage, the curriculum committee is formed from faculty with some reward for volunteering faculty in terms of reducing their workload and other benefits. The selection of the chairman of the committee is very important at this stage. After formation of the team, either literature review is conducted, or an expert is recruited to develop the concepts, exemplars and themes. The stakeholders of the nursing curriculum being developed or reformed are then educated on the concept-based curriculum development process and their roles in the implementation and review of the curriculum. The curriculum is then evaluated for conformity to the national licensing or evaluation systems such as National Council Licensure Examination (NCLEX).

2.4.3.3 Implementing the curriculum

In this phase, the faculty is retrained on concept-based teaching and learning. The teaching and learning process is reviewed regularly to ensure that the strategies remained concept-based. The clinical education staffs are also re-oriented to the new process.

2.4.3.4 Evaluating the curriculum

The curriculum evaluation process is planned. Outcomes of the training such as licensure results, the rate of student attrition and graduation are used to evaluate the programme.

Other things to consider are the orientation of any new staffs that join the faculty on concept-based education.

2.4.4 12-steps Approach to Concept-Based Curriculum Development

Ignatavicius (2017) developed a twelve steps approach to concept-based curriculum development. These include:

2.4.4.1 Review and revise the nursing institutional mission and philosophy

Ignatavicius (2017) stated that the philosophy of the programme should flow from the vision and mission of the university implementing the programme and should be in concordance with national nursing standards, outcomes and regulations. For example, the programme may aim at providing quality and safe care to the patients or developing conceptual and critical thinking nurses for the National Health Service and beyond.

2.4.4.2 Develop the organizing curriculum framework

The curriculum framework could be built on the concepts included in the curriculum or a selection of some major concepts that lay emphasis on the philosophy of the programme. Some institutions may choose between six and ten concepts which are to be emphasized in the curriculum as organizing frameworks, for example: inter-professional education, evidence-based nursing, quality practice, patient-centred care, professionalism and scholarship. The use of organizing framework for a curriculum depends on the state or country within which the programme is implemented. Some programmes do not include such frameworks because it is not demanded by the state or country's accreditation or regulatory bodies.

2.4.4.3 Establish Programme Outcomes/ End-of-Programme Learning Outcomes

Competencies and outcomes are alloyed with concepts in concept-based curricula. These competencies specify what knowledge, skills and attitudes are recommended by the nursing regulatory bodies and employers. The competencies must be context-specific. Each course or module within the programme also has its own student learning objectives. The curriculum

has end-of-programme or Student Learning Objectives (SLO) which are broader. Each unit of the course also comes with its specific learning objectives. The programme outcomes are the end-of-programme learning objectives.

2.4.4.4 Determine the plan of study or degree plan

This defines the courses or modules and their sequence from entry to completion. This plan specifies the number of credits to be taken by the students and at what stage is a specific course or module within the academic programme implemented. The amount of time to be spent on clinical simulation and clinical placement for learning and role taking must all be specified accordingly. Generally, in a concept-based curriculum, health systems and leadership courses or modules are the last ones to be taught. There is a course that is specifically reserved for a theoretical ‘concept synthesis’ and a ‘clinical capstone’ course for the students to apply the concepts they studied.

2.4.4.5 Select and Define Nursing Curriculum Concepts

It is difficult to select concepts for a typical curriculum as many authors indicated. Ignatavicius (2017) stated that, in undergraduate programmes, curriculum development teams are mostly divided between using all the concepts developed by Giddens (2008) or some of it or add some more. There is no hard and fast rule about the number of concepts to include. The 54 concepts developed by Giddens (2008) were divided into three mega concepts namely: ‘the healthcare recipient concepts; professional nursing and healthcare concepts; and health and illness concepts’ as in Table 2.1 below. The mega concepts provide the breadth of the nursing profession whereas the macro concepts provided the depth of the profession and created the opportunity for deep learning. Johnston (2017) also provided four (4) mega concepts namely: “health; client attributes; healthcare setting; and professional nursing”.

Table 2.1: Concepts for Nursing Practice developed by Giddens (2008)

No.	MEGACONCEPTS /UNITS	MACRO-CONCEPTS/ THEMES	CONCEPTS
1.	PATIENT PROFILE CONCEPTS	Personal preferences	Culture
			motivation
			Adherence
		Attributes and Resources	Development
			Functional Ability
			Family dynamics
2.	HEALTH AND ILLNESS CONCEPTS	Homeostasis and regulation	Fluid and electrolyte balance
			Acid-base balance
			Thermoregulation
			Cellular regulation
			Intracranial regulation
			Glucose regulation
			Nutrition
			Elimination
		Protection and movement	Immunity
			Inflammation
			Infection
			Mobility
			Tissue Integrity
			Sensory perception
			Pain
		Oxygenation and haemostasis	clotting
			Gas exchange
			perfusion
		Coping and stress tolerance	Stress
			Coping
		Emotions	Mood and affect
			anxiety
		Sexuality and reproduction	sexuality
			reproduction
		Cognitive function	cognition
			psychosis
		Maladaptive behaviour	Addiction
			Interpersonal violence
3.	PROFESSIONAL NURSING AND HEALTH CARE CONCEPTS	Attributes and roles of nurses	Professionalism
			Clinical judgment
			Leadership
			Ethics
			Patient education
			Health promotion
			Care coordination
		Healthcare delivery	Caregiving
			Palliation
			Healthcare quality
		Care Competencies	Evidence
			Technology and informatics
			Safety
			Collaboration
			Communication
			Healthcare organizations
		Healthcare infrastructures	Healthcare economics
			Health policy
			Healthcare law

In the New Mexico Nursing Education Consortium's work to develop a concept-based curriculum for the wider state, they used a survey of all programmes implementing concept-based curriculum to select the most common and important concepts. Concept-based curriculum leans towards Primary Health Care, for example, only nine out of the 31 concepts included in the health and illness mega concept/unit of Giddens (2008) were health problem related. The concepts can be re-labelled to promote the understanding of the students and the teachers. Concepts are easily understandable if they are linked with a mega concepts (Brady et al., 2008; Giddens & Morton, 2008; Giddens, Wright & Gray, 2012; Giddens, 2013; Ignatavicius, 2017).

The concepts that are included in the concept-based curriculum should be defined. Ignatavicius (2017) advocates for the use of the conceptual definitions of Giddens if they are well understood. If not understood, the faculty should redefine the concepts included in their curriculum. Definitions are to be simple and short to enable understanding and prevention of ambiguity (Brady et al., 2008; Giddens & Morton, 2008; Giddens, Wright & Gray, 2012; Giddens, 2013; Ignatavicius, 2017).

2.4.4.6 Select exemplars for each concept

Exemplars are the specific aspects of the content of the curricular that defines a specific concept. Selecting these exemplars could create conflict among faculty due to their inability to reach consensus (Brady et al., 2008; Giddens & Morton, 2008; Giddens, Wright & Gray, 2012; Giddens, 2013; Ignatavicius, 2017).

Survey of national, state and local common health problems and public health issues is essential for selecting exemplars. For example, the concept of mobility could be taught using exemplars such as fractures, Parkinson's disease, spinal cords injury and scoliosis (Giddens, Wright & Gray, 2012). Exemplars for the professional nursing and healthcare concepts could come from the scope of practice and practice standards developed by the regulatory body. Even if the curriculum is developed by the state, the selection of the exemplars must be the sole responsibility of the faculty (Ignatavicius, 2017).

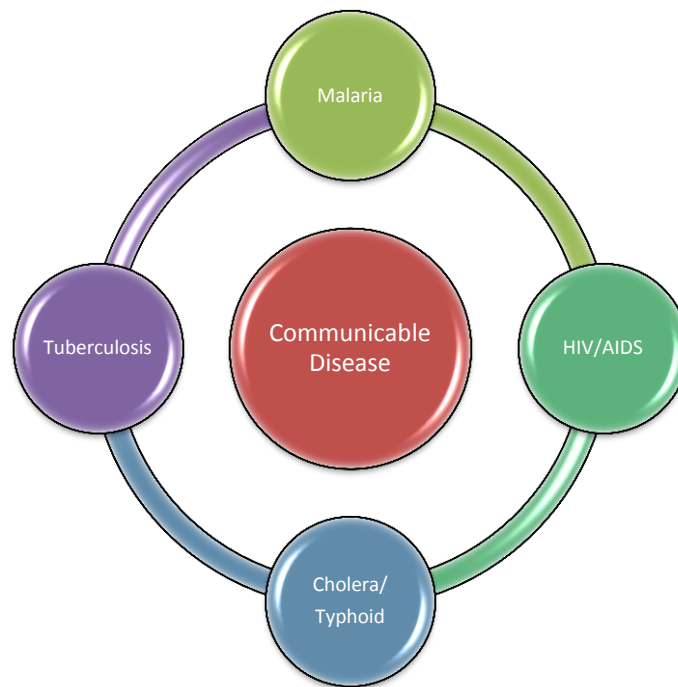


Figure 2.1: An example of a graphical representation of a concept and exemplars

In Figure 2.1 above, the concept communicable disease can be learnt through such exemplars as Malaria (insect borne and most common disease in West Africa and other parts of Africa), HIV/AIDS (a major disease of public health importance in Africa, mainly Southern Africa and sexually transmitted), Tuberculosis (an airborne communicable disease and Cholera/Typhoid fever (major food borne diarrhoeal disease across Africa).

2.4.4.7 Write a course description and student learning outcomes

Course learning outcomes specify the knowledge, skills and attitudes the student should gain on completing a specific course. These need to be written explicitly to guide assessment and teaching.

2.4.4.8 Determine where (in the programme) each concept will be introduced

The concepts need to be introduced in such a way that students and lecturers find it easy to integrate with previous concepts or previous knowledge.

2.4.4.9 Develop a concept presentation for each curricula concept

A concept is organized in a presentation format to enable its analysis (Johnston, 2017). The common elements of a concept presentation document are:

- Definition,
- Scope of the concept, especially continuum if there is one,
- Common risk factors of a concept if the individual suffers the dysfunction of such concept,

- Any physiological or psychological outcomes as a result of dysfunctional concept,
- Determination of how the concept is assessed, and
- Multidisciplinary interventions to promote the concept or manage its dysfunction (Ignatavicius, 2017; Johnston, 2017).

2.4.4.10 Determine where each exemplar will be placed in the curriculum

There are no hard and fast rules but the exemplars must be placed in a way to allow for smooth learning of the students. It will be easier to arrange the concepts from simple-to-complex for easy association with previous concepts and newer ones. After selecting the exemplars, it is important to check if the course load and credits are appropriate for each level and the programme. The concepts could be moved forth and back during programme review to achieve a perfect programme organisation.

2.4.4.11 Develop each course syllabus and lesson plan/study guide

Lessons plans help lecturers to organize their teaching. This serves as a study guide for students, indicating the depth of knowledge required and the modes of assessment.

2.4.4.12 Select appropriate clinical experiences and activities that are conceptually focused

The student clinical experience is very important in the application of concepts studied. Because CBC provides a different approach of teaching, the faculty must arrange for special clinical learning opportunities for students to develop deep learning and critical thinking skills.

2.5 CURRICULUM FRAMEWORK

A formal curricula consist of three components: the curriculum framework, the syllabus, and textbook and other teaching and learning resources (Stabback 2007). The curriculum framework is a document that contains standards for a specific curriculum and indicates the context (natural, human and capital resources available) in which the curriculum developers develop curricula (Stabback 2007) whereas the syllabus comprises the aim, content, outcomes and other information related to specific courses as prescribed in the curriculum framework. The curriculum as a framework states the purpose of education and broad learning objectives of the educational programme. The formulation of the syllabi is left for the respective countries if the curriculum framework is an international framework or for local authorities if it is a national framework. This allows for flexibility and innovation at the lower level of the curriculum implementation (Parsons & Beauchamp, 2012).

The Pennsylvania Department of Education (2017) defined curriculum framework to include “big ideas, concepts, competencies, and essential questions aligned to standards and assessment anchors and, where appropriate, eligible content”. The Ontario Ministry of Training (2011) stated that a curriculum framework “sets out the content of learning within a system, using an established set of organizing principles”. Kenya Institute of Curriculum Development (2017) also stated that the curriculum framework outlines the purpose of the curriculum, the mission statement, the pillars of the curriculum, the major competencies, learning outcomes, subjects (content) policies, the curriculum type, the subjects, teaching and assessment methods, the resources needed and others issues necessary for the implementation of the curriculum (KICD, 2017). Bruce, Klopper and Mellish (2011;p166) defined it as comprehensive synopsis of a programme developed by an institution, stipulating specific principles. Phaladi-digamela (2015) believes the curriculum framework is an outline curriculum.

A standard curriculum framework addresses eight important areas of a curriculum:

- the context, the educational policy,
- the structure of the educational system,
- the structure of the curriculum content,
- learning areas and courses,
- standards of resources required for curriculum implementation,
- teaching methodologies, and
- assessment and evaluation of students (Stabback 2007).

Additional areas of importance to specific programmes could be added as deemed important by the curriculum committee (Stabback 2007).

In this study, a curriculum framework is defined as the document that describes the sub-Saharan African context regarding Advanced Practice Nursing, states the programme learning outcomes, developed concepts, exemplars, interrelated concepts, and stipulates the resources needed to implement the Advanced Practice Nursing programme in sub-Saharan Africa.

2.6 CONCLUSION

This chapter presents the literature on the APN Curriculum and curriculum development and concept-based curriculum development. Chapter three presents the research methodology below.

CHAPTER 3 : RESEARCH METHODOLOGY

3.1 INTRODUCTION

There is no unique way of developing a concept-based curriculum. Innovative ways have been used by different institutions to develop such curricula, paying attention to rigour. This study inculcated such innovations to develop and evaluate the Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework for sub-Saharan Africa.

This chapter describes the conceptual framework, research design and methods, and links the research process, conceptual framework and the common elements of curriculum development models.

3.2 STUDY DESIGN: MULTI-METHOD DESIGN

This study applied a multi-method design (Hunter & Brewer, 2015). Various methods were used to collect, analyse and interpret data. The study started with a scoping review on child health and APN curriculum development in SSA followed by a Delphi then the development of concepts for the concepts-based curriculum framework, the confirmation of the curriculum and an evaluation of the curriculum framework through a survey.

Multi-method research design differs from but shares some commonalities with mixed-method research (Hunter & Brewer, 2015). The two approaches (multi-method and mixed-method design) sound similar and create some form of debate among academics in terms of definition and characteristics within the mixed research paradigm (Esteves & Pastor, 2003; Byrne & Humble, 2007; Dixon-Woods et al., 2014; Hunter & Brewer, 2015; Power et al., 2016).

Mixed-method design is divided into two approaches namely mixed-method research and mixed-model research. A mixed-method study involves the collection and analysis of both qualitative and quantitative data in a single study (Byrne & Humble, 2007; Cameron, 2010; Dixon-Woods et al., 2014). The data could be collected simultaneously or sequentially, the defining characteristic is that the data should be combined at one stage or the other in the study (Esteves & Pastor, 2003; Byrne & Humble, 2007; Cameron, 2009, 2010). For example, combining open-ended comments with Likert scale questionnaire in a single study (Cameron, 2010).

Mixed-model research, on the other hand, involves much interaction and inclusiveness of quantitative and qualitative paradigms. The principle is that in mixed-model research, the quantitative and qualitative paradigms should interact at more than one stage-either at the stage of formulating research question, or the development of research methods, or at data collection stage, or at the data analysis stage or at the stage of interpreting results (Esteves & Pastor, 2003; Byrne & Humble, 2007; Cameron, 2009, 2010). For example, a researcher may conduct a descriptive quantitative study in a population and also decide to verify the information through a qualitative descriptive study, interviewing a few people in the population (Cameron, 2010). Mixed-method designs are used when none of quantitative and quality paradigms are capable of answering a research question in themselves (Small, 2011; Gunasekare, 2013). Mixed-method designs are either driven by a quantitative paradigm or a qualitative paradigm, importing the other paradigm to supplement the major paradigm (Esteves & Pastor, 2003; Byrne & Humble, 2007). QUAL-quan indicates a qualitatively driven research programme supported by quantitative methods. QUAN-qual indicates the vice versa. Many studies also apply QUAL-qual or QUAN-quan which indicate a qualitatively driven study supported by other research approaches from the same paradigm (Byrne & Humble, 2007; Dixon-Woods et al., 2014).

Multi-method studies are different from mixed-method and mixed model studies in various ways. A multi-method study is a research design in which two or more research methods are used in different projects within the same study. A multi-methods study may use qualitative or quantitative methods or both paradigms in a single research programme. The defining characteristics are that each method in the multi-method study is complete in itself and is used for a specific objective within the multi-method study (Esteves & Pastor, 2003; Byrne & Humble, 2007). Multimethod studies are used because they allow for both in-depth and positivist inquiries into a single research topic (Esteves & Pastor, 2003; Byrne & Humble, 2007; Power et al., 2016).

Hunter and Brewer (2015) in the “*The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry*”, noted that mixed method studies are reported in literature more than multimethod studies. They also noted that mixed method studies are generally reported as mixing of qualitative and quantitative methods whereas multimethod designs refer to mixing of two or more methods whether qualitative or quantitative. In conclusion, Hunter and Brewer (2015) ruled that mixed-method design is a subset of multimethod design.

In this study, the various phases of the research stood alone with one phase providing the background, tool or data for the next phase, therefore, this study employed a sequential multi-method design. This study was conducted in seven phases as outlined in Table 3.1 below.

Table 3.1: The Research Process

Phase	Research activity	Population and sample	Data Collection	Data Analysis
1.	Scoping review: A scoping review was conducted on Advanced Practice Nursing and child health in sub-Saharan Africa using the five stages of scoping research developed by Arksey and O'Malley (2005).	Peer-reviewed and grey literature on Advanced Practice Nursing and child health in sub-Saharan Africa.	Author, and date, setting, aim of study, study design and important findings or recommendations were extracted/charted from the studies onto a data matrix as outlined by Arksey and O'Malley (2005)	Data from the search were thematically analysed.
2.	Delphi: An online Delphi was conducted for a multidisciplinary group of experts to review and reach consensus on the results from phase one (Current context; educational policy statement; and broad learning objectives) of Child Health Nurse Practitioner in sub-Saharan African. After the consensus on the description of the context, educational policy statement and broad learning objectives, the experts were asked to provide topics to be taught under each domain; the modes of teaching and assessment; the structure of the educational system; the curricula structure; and resources needed for the programme.	A total of 49 experts viz 36 nurses, 7 public health practitioners and 6 medical practitioners from SSA	An online (Redcap) 80 Likert Scale Delphi Questionnaire/ statements with 3 comment boxes was developed by the researcher from the results of the scoping review in phase 1. Two follow-up questionnaires were developed to source expert information on the topics to be taught under each domain; the modes of teaching and assessment; the structure of the educational system; the curricula structure; and resources needed for the programme	Descriptive statistics (percentages) were used to calculate the extent of agreement or disagreement on an issue by the expert group. Thematic content analysis and conventional content analysis (Hsieh & Shannon, 2005) was employed in analysing the data collected in the follow-up questions.
4.	Development of the concepts for the curriculum framework: The curriculum committee developed concepts using <i>Guidelines for Selecting Concepts for A Concept-Based Advanced Practice Nursing Curriculum by an Expert Group</i> developed by the researcher.	The concept-based curriculum committee was made up of 7 curriculum development experts including the principal researcher. The researcher and 2 team members developed the initial concepts for the other 4 members to review.	Results from the conventional content analysis of the surveys.	

5.	Developing the Curriculum Framework: Results from the first three phases were synthesized into a concept-based Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework for SSA.	Samples from phase 1, 2 and 3	As in Phase 1,2 and 3	Stabback's (2007) eight (8) common elements of a curriculum framework and the 12 steps of concept-based curriculum development by Ignatavicius (2017) guided the development of the draft concept-based Advanced Practice Nursing (Child Health) Curriculum framework for sub-Saharan Africa.
6.	Confirmation of the curriculum framework: The draft concept-based Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa was given to all Delphi expert group to validate or confirm.	Experts from the Delphi expert team were randomly selected	Review report from experts	The reports from the experts were considered in the review of the draft concept-based Child Health Nurse Practitioner curriculum Framework.
7.	Evaluation for applicability (Probability Survey): Revised framework was then distributed to 15 educators from different Nursing Education Institutions in SSA for evaluation.	Lecturers from fifteen university departments of nursing were selected from the East and Central, West and Southern Africa.	The survey tool is attached as Annexure I).	The evaluation report was analysed to finalize the curriculum framework for sub-Saharan Africa.
8.	Dissemination: The concept-based Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework was included in the thesis submitted to the University of Witwatersrand in fulfilment for the degree of Doctor of Philosophy in Nursing. Research papers will be published in a peer review journal and distributed in soft and hard copies to NEI's and nursing organizations across sub-Saharan Africa for utilization			

3.3 THE CONCEPTUAL FRAMEWORK AND CURRICULUM

The study applied the government of Alberta curriculum development framework as a conceptual framework (Parsons & Beauchamp, 2012). The framework consists of five phases (Review, Initiate, Plan, Develop and Implement) as seen in Figure 3.1. The framework requires the curriculum development team to consult, collaborate and communicate with stakeholders and experts throughout the phases of the curriculum development process. (Parsons & Beauchamp, 2012). Though this framework is adopted from a western country, it only guided the process of the curriculum development and not the content of the curriculum framework. The researcher believes that sub-Sahara African curriculum must liberate students, make a difference in the world, respect the student and value their experiences to inform their learning, involve deeper community dialogue and centre on praxis-action (Freire & Ramos, 2009). This was ensured through a sustained dialogue with stakeholders from phase two through to seven of the study.

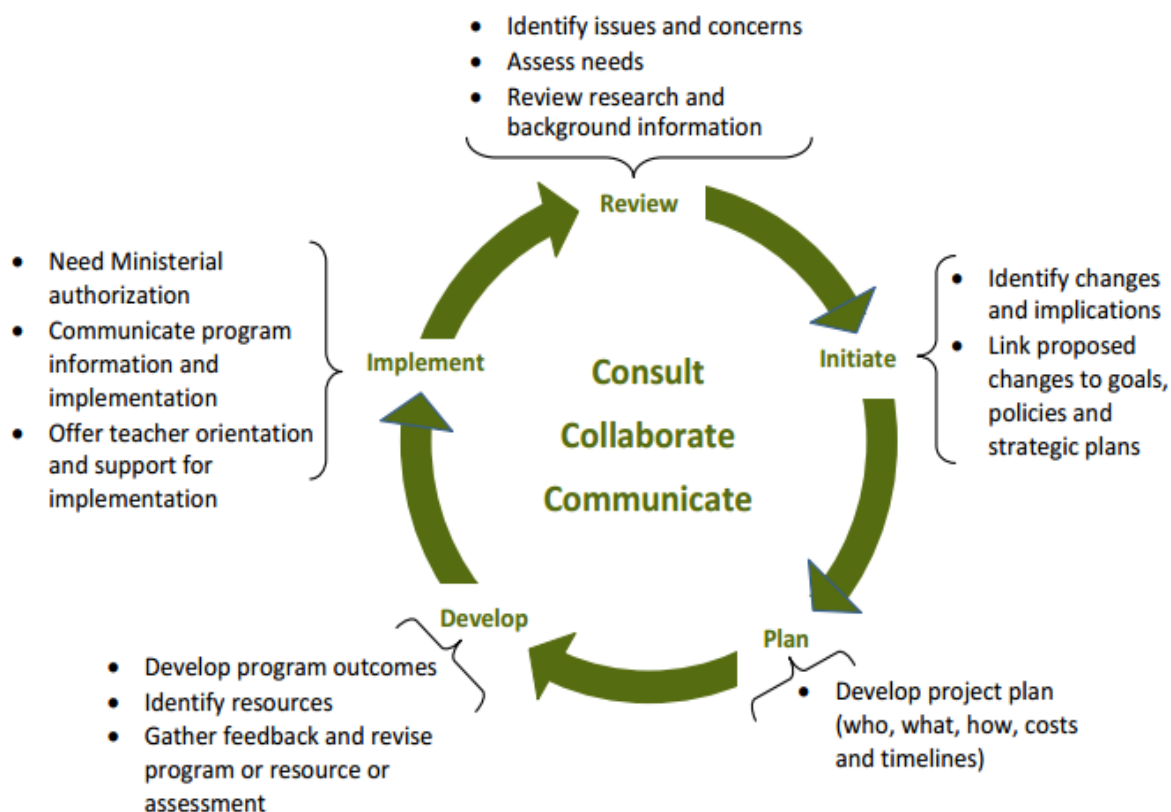


Figure 3.1: Government of Alberta Curriculum Development Framework 2006 (Parsons & Beauchamp, 2012).

3.3.1 Review

During the review phase, the curriculum development team considers stakeholders' views about the need for the programme, assess the needs of the community that the programme is expected to address and the needs of the educational institution and staff that will be implementing the programme. A research review is conducted at this stage to explore the needs and find the best way(s) of meeting the specific needs of the community and the educational institutions. The background information on the programme to be developed needs is also gathered (Parsons & Beauchamp, 2012; Kotze, 2015).

In this study, a scoping review was conducted on Advanced Practice Nursing and child health within the sub-Saharan African context. Major institutional sites and databases were searched for relevant and context-specific literature on the topic. Nurses (administrators, educators and practitioners), public health practitioners and medical practitioners were consulted to review the results of the scoping review for its true representation of the sub-Saharan African context.

3.3.2 Initiate

This phase involved the identification of changes (for programmes that are already implemented), linking changes (outcomes of the review phase) with the goals, policies and strategic plan of the institution and other stakeholders (especially government, healthcare institutions and the community) (Freire & Ramos, 2009; Parsons & Beauchamp, 2012; Kotze, 2015). This curriculum framework is new and does not involve review of curricula to determine changes but considered government and international policies (such as the Sustainable Development Goal 3).

3.3.3 Plan

In this phase, the project team develops the project plan taking into consideration 'who' (external and internal clients of the education institution), 'what' (the issues, concerns and needs that the programme must address), 'how' (the inputs and processes that will facilitate the meeting of those issues, concerns and needs), 'costs' (cost effectiveness of the programme) and timelines (how long will it take develop the curriculum and train the students to respond to the needs) (Freire & Ramos, 2009; Pree, 2012; Kotze, 2015).

In this study, there were two expert teams. The multidisciplinary team made up of nurses, public health practitioners and medical practitioners were involved in contextualizing the needs assessment, defining the knowledge domains of the Child Health Nurse Practitioner programme and proposing the topics that need to be learnt, teaching and assessment methods

to adopt and resources needed to successfully implement the programme. The second expert group (curriculum committee) who developed the concepts and exemplars for the curriculum framework was made up of nursing curriculum development experts, a paediatrician and a paediatric nurse. The curriculum framework was also evaluated by seventeen nursing faculty from fifteen Universities in ten sub-Saharan African countries.

3.3.4 Develop

At this stage, the programme outcomes are developed. The human, material, and physical resource are identified. The curriculum is evaluated and adapted for its effectiveness and efficiency. The resources identified are assessed for their effectiveness in meeting the needs of the programme (Parsons & Beauchamp, 2012; Kotze, 2015).

In this study, the concept-based Child Health Nurse Practitioner curriculum framework for SSA was developed by the researcher and an expert curriculum committee and evaluated by 17 faculty from 15 universities in 10 sub-Saharan African countries. The resources needed for the successful implementation of the programme was reviewed by the multinational multidisciplinary experts. Seventeen nursing faculty from fifteen nursing education institutions in SSA evaluated the curriculum framework for applicability within the sub-Saharan context.

3.3.5 Implementation

At the implementation stage, the programme is communicated to all statutory regulatory bodies such as Accreditation Boards, Nursing Council and Departments of Higher Education for accreditation, qualification registration, and approval (Parsons & Beauchamp, 2012; Kotze, 2015). The curriculum development process is a continuous process, allowing for curricula review at any point of the development (Parsons & Beauchamp, 2012).

The curriculum implementation stage is beyond the scope of this study but the curriculum framework will be communicated to the stakeholders of nursing education in SSA. The curriculum framework will be communicated in journal papers and conference presentations and distributed for use by institutions in SSA.

3.4 THE CONCEPTUAL FRAMEWORK AND THE RESEARCH PROCESS

The conceptual framework consists of five phases: review, initiate, plan, develop and implement (Figure 3.1). Not all models work exactly the way they predict a process (Rani & Hemavathy, 2015). There are various nursing curriculum development models (Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources

Management and Environment Department, 2017) that could be used to guide curriculum development. De Villiers (2001) stated that curriculum development process is smooth and systematic when the curriculum development authority applies a curriculum development model.

Common to these models the models (Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources Management and Environment Department, 2017) is situational analysis, formulation of the curriculum development team, development of the curriculum, evaluation and or pilot testing of the curriculum, and implementation of the curriculum.

3.4.1.1 Situational/needs assessment

Needs assessment involves the determination of the needs of the society, students, lecturers, educational institution and the country or state in which the curriculum is to be implemented (Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources Management and Environment Department, 2017).

Needs assessment is indicated in the phases 1 (review) and 2 (initiate) of the conceptual model (Figure 3.1) applied in this study and in phases 1(scoping review) and 2 (Delphi) of the research process (Table 2.1).

3.4.1.2 Formation of the curriculum committee

A curriculum development team or curriculum committee is formed to develop the curriculum after the needs assessment. This element could also be the first i.e. the team is formed to do the situational analysis (Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources Management and Environment Department, 2017). In all cases, it could be said that the curriculum development process is continuous and has no specific point of initiation (De Villiers, 2001).

Formation of the curriculum committee is represented by phase 3 (plan) in the conceptual model applied in this study and in phase 3 (development and analysis of the concepts for the curriculum framework) and partly in phase 4(development of the curriculum framework) of this study.

3.4.1.3 Development of the curriculum

Development of the curriculum is the third common element of curriculum development models and involves the phase where the objectives of the programme and the philosophy of the institution guides the articulation of the programme content, teaching/learning methods, assessment/evaluation methods and prescription of resources needed for the programme

(Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources Management and Environment Department, 2017). This was reflected in phase 4 (develop) of the conceptual framework and in phases 3 (development of the Concepts for the curriculum framework) and 4 (Developing the Curriculum Development Framework) of this study.

3.4.1.4 Evaluation and revision of the draft curriculum

The fourth common element from the curriculum development models was the evaluation of the curriculum developed by the expert team. Evaluation and revision of the draft curriculum is to determine the appropriateness of the curriculum for the purpose for which it is developed. It could also be done through pilot testing (Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources Management and Environment Department, 2017). This element was embodied in the phase 4 (develop) of the conceptual framework and covered by phases 5 (confirmation of the curriculum framework) and 6 (evaluation of the curriculum framework) of this study.

3.4.1.5 Implementation

Lastly, implementation is one of the common elements of curriculum development models. Implementation phase involves implementing the developed curriculum. The process may involve reorientation of the faculty on the new methods included in the curriculum for effective implementation. Implementation phase is covered by phase 5 (implementation) of the conceptual framework (Smith, 1982; De Villiers, 2001; Parsons & Beauchamp, 2012; NCCE & TDP, 2015; Natural Resources Management and Environment Department, 2017). This study does not include the implementation of the curriculum as it seeks to develop the curriculum framework to guide the development of curricula in SSA. Phase 7 (dissemination of the curriculum framework) of this study is captured in the phase 5 (implement) of the conceptual framework. The curriculum development framework that guided this study is a continuous process that involves regular curriculum reviews as indicated (Parsons & Beauchamp, 2012).

3.5 SCOPING REVIEW METHOD

Scoping reviews are conducted to quickly map the concepts defining a research area and to determine how much evidence is available in such a research area (Arksky & O'Malley, 2005). It is a the process in which a research area is contextualized for understanding, finding out what is known about the research area and what is not known so as to develop research

policy in the area (Anderson et al., 2008). Scoping reviews are either stand alone or pre-systematic reviews that aim in exploring the breadth and depth (in-part) of a research area using both grey and peer reviewed literature (Arksky & O'Malley, 2005; Grant & Booth, 2009; Armstrong et al., 2011; Wach, Ward & Jacimovic, 2013). Davis, Drey and Gould (2009) stated that it is a way of synthesizing a broad range of peer reviewed and grey literature to clearly define a research area.

The review method focuses on complex and broad topic areas that lack comprehensive reviews. The concept of Advanced Practice Nursing is an emerging area in sub-Saharan Africa, hence, the choice of scoping review rather than other methods such as integrative literature review and systematic review (Arksky & O'Malley, 2005; Armstrong et al., 2011; Sun & Larson, 2015).

Scoping reviews use explicit systematic processes in defining the area under study, searching for the studies within the area and analysing the findings thematically (Levac, Colquhoun & O'Brien, 2010; Armstrong et al., 2011; Colquhoun et al., 2014). To a greater extent, scoping reviews focus less on specific clinical problems. Rather the review method looks at the general concept or area under study. Scoping reviews also do not necessarily conduct critical appraisal of research papers retrieved (Arksky & O'Malley, 2005). The level of synthesis and interpretation also varies with respect to the purpose of the scoping review. The scoping review searches for all research conducted within the specific field, not considering their research design (Arksky & O'Malley, 2005).

All scoping reviews examine the breadth of literature in an area but the depth of the scoping review depends on the purpose for which it is conducted. Scoping reviews are conducted for four major reasons (Arksky & O'Malley, 2005; Levac, Colquhoun & O'Brien, 2010). These include:

- Determining the range of publication or available literature within a broader field of study.
- Ascertaining the importance and feasibility of conducting a more focused systematic review.
- Collating and distributing research findings in an area of study to various groups and institutions that do not have access to these research papers by virtue of time, money or other resource limitations.
- Lastly, identifying a niche in an area for study.

In this study, the scoping review was conducted to establish the current state of Advanced Practice Nursing and child health in sub-Saharan Africa.

3.5.1 The Scoping Review Process

The scoping review, like other forms of systematically structured literature review methods, defines a research problem and develops a research questions, searches for literature to answer the research/review question, analyses the data and reports the findings (Arksey & O'Malley, 2005; Levac, Colquhoun & O'Brien, 2010; Armstrong et al., 2011; Wach, Ward & Jacimovic, 2013). This study will apply the scoping review framework developed by Arksey & O'Malley (2005). The framework comprises six stages: identifying the research question; identifying the relevant studies; study selection, charting data, collating, summarizing, and reporting results; and consultation (optional).

3.5.1.1 Phase 1: Identifying the research question

Arksey and O'Malley (2005) stated that the research question must be as broad as possible to enable the scoping review to summarise the breadth of literature in the area being studied. Broader research questions may, however, make it difficult for the selection and inclusion of studies into the scoping review. Levac et al. (2010) suggested that the research questions should be made broad but clarifying concepts and variables (such as population) that the research question embodied. Considering the purpose of the review while defining the research question guides the scope of the review and clarifies the focus of the scoping review. The rationale for conducting this scoping review was to explore the state of Advance Practice Nursing and child health in SSA in order to describe the context, educational policy statement and broad learning objectives of the proposed Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa from peer reviewed and grey literature.

3.5.1.2 Phase 2: Identifying relevant studies

The breadth of scoping review made it unique among other review methods. The vast sources of literature that can be included in scoping reviews gives the methodology its strength over systematic and integrative literature review methods (Arksey & O'Malley, 2005; Armstrong et al., 2011; Colquhoun et al., 2014). Search can be conducted from various sources using different methods e.g. computerised database search, hand search of important institutional sites and documents, ancestry search, library citation index search, search of conference publications, government archives search and networking with authors in the field (Christmals & Gross, 2017). The search process used in this study is described in Chapter 4.

3.5.1.3 Phase 3: Study selection

This stage deals with the articles to be included in the review and which ones to be excluded. For scoping reviews, inclusion criteria are developed post-hoc as the researcher gets increasingly familiar with the studies identified in the search process so as to develop a relevant criterion to avoid rejecting many articles (Arksky & O'Malley, 2005). The inclusion and exclusion criteria in this study were described in Chapter 4.

3.5.1.4 Phase 4: Charting data

Charting of data makes data analysis easy. Data could be charted on data matrix or Microsoft excel spreadsheets for easy visualization and comparison.

Data from the studies included in this review were charted on a data matrix comprising a section on Advanced Practice Nursing and another on child health in SSA (Arksky & O'Malley, 2005). Information charted were: the author, year of publication, study location, purpose of study, research design, and major findings/recommendation regarding Advanced Practice Nursing and child health in SSA.

3.5.1.5 Phase 5: Collating, summarizing and reporting results

Arksey and O'Malley (2005) stated that collating, summarizing and reporting results involved synthesizing the information charted from the articles included in the review into a meaningful outcome, making sure that the results are representative of the studies included in the study (Arksky & O'Malley, 2005; Levac, Colquhoun & O'Brien, 2010; Armstrong et al., 2011; Colquhoun et al., 2014; O'Brien et al., 2016). The purpose of data analysis is to have an exhaustive and an unbiased interpretation of included articles and synthesizing the findings. This involved ordering, coding, categorizing and summarizing of information gathered from primary research articles into an amalgamated conclusion about the research topic (Whittemore & Knafl, 2005).

In this study, thematic content analysis process developed by Miles, Huberman and Saldaña (1994) as described by Whittemore and Knafl (2005) was used to analyse the data. The thematic data analysis employed in this study consists of five stages namely data reduction, data display, data comparison, drawing conclusions and verification (Miles, Huberman & Saldaña, 1994; Whittemore & Knafl, 2005). These stages are described below.

3.5.1.5.1 Data reduction

Whittemore and Knafl (2005) stated that data can be reduced into various subgroups in a logical manner, based on identified characteristics such as: type of design (descriptive, correlational, experimental), chronology, setting (rural, urban, developed, developing, underdeveloped or third world countries), sample characteristics (gender, sex, age, race), or on predetermined conceptual classification of participants (experience, attitude, and behaviour).

This review separated the studies into the two sections, that is, Advanced Practice Nursing and child health. The classified data were extracted and coded into a manageable framework – a data matrix. This made it easy for comparing articles with each other based on the giving characteristics- contribution to context, educational policy statement and broad learning objectives.

3.5.1.5.2 Data display

Data in this review were displayed on a matrix for easy visualization of patterns, similarities, and themes. The matrix was divided into two sections- Advanced Practice Nursing in sub-Saharan Africa and child health issues in sub-Saharan Africa (Annexure A).

3.5.1.5.3 Data comparison

This involved examining the displayed data in order to determine themes, patterns, and relationships. Concept mapping was used to include identified codes, patterns or themes in data comparison stage. Essential to data comparison and determination of patterns and themes is data display, creativity and critical analysis of data (Whittemore & Knafl, 2005).

Concept mapping was used in this study. The major findings/recommendations from the studies regarding Advanced Practice Nursing and child health were colour coded. The coding process is explained in Chapter 4. The codes were categorised into sub-themes and then themes.

3.5.1.5.4 Drawing conclusions and verification

Data analysis was completed by drawing conclusions and verification of findings. This involved drawing of abstract grouping of small sets of information that encompassed subgroups or categories (Whittemore & Knafl, 2005). It was a critical stage of the review process because it enabled the reviewer to answer the research question and fulfil the purpose for the review (Miles, Huberman & Saldaña, 1994; Whittemore & Knafl, 2005). Conclusions drawn from the data set were continuously compared with the primary source of information to ensure inclusiveness and accuracy of interpretations (Miles, Huberman & Saldaña, 1994;

Whittemore & Knafl, 2005). In cases where evidence contradicted and the reviewers were not certain on which direction to take, a vote was cast, considering the frequency of the conflicting findings (Cooper 1988 cited in Whittemore & Knafl 2005). Possible recommendations were made for further research to clarify conclusions when evidence conflicted. All conclusions from subthemes were then synthesized into an integrated summation to meet the objectives of the study (Whittemore & Knafl, 2005). In this study, sub-themes derived were compared with the data displayed on the matrix based on the key statements from the primary studies. Patterns identified were clustered into themes for critical data comparison. The themes and sub-themes were discussed and the conclusion drawn (Sparbel & Anderson, 2000).

The findings from this study were synthesized into three main themes, thus, the indicators for Child Health Nurse Practitioner in SSA, challenges and opportunities, and APN curriculum framework development for SSA. Reporting the findings make it available for the research, clinical and academic community to use. The findings from the scoping review were used to develop an 80 Likert scale Delphi questionnaire for expert review.

3.5.1.6 Phase 6: Consultation (optional)

The findings from the scoping review was subjected to peer review by a multinational multidisciplinary experts in a Delphi survey.

3.6 THE DELPHI METHOD

The Delphi technique is a research method in which experts review documents in series in order to reach consensus on what best fits a particular situation or programme (Hsu & Sandford, 2007; Myezwa, 2009; Meshkat et al., 2014). The Delphi technique could take one to five or more stages depending on how quick the expert committee reaches consensus (Deane MO Dekker K, Davies P, Clarke CE, 2003; Raine, 2006; Hsu & Sandford, 2007; Meshkat et al., 2014). The Delphi in this study was conducted in four phases as described in Chapter 5.

Various studies (Deane MO Dekker K, Davies P, Clarke CE, 2003; Raine, 2006; Hsu & Sandford, 2007; Myezwa, 2009; Meshkat et al., 2014) reported between 60%-80% agreement or disagreement by the experts as consensus. In the phase one of this study, 80% agreement or disagreement was set as consensus on an item within the questionnaire. Due to the open-

ended nature of the items in the subsequent phases, a combination of descriptive statistics and qualitative content analysis were used to analyse the data as presented in Chapter 5.

3.6.1 Objective

The Delphi survey was conducted to contextualize the findings of the scoping review and also to collect information from the multidisciplinary team on the structure of the educational system, content, teaching and learning methods, and resources needed to implement the Child Health Nurse Practitioner programme in SSA.

3.6.2 Sampling

The sampling frame was: nurses with a master's degree and understanding of child health issues in SSA; public health practitioners with a master's degree and understanding of child health issues in SSA; and medical practitioners with 3-years' practice experience in level 1 (district hospital) healthcare settings and an understanding of child health issues in sub-Saharan Africa.

3.6.3 The Tool

In this study, the Delphi questionnaire was developed from the results of the scoping review, pretested by five Master of Science students and reviewed by two child health nursing education experts for face and content validity. The questionnaire consisted of 80 Likert scale questions and 3 comment items. The questionnaire was divided into three sections: current context, educational policy statement and broad learning objectives (Annexure B). This study adopted a five-item Likert scale cum rating: Strongly disagree (1); Disagree (2); Neutral (3); Agree (4) and Strongly agree (5). Data were analysed using descriptive statistics (percentages).

3.6.4 Data Analysis

Data from phase one were analysed using simple descriptive statistics (Raine, 2006; Hsu & Sandford, 2007). Due to the open-ended nature of the items in the subsequent phases, a combination of descriptive statistics and quality content analysis (conventional content analysis) methods were used to analyse data as presented in Chapter 5.

In conventional content analysis, the codes and themes are derived from the content of the text data (Hsieh & Shannon, 2005), therefore, the process adheres to naturalistic enquiry paradigm which seeks to analyse data inductively (Tavakol & Zeinaloo, 2004).

In phase three of the Delphi, the topics provided by the experts were examined, categorised and then coded. The codes were derived from the content of the text (topics) provided and therefore conventional content analytic in nature. The researcher applied the content analysis process for observational text data in Graneheim and Lundman (2004), thus condensing the topics (meaning units) into condensed meaning unit (sub-themes), then interpreted the underlying meaning (by definition) of the condensed meaning unit and formulated and grouped sub-themes into themes (Graneheim & Lundman, 2004).

Before subsequent phases, the researcher furnished the experts with the results of the previous phases. The results of the Delphi were presented to the curriculum committee through email by the researcher for the development of the concepts for the Child Health Nurse Practitioner curriculum framework for SSA as described below.

3.7 DEVELOPMENT OF CONCEPTS FOR THE CHNP CURRICULUM FRAMEWORK

Instructions for selecting concepts for a concept-based CHNP curriculum framework were developed by the researcher to guide the curriculum committee (Annexure F). This is a twelve-page document comprising the overview of the curriculum structure, the knowledge domains from the scoping review, the results of the Delphi, the stages of developing a concept-based curriculum and a graphical guide for selecting concepts and exemplars for an CHNP curriculum synthesized from Ignatavicious' (2017) 12-steps of developing a concept-based curriculum.

The curriculum committee divided into two groups of three and five facilitate the development process. The group of three developed the initial concepts which were revised by the other five as detailed in Chapter 6.

3.8 THE DEVELOPMENT OF THE (CHNP) CURRICULUM FRAMEWORK

According Stabback (2007), a curriculum framework consist of eight common elements. These elements are:

- The introduction (current context)
- The educational policy statement
- Broad learning objectives and outcomes

- Structure of the educational system
- Structure of the curriculum content
- Standards of resources required for implementation
- Teaching methods and
- Assessment and reporting methods.

According to the Ontario Ministry of Training (2011), there are six principles that guide the development of a curriculum framework. These include the following:

3.8.1 Addressing the needs of the student

The curriculum should create the opportunity total development of the student and make learning meaningful by linking it to real life phenomena. Student needs changes regularly and the curriculum must take such changes into consideration.

In this study, the scoping review and the Delphi were aimed at contextualizing the study, considering all the factors that were necessary for the introduction of this programme in the SSA including the needs of the students.

3.8.2 Making learning objectives explicit

There are practitioners who assist students in the workplace, therefore, it is important to make the learning needs of the students very clear to the practitioner so they know exactly what the student is supposed to learn and do within the hospital environment.

In this study, the learning objectives were described as programme learning objectives and were further simplified in module outcomes, concepts and exemplars.

3.8.3 Culturally sensitive

Students and practitioners enter the programme with diverse cultural beliefs and worldviews. The curriculum framework must take into account the cultural values in order to make learning culturally enjoyable to the students. The study ensured that the multidisciplinary experts included in the Delphi were multinational, covering different cultures within the SSA. Notwithstanding, culture is diverse in SSA, the researcher would recommend that the individual institutions and countries that will utilize the findings of this study consider the cultural sensitivity of the framework.

3.8.4 Public accountability

The curriculum framework must be developed in such a way that all the stakeholders and the public understand the responsibilities of the institution and educators so as to hold them

accountable. The concept-based curriculum is explicit and the concepts are published for public review and inputs. In this study, seventeen faculties from 15 universities across ten SSA countries evaluated the framework for applicability within SSA. All curricula developed using this framework will go through the process of programme accreditation by recognised national accreditation bodies which ensures public accountability in a specific country.

3.8.5 The framework must be built on strong theoretical foundations and adult learning principles

The curriculum must be based on the principles of adult learning theories as deemed important in promoting student learning in higher education. This curriculum framework is concept-based and developed from literature review, expert Delphi and curriculum committee followed by a multinational nursing faculty evaluation. All of these stages were evidence-based. The concept-based nature of the curriculum framework also guarantees its adult learning nature.

3.8.6 Clarity to all stakeholders

Language can be used to exclude stakeholders regarding relevant aspects of a learning programme. It is important, therefore, to use simple and clear language that is devoid of ambiguities to explicitly communicate the curriculum framework.

This framework is written in English which is the most common language spoken across SSA. All other national languages such as French, Portuguese and Spanish were not accounted for in this study. This is one of the weaknesses of this framework. It, however, does not exclude non-English speaking SSA countries as the framework will be available publicly for translation and use under creative commons open access license.

3.9 CONFIRMATION OF THE CURRICULUM FRAMEWORK

All members of the expert group (who took part in the last phase of the Delphi) were asked to review the curriculum framework and confirm or otherwise if it represented the expert advice and information provided in the study.

This was done through an online survey. The participants who were selected were notified about were given a copy of the draft curriculum framework to review. They were asked to review the framework and state any deviations of the framework from the results of the Delphi they were part of. The results of this phase were analysed using thematic content analysis. There was no revision made as all the experts stated (on a Yes or No itemed

questionnaire) that the CHNP curriculum framework represent the results of the information they provide.

3.10 EVALUATION OF THE CURRICULUM FRAMEWORK

A survey was conducted to evaluate the draft curriculum framework for applicability in SSA. Survey research methods are traditionally quantitative or positivist in nature, and thus aims at describing a specific phenomenon in a population through the analysis of relationship between variables (Glasow, 2005; European Association of Methodology, 2008). Information gathered from a representative portion (sample) of the population of interest is used in describing the population in survey research (SSRIC, 1998; Glasow, 2005; European Association of Methodology, 2008; Neuman, 2014; Holman, 2017).

3.10.1 Sample

In phase six, (Table 3.1) of this study, nursing faculty from all universities across SSA formed the sampling frame. Faculty from 15 universities across sub-Saharan Africa were to be selected through simple random sampling for the evaluation of the curriculum framework. The random sampling was not feasible at the time of evaluation as many university websites did not have information on their departments of nursing. Some had pages for the department of nursing but lacked information on the nursing faculty on their websites. The researcher then used available information on the universities that had enough information on their departments and schools of nursing. The nursing faculty that presented research at the 5th Quadrennial General Meeting and 11th Scientific Conference (ECSACON, 2014) and the 7th Child Health Priorities Conference in Cape Town 2016 were also screened and included for this phase. The participants were included if they were faculty of a department or school of nursing in sub-Saharan Africa and had research or practice experience in child health, Primary Health Care or nursing education. These specialties were chosen as a result of the focus of this curriculum framework. Some of the faculty who were contacted to participate also recommended other faculty from other universities who were also contacted to participate. Thus the sampling method applied is purposeful convenient sampling.

3.10.2 Data collection

Surveys are classified based on the method of data collection. Duke University Law Library classified surveys into four types: telephone, face-to-face interviews, focus group and online surveys (Holman, 2017). Online survey platform (Redcap) and was used in the evaluation survey. The participants were known and selected based on specific expertise therefore there

was no issue of biasness in age nor issues of randomization. This method was used because of the multinational location of the expert group and the convenience of the method to the researcher and the respondents. The curriculum framework was sent to the faculty to review for its applicability within sub-Saharan African countries through an online (Redcap) survey system.

3.10.3 Data analysis

The evaluation questionnaire has one Likert scale question, one yes or no question and three follow-up comment sections (Annexure I). Responses from the Likert scale question which ranked the curriculum framework from excellent, very good, good, poor, bad to very bad and the 'yes or no' question were analysed using percentages. There comments clarifying the choices in the Likert Scale and the 'yes or no' questions were synthesized into word cloud. The reports from the experts were reviewed and their recommendations inculcated into the framework described in Chapter 7.

3.11 RIGOUR OF THE STUDY

The multimethod study employed qualitative and quantitative methods. Steps were followed to ensure rigour throughout the conceptual, empirical and interpretive phases of the study. Validity and reliability was ensured for the quantitative methods, trustworthiness for qualitative methods and ethical principles regarding institutional policy and human participants were adhered to.

3.11.1 Validity and Reliability

The Likert scale Delphi questionnaire was developed by the researcher and reviewed by two experts for face and content validity (Johnson, 2013). The tool was also pretested among five Master of Science in nursing students for applicability. The result of the first stage of the Delphi produced a reliability coefficient of 0.7349 upon a Cronbach alpha test. Cronbach alpha test results range from 0.00 to 1.00 coefficient of reliability (consistency). A coefficient of 0.70 and above signifies internal consistency and reliability of an instrument (Tavakol & Dennick, 2011). A very low coefficient of reliability means poor correlation of test items whereas very high (above 0.95) indicates redundant items within the instrument. The acceptable range of coefficient of reliability is 0.70 to 0.95 (Tavakol & Dennick, 2011). This indicates that the Delphi Questionnaire is internally consistent or reliable.

3.11.2 Trustworthiness

Trustworthiness is to qualitative research as ‘validity and reliability’ is to quantitative research. According to Lincoln and Guba (1985), trustworthiness is ensuring data quality or rigour in qualitative research. There are four criteria for developing trustworthiness of a qualitative study: credibility, dependability, confirmability and transferability (Polit & Beck, 2008). Trustworthiness refers to the employment of procedures to ensure the accuracy of findings (Brink, Walt & Rensburg, 2013).

3.11.2.1 Credibility

Credibility deals with the congruity of findings to reality (Lincoln & Guba, 1985). Data was ascertained from two main sources: scoping review of the literature and Delphi. The results of the scoping review were reviewed by the experts in the Delphi to ensure the information was credible. The experts included in the study were from different disciplines with expertise and various countries in sub-Saharan Africa so as to make the result representative of the region. The researcher has an understanding of nursing education within sub-Saharan Africa as his masters research was on “*Best Clinical Nursing Education Practices in sub-Saharan Africa*”. The curriculum framework was confirmed by the experts in the Delphi and was evaluated by seventeen faculties from 15 universities from ten sub-Saharan African countries to ensure that the framework correspond to the data gathered from the Delphi phase and is applicable in sub-Saharan Africa.

3.11.2.2 Transferability

Transferability is the applicability of the findings to different groups of subjects (people) and in other settings (Lincoln & Guba, 1985). The researcher ensured the transferability of the findings in Sub-Saharan Africa by recruiting experts from East and Central, West and Southern Africa regions in the Delphi and evaluation phases of the study. The studies included in the scoping review were also from SSA.

3.11.2.3 Dependability

Dependability is to ensure emergence of similar research findings if the methodologies, techniques and participants are replicated elsewhere (Brink et al. 2013). The researcher adhered to the details of the research proposal and kept audit trail of all the processes involved in the study. Any deviations and remediation during the study were documented appropriately in the thesis. For example, there was change in the methodology as presented in section 9.3 paragraph one.

3.11.2.4 Confirmability

Confirmability ensured the researcher does not inculcate his or her personal biases into the findings of the study (Brink et al., 2013). Personal biases were held constant and minimal during data collection, analysis, interpretation, and distribution. The findings from the scoping review were reviewed for consensus by the experts in the Delphi survey to minimize researcher bias. A detailed research plan was adhered to devoid of inclusion of personal biases. Audit trails were kept for the data collection, analysis, and interpretation phases of the research to ensure traceability of the research path without any difficulty to detect flaws. This was done through the filing of all the processes and the results of the data collection, analysis and interpretation.

3.11.3 Ethical Considerations

The research proposal developed by the researcher was presented to the Department of Nursing Education, School of Therapeutic Sciences, Faculty of Health Sciences, and University of Witwatersrand for peer review. The proposal was revised to inculcate inputs made by the faculty of the Department of Nursing Education. The protocol was then submitted to the Postgraduate Research Committee of the Faculty of Health Sciences, University of Witwatersrand for review and approval. The study was presented to the committee and inputs were made by the committee. The protocol was reviewed according to the inputs made by the Faculty of Health Sciences Research Committee. The protocol was resubmitted to the committee for final review and was approved (Annexures L and M).

Ethical review and approval was sought and acquired from the Faculty of Health Sciences Human Research Ethics Committee (HREC) of the University of Witwatersrand (M160632) to conduct the study (Annexures N and O).

The following ethical principles outline in the Nuremburg code of 1947 (Guraya, London & Guraya, 2014) were adhered to in order to protect human dignity, and avoid causing harm to the participants in the study.

3.11.3.1 Informed consent

Informed consent was sought from all human participants recruited for this study. The information letter (Annexure P) attached to the consent form (Annexure Q) for the participants included the “nature, duration, purpose, method, inconveniences, and effects of the research’ on the participants as (Guraya, London & Guraya, 2014). The participants were given the opportunity to read and sign the consent form if they are agreed to take part in the

study. They were made aware that the participation was voluntary and they have the opportunity to withdraw their participation from the study if they felt the study infringes upon their human right or unnecessarily exerts physical or psychological stress on them (Guraya, London & Guraya, 2014)

3.11.3.2 Privacy

Privacy is the right of the participant to determine how much personal information they are willing to give in a study (Guraya, London & Guraya, 2014). This study did not seek beyond participants' name, email and qualification. The information sheet given to the participants indicated that the participants have the prerogative of sharing such information required with the researcher.

3.11.3.3 Confidentiality

Confidentiality refers to non-disclosure of participant information or responses except to an authorised person or persons with the permission of the participants (Guraya, London & Guraya, 2014). The participants were informed that the information they provided in the study will not be disclosed to any third party. The researcher used codes to represent the participants to maintain their confidentiality. The data was analysed by the researcher with supervision from the supervisor who is an authorised person with regards to this study. The data collected will remain confidential and used for the purpose of study only in accordance with the University of Witwatersrand privacy policy.

3.11.3.4 Respect and responsibility

The term 'respect' refers to maintaining dignity and privacy of the participants. As described above, the participants were informed that their dignity and privacy will be maintained throughout the study. The researcher used codes to refer to the clients throughout the study and reporting of the findings. Responsibility comprises of "voluntary participation, avoidance of deception, rewards and incentives (Guraya, London & Guraya, 2014). The participation was voluntary, the participants were informed that the results of this study is aimed at improving healthcare and healthcare education within sub-Saharan Africa where they live.

3.12 RESEARCHERS ONTOLOGICAL/EPISTEMOLOGICAL STANCE

The researcher believes that knowledge exists outside the self and must be explored by the learner through the five senses (Cristea, 2015). The researcher believes that students need to continually construct new knowledge through their experiences and learning encounters

Cristea, 2015). Researcher believes that tertiary students are internally-motivated and enrol into nursing programmes with a wealth of knowledge and experiences which the teacher can draw on to deliver the programme(Noor, Harun & Aris, 2012). Conceptual learning is therefore an excellent way of stimulating learners to construct knowledge and apply knowledge.

3.13 CONCLUSION

This chapter presents the research design (multi-method study) and all the research methods that were applied in this study: the scoping review methodology, Delphi techniques, concept development, curriculum framework development and evaluation. The next chapter looked at the details of the scoping literature review.

CHAPTER 4 : THE SCOPING REVIEW

4.1 AIM

The aim of the scoping review was to describe the state of Advanced Practice Nursing and child health in SSA to serve as the foundation for the development of a responsive Child Health Nurse Practitioner curriculum framework for the region.

The concept of Advanced Practice Nursing is an emerging area in sub-Saharan Africa, hence, the choice of scoping review among other methods such as integrative literature review and systematic review (Arksy & O'Malley, 2005; Armstrong et al., 2011; Sun & Larson, 2015).

4.2 REVIEW QUESTION

The review question considered in this study was: 'What is the state of Advanced Practice Nursing and child health with regards to the development and implementation of Child Health Nurse Practitioner programme in sub-Saharan Africa?'

4.3 SEARCH AND INCLUSION

Five databases (EBSCO Host, Google Scholar, ProQuest, PubMed and Science direct) were searched using two combinations of the keyword i.e. (Advanced Practice Nursing/ Specialist Nursing, and Africa) and (Child Health and Africa). Relevant institutional websites (ICN, WACN, ECSACON) and two conference abstract booklets (*11th Scientific Conference, Harare, Zimbabwe and Building Children's Nursing for Africa Conference, Cape Town South Africa 2017*) were hand searched to retrieve as much literature available on Advanced Practice Nursing and child health in SSA.

In this study, basic and general inclusion criteria were set at the beginning of the study. Additional criteria were made when the reviewers saw it to be necessary. The criteria were set for the two separate searches individually despite some criteria being uniform.

For Advanced Practice Nursing in sub-Saharan Africa, the basic inclusion criteria included:

- Studies published between the January 2007 and March 2017
- The studies must be published in English
- The setting of the study (especially data collection) must be sub-Saharan Africa
- The study must be on Advanced Practice Nursing or specialist nursing

- The study could be peer reviewed or grey literature

For the search on child health in sub-Saharan Africa, the following inclusion criteria were applied:

- Studies published between the January 2007 and March 2017. Five years is preferable for Evidence-based Practice but articles were searched over a 10 years' period because of the meagre nursing research produced in Africa (Sun & Larson, 2015; Kpodo, Thurling & Armstrong, 2016). The researcher needs enough studies to arrive at a valid conclusion.

- The studies must be published in English
- The setting of the study (especially data collection) must be sub-Saharan Africa
- The study must be on child health (paediatric) nursing
- The study could be peer reviewed or grey literature
- All multinational studies included should have at least one sub-Saharan African country as a setting

Three important studies (Sietio, 2000; SANC & South African Nursing Council, 2005; Khalil, 2006) were included despite not meeting one inclusion criterion (year of publication). Sietso (2000) described the challenges and opportunities of the Family Nurse Practitioner programme in Botswana, South African Nursing Council (2005) prescribed the competencies of the paediatric nurse specialist in South Africa while Khali (2006) described the role of the nurse practitioners in reducing girl child abuse in Ghana, Uganda and South Africa. There were no additional inclusion criteria added during the search and the inclusion process.

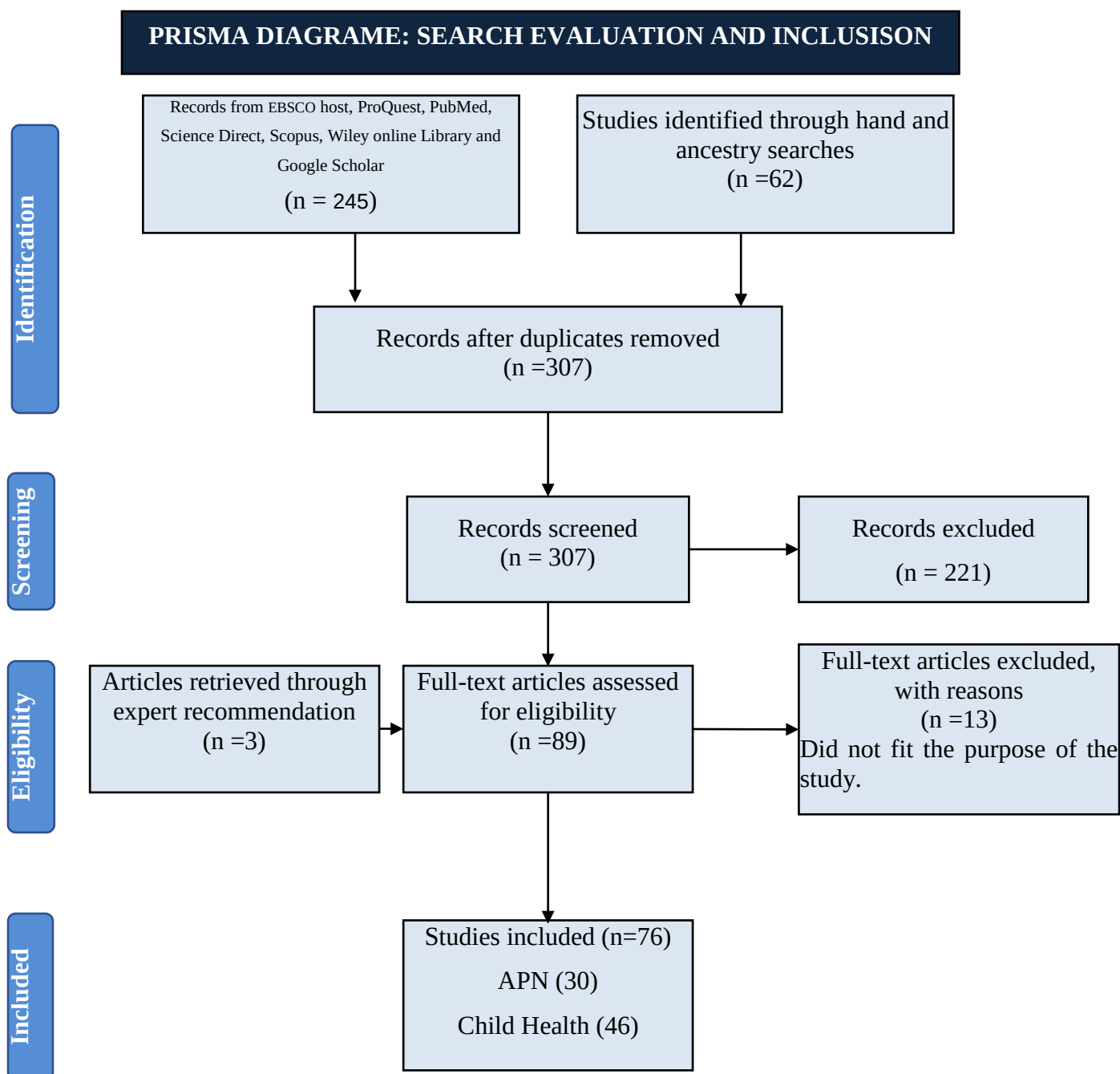


Figure 4.1 The search and Inclusion Process

4.4 CHARTING DATA

The data was extracted onto a data matrix as in the Annexure A. Information charted from the studies included include: author and date, setting, title, purpose, research design and the important findings of the study regarding Advanced Practice Nursing and child health in SSA.

4.5 COLLATING, SUMMARIZING AND REPORTING RESULTS

The thematic data analysis employed in this study consisted of five stages namely data reduction, data display, data comparison, drawing conclusions and verification (Miles, Huberman & Saldaña, 1994; Whittemore & Knafl, 2005). These stages are described below.

This studies included were categorised into two sections: Advanced Practice Nursing and child health. The major findings/ recommendations from the studies regarding Advanced Practice Nursing and child health charted unto the data matrix were colour coded. This made it easy for comparing articles with each other based on the giving characteristics- contribution to context, educational policy statement and broad learning objectives. The codes were categorised into sub-themes and sub-themes into three main themes, as described in section 4.7 below.

4.6 CONSULTATION

The findings from the scoping review were subjected to peer review by a multinational multidisciplinary experts in sub-Saharan Africa for its true representation of the sub-Saharan African context.

4.7 THEMES AND SUB-THEMES

Three themes were derived from a combination of related sub-themes which were deduced thematically from key findings in the studies included (Annexure R). Below are the themes and sub-themes.

4.7.1 Theme 1: Indicators for Child Health Nurse Practitioner Programme in SSA

Considering the population healthcare needs and the socioeconomic status of SSA, there is the need to find innovative ways to reduce the cost of healthcare for the population. Primary Health Care is best suited for the reduction of cost of healthcare in SSA. Advanced Practice Nurses will play a major role in providing the population with quality healthcare at an affordable cost and preventing hospitalization. Population dynamics, socioeconomic factors, poor access to healthcare and the need to reduce cost of healthcare are the indicators for the introduction of CHNP programme in SSA.

4.7.1.1 Population dynamics

A child is defined as any human being less than 19 years of age (SANC & South African Nursing Council, 2005; van As, 2010). The population of Africa increased about five times in

the past seven decades (Liu et al., 2016). By the middle of this century, the population of Africa will double from its current 1.2 billion people to about 2.4 billion people. It is estimated that percentage population of Africa will rise to 40% of the world by the middle of the 21st century (O'Malley et al., 2014; Liu et al., 2016). It is projected that more than half of the world's population increase will be recorded in Africa, for example, Africa accounts for 41% of all births in the world. Consequently, about half of the population of Africa is less than 19 years (Ahmed et al., 2011; World Bank Group, 2015; populationpyramid.net, 2016) whereas about half the population of sub-Saharan Africa is less than 18 years (Ahmed et al., 2011).

It is expected that by the end of the 21st century, 50% of the population of children in the world will be living in Africa (O'Malley et al., 2014). Currently there are about 179 million children under the age of five. The population of the children under the age of 5 years will swell five times by the middle of the 21st century (Liu et al., 2016). By 2050, there will be nearly a billion children (less than 18 years) in Africa (O'Malley et al., 2014), making 37% of the population of children in the world (UNICEF, 2014). The increase in the population of children in SSA is due to the high birth rate and declining child mortality (O'Malley et al., 2014). The majority of the population of SSA being children demand that children in SSA should be of utmost priority in healthcare and other sectorial policies (World Bank Group, 2015; Liu et al., 2016).

4.7.1.2 Socioeconomic factors

North America has only 3% of the world's disease burden but 25% of the healthcare workforce. By contrast, Africa has about 24% of the world's disease burden but only 3 % of the world's healthcare workforce (Kolars et al., 2012; Mwangi, 2017). More than three quarter of the population of SSA live in rural settlements where access to healthcare is difficult (Ahmed et al., 2011; ECOSOC, 2017; Mwangi, 2017). A growing trend in Africa is the rural urban migration, where the poor rural population seek greener pastures in the urban centres and cities with little or no skills. This leads them into urban slums with worse healthcare and social risks compared to the rural settings (Awumbila, 2014; Kimani-Murage et al., 2014; UNICEF, 2014; WHO, 2014).

Poverty is extreme within the SSA. About 70% of SSA population live on less than \$2.00 (R 26.4) per day whereas about 48% of those living in SSA live on \$1.25 (R16.27) per day (Liu

et al., 2016; ECOSOC, 2017). Children in Africa are fraught with various economic and political challenges such as conflicts, war and cultural challenges such as female genital mutilation and corporal punishment and many more (Khalil, 2006; Avogo, 2010; Minoiu & Shemyakina, 2014; Breen, Daniels & Tomlinson, 2015; Foster & Brooks-Gunn, 2015; Mokomane et al., 2017). Many children are HIV/AIDS orphans and at many times are burdened with acute and chronic diseases (Kidman et al., 2010; Vaaltein & Schiller, 2017). Vogenberg and Cutts (2009) posited that poor economic status affects the healthcare access and choices of people. They further stated that other basic needs such as food and shelter tend to compete with healthcare among poor populations (Vogenberg & Cutts, 2009). It is worth saying that the ultimate healthcare of children is unachievable under such political and socioeconomic conditions (Avogo, 2010; Wittenberg, 2013). The introduction of ACHNPs is essential in improving access and reducing the healthcare cost for the SSA population.

4.7.1.3 Poor access to healthcare in SSA

The majority of the healthcare facilities and practitioners are located in the cities and towns, thus denying the larger proportion of the population who live in rural and urban slums quality healthcare (Ahmed et al., 2011; East et al., 2014; Tong, 2015; Mwangi, 2017).

Nannan et al. (2012) reported in their 10 years' trend study of the causes of under-5-mortality in South Africa that about a quarter of the deaths are avoidable and 31% of the children die within 24 hours of admission into the hospital. In a retrospective record review to determine the place of death of children in a province in South Africa, it was reported that about 64% of the children had died of preventable diseases (acute respiratory and gastrointestinal infections). Many children died before reaching the hospital (Reid et al., 2016). This means that if the children were to have timely quality healthcare, most of the deaths would have been prevented (Nannan et al., 2012). Mulaudzi (2015), reported that the poor management of Integrated Management of Childhood Illness (IMCI) at the PHC before referral lead to 55% child deaths. Coetzee (2014) reported that 50% of the child mortality cases occur before children reach the hospital. Most importantly, that healthcare professionals are responsible for about 55% of the cause of child deaths in South Africa where healthcare is much developed compared to other SSA countries (Nannan et al., 2012).

Nothing works better than early detection and prevention of disease and risk factors in healthcare delivery (Thandrayen et al., 2010; Witternberg, 2010; Mulumba & Wilson, 2015;

Reddy, Patrick & Stephen, 2016). Primary Health Care is the system of choice in meeting the healthcare needs of SSA (Madubuko, n.d.; Ahmed et al., 2011; Adjapon-Yamoah, 2015). To make PHC efficient, there is need to retrain and extend the roles of nurses as they have demonstrated capacity to take on extended roles through the quality of healthcare they provide in task shifting roles in school-based clinics, HIV/AIDs treatment and many other healthcare settings across SSA where the medical profession lacks the capacity to respond to the needs of the population (Fairall et al., 2012; Terry et al., 2012; Wolf et al., 2012; Tong, 2015). Nurse who are engaged in task shifting are only trained on the job with or without certification. Mostly, the nursing councils do not expand the scope of practice to permit nurses in task-shifting roles to function autonomously. For Primary Health Care to develop in SSA, some roles that have traditionally been assigned and protected by the medical profession must be shared with advanced level nurses (Madubuko, n.d.). Advanced Practice Nurses are needed to expand access to quality healthcare to the underserved communities in sub-Saharan Africa (Adjapon-Yamoah, 2015).

There are no Advanced Practice Nurses in many SSA countries. Where there are Advanced Practice Nurses, nursing councils do not develop an expanded scope of practice for them to practice to full capacity due to resistance from medical profession and lack of advocacy for the Advanced Nursing Practice (Mccarthy, 2012; East et al., 2014; Adjapon-Yamoah, 2015; Tong, 2015; Mwangi, 2017; Sastre-Fullana et al., 2017) . This is an exemplar of underutilization reported in Soucat, Scheffler, and Ghebrey (2013). There is the need for sub-Saharan Africa to do more in reducing child mortality (Kidman et al., 2010; Coetzee, 2014). There is the need to increase access to quality healthcare to the children of SSA at an affordable cost (Tong, 2015). Globally, the only tried and tested healthcare practitioners who are able to venture into the rural underserved areas and provide cost-effective and quality healthcare to the communities are Advance Practice Nurses (Sietio, 2000). Typically, Child Health Nurse Practitioners will be very important in expanding quality healthcare to the vulnerable children of SSA (Martyn et al., 2013; Fowler et al., 2015).

4.7.1.4 Need to reduce cost of healthcare in SSA

If 70% of sub-Saharan African population live on less than \$2.00 (R 26.4) per day, then there is the need to put strategies in place to protect them against the cost of ill health as they have difficulty in affording daily bread, let alone healthcare. To access healthcare, the majority of the population who live in rural settings will have to spend extra money on transport to the

urban centres for care, not forgetting the cost of accommodation and living expenses in the urban centres while they seek care.

Due to poor access to PHC management, Westwood, Levin, and Hageman (2012) stated that 10 % of the children admitted to hospitals were not expected be on admissions whereas many level-1 patients were admitted into level-2 hospitals. This means that there will be increase cost of healthcare because of hospitalization and use of sophisticated gadgets on clients who do not need them. An observational study conducted by Thandrayen et al. (2010) confirmed the findings of Westwood, Levin, and Hageman (2012) that many patients were admitted to higher level of care than they needed.

4.7.2 Theme 2: Challenges and Opportunities for the Implementation of CHNP Programme in SSA

Introducing APN programmes in SSA will face some challenges (limited resources, opposition from the medical profession, inefficient nursing regulation and regulatory bodies, and lack of context-specific APN benchmark programmes). Nevertheless, there are many opportunities (quality and quantity of nursing workforce, resource sharing and collaboration between institutions, and the track record of APNs globally) that will facilitate the implementation of such programmes in the SSA context.

4.7.2.1 Limited resources

There is lack of human resource especially the faculty to teach in the Advanced Practice Nursing programmes due to lack of preparation and migration of the quality staff (Solomons et al., 2008; Kolars et al., 2012; Regan et al., 2016). Only a few Universities within sub-Saharan African countries has the physical infrastructure and financial resources to implement APN programmes (Terry et al., 2012). Students in postgraduate studies in Africa are mostly part-time, taking a full-time programme in APN will reduce their income. This may scare them away from the programme.

4.7.2.2 Opposition from the medical profession

The existence of lower cadre physicians (clinical officer, physician assistant and medical assistant), whose training is far less rigorous and shorter than APN, threatens the APN programme (INEPEA, 2008a; East et al., 2014; Kleinpell et al., 2014; Sastre-Fullana et al., 2014). Healthcare laws in SSA do not permit APN to prescribe so the APN takes the action and the physician documents later (East et al., 2014). The medical profession protects the roles of their members therefore posing the greatest opposition against the introduction of

Advanced Practice Nursing programmes in sub-Saharan Africa (Pulcini et al., 2010; Kolars et al., 2012). The greatest support for the APN programmes comes from domestic nursing organizations, nurses and governments. It is therefore important that nursing organizations undertake radical advocacy to push the APN programmes through (Pulcini et al., 2010).

4.7.2.3 Inefficient nursing regulations and regulatory bodies

Nursing councils lack the recourse and autonomy to expand the scope of practice of APN to reflect their extended roles. This creates role confusion among nurses and other healthcare professionals, placing restriction on the Advanced Practice Nurses (Duma et al., 2012; East et al., 2014; Kleinpell et al., 2014). Medical doctors are the heads of ministries and departments of health in SSA countries, this gives the medical profession extra authority make policies that oppose the emergence of any professional body or speciality area that competes with them for their traditional diagnosis and prescription roles. Responsibility lies on the nursing councils to develop scope and standards of practice to enable nurses to practice within the confines of the law and to the full capacity of their knowledge, skills and attitudes gained through training and practice (Sietio, 2000; Duma et al., 2012; McCarthy, 2012; Wolf et al., 2012; Doodhnath, 2013; East et al., 2014; Kleinpell et al., 2014; Academy of Nursing of South Africa, 2015; Heale, Rieck Buckley & Heale, 2015; Mwangi, 2016). Globally, the Advanced Practice Nurse is expected to conduct thorough patient assessment, diagnose (medical), prescribe treatment regimen, refer clients for appropriate healthcare, manage the therapeutic regimen, evaluate care and discharge clients (Kleinpell et al., 2014).

The highly qualified nurses are posted to higher level of care settings while the lower cadre of nurses are posted to community health settings which require much autonomy, leading to inefficiency in Primary Health Care services, society tends to be sceptical about the extending the roles of nurses for diagnoses and prescription (East et al., 2014). In many countries where APN is developing and task shifting is practiced, nurses are practicing their extended roles without license (Sietio, 2000; Duma et al., 2012; McCarthy, 2012; Wolf et al., 2012; Kleinpell et al., 2014; Heale, Rieck Buckley & Heale, 2015). This creates delicate legal issues as any acts of omissions and commissions could be to the disadvantage of the nurse. A study of the nursing council regulation across sub-Saharan Africa in 2012 reported that even though task shifting existed in all the countries studied, only Tanzania has officially extended

the roles of the nurses to cover their practice in improving access to HIV treatment (Mccarthy, 2012).

4.7.2.4 Lack of context-specific APN benchmark programmes

Nursing training in sub-Saharan Africa has been benchmarked on western colonial material and philosophy (Kolars et al., 2012; Coetzee et al., 2016). It is reasonably certain that the nurses produced from the *neo-colonial* curricula are less responsive to the special healthcare needs of sub-Saharan Africa because the healthcare needs and challenges of sub-Saharan Africa are different from those of the western world (Ahmed et al., 2011; Coetzee et al., 2016).

There are limited number of APN training programmes in sub-Saharan Africa (Solomons et al., 2008; Wolf et al., 2012; So et al., 2016). Some existing APN programmes have been truncated (Duma et al., 2012). There is the need for the nursing profession to institute media campaigns, publish research works on the roles and the impact of APN on the healthcare delivery and demonstrate the quality of the APN programmes through all the available means to buy the interest, trust and support of government and the population of sub-Saharan Africa (Madubuko, n.d.; Kleinpell et al., 2014).

4.7.2.5 Quality and quantity of the nursing workforce

Literature included in this study stipulated that nurses form about 70-80% of the human resource for health in SSA (Sietio, 2000; Sheer & Wong, 2008; Duma et al., 2012; Kleinpell et al., 2014). This means that nurses form the foundation of the healthcare system and by extension, the foundation of the child healthcare in sub-Saharan Africa (Davis et al., 2014). In West Africa, professional nurses have at least one additional advanced practice speciality education whereas there are about a thousand nurses with a master's degree in nursing but the nursing council registers do not contain any Advanced Practice Nursing categories (Madubuko, n.d.). Primary Health Care therefore must be largely driven by the nursing workforce if it must succeed (Sietio, 2000).

4.7.2.6 Resources sharing and institutional collaborations

South Africa, the most developed nation in terms of education has enough physical and human resource for specialist nursing programmes (Coetzee, 2014). Resources from South Africa were used in developing specialist programmes in many African countries such as Ghana, Malawi, Botswana, Zambia (Bell et al., 2014; Coetzee, 2014; Martel et al., 2014).

South African resources could be drawn upon to mentor and develop faculty for other countries. Some NGO's such as INEPEA and other Universities such as Michigan University, University of Alberta, Nottingham University, Western University (Canada) have collaborated with local universities in SSA to develop nursing programmes. Their human and financial resource base can be harnessed.

There is positive working relationship between the hospital and agencies, communities of interest, educational institutions, and international partners in sub-Saharan Africa (Mutea & Cullen, 2012). The positive working relationship is necessary for the development and implementation of Advanced Practice Nursing programmes. The quality of child healthcare practice at the tertiary hospitals in sub-Saharan Africa creates the opportunity for APN programme to be sustained through inter-professional education and training (Nutor, 2012; Esch et al., 2017).

4.7.2.7 The track record of Advanced Practice Nurses globally

About 23 nations have implemented APN programmes all over the world and the outcomes have proven records of improving access to quality healthcare at affordable cost. About half of these nations have well-established licensure and regulatory systems in place (Pulcini et al., 2010). Specific to sub-Saharan Africa, nurses in Botswana and South Africa are evolving into APN roles whereas lessons learnt in the development of APN programmes in Rwanda are being used to develop such programmes for Burundi (Solomons et al., 2008; Duma et al., 2012).

4.7.3 Theme 3: APN Curriculum Development for SSA

This theme comprises sub-themes that looked at the possible educational policy statement, the structure of the CHNP programme, stakeholders to consult in developing CHNP programme in SSA, the nucleus of the CHNP curriculum and the content of the CHNP curriculum.

4.7.3.1 Educational Policy Statement

International policy on healthcare as stated in the Sustainable Development Goal three requires that all countries especially the developing world must aim at achieving some targets by the year 2010. The United Nations (UN) demands that preventable deaths to new-born babies and children under the age of 5 years should be ended (World Health Organization, 2016b). Countries all over the world are expected to end these preventable deaths with 12 neonatal deaths and 25 under-five deaths per 1000 live births 'margin of error' (World Health Organization, 2016b).

The tripartite principles or expectations of both Primary Health Care and Advanced Practice Nursing, which is to improve access, provide quality healthcare at an affordable cost to the population, the United Nations Sustainable Development Goal 3 also believes that there must be a universal coverage of quality healthcare, medicine and vaccines, and vital health services at a cost they can afford (World Health Organization, 2016b).

The UN also expects all countries to continually increase the amount of money they input into healthcare, increase healthcare workforce training and development, and promote recruitment and retention of healthcare in developing countries (World Health Organization, 2016b). The researcher believes that the UN should have qualified the healthcare workforce with the adjective 'appropriate'. Community level interventions and early detection of and treatment is implicitly stated in the UN Development Goal three target 3.9 3c. (World Health Organization, 2016b).

The APN should be much more efficient and responsive to national healthcare needs at the primary healthcare clinics in the rural and urban communities where they have full control and autonomy to provide PHC to the community (Sietio, 2000). The healthcare system of sub-Saharan Africa should focus on addressing the population needs, paying special attention to child survival programmes and PHC (Sietio, 2000; Wittenberg, 2013; O'Malley et al., 2014; Burke, Heft-neal & Bendavid, 2016; Liu et al., 2016). Wittenberg (2013) stated that the interventions that have much impact on child health in Africa are the cost effective PHC services.

4.7.3.2 Educational Structure

A minimum of a two (2) year's masters level programme is recommended for Advanced Practice Nursing programme (Madubuko, n.d.; INEPEA, 2008a; Pulcini et al., 2010; Duma et al., 2012; Kleinpell et al., 2014; Academy of Nursing of South Africa, 2015; Heale, Rieck Buckley & Heale, 2015; Mwangi, 2016).

The credit hours recommended for the programme is 180 (Duma et al., 2012). Evidence-based clinical practice is recommended as basic focus of the APN programme (Duma et al., 2012; So et al., 2016). Duma et al (2012) stated that the coursework should be clinically based, research-based and multidisciplinary. Mwangi (2006) believes that the APN programme should comprise 5000 hours of clinical placement. Fowler et al. (2015) found that clinical placement has much impact on the students than other forms of learning experiences. Duma et al. (2012) believes that more than 50% of the credits in the APN

programme should be allocated to clinical practice, they further stated that for every one credit of course work done, and there must be a four-hour clinical placement for role taking. This means that a programme which covers one hundred and twenty credit hours will have 480 hours of clinical placement for role taking (Duma et al., 2012).

4.7.3.3 Consultation: To whom for whom and by whom?

The APN curriculum must be aligned to the needs of the population that the Advanced Practice Nurses will be serving, for same reason, the all stakeholders of the curriculum must be involved in the curriculum development process. The community must be engaged and needs assessment must be conducted to ascertain what the real health issues are, how the people perceive these issues and what the people think could be done to respond to those needs (Essa, 2011; Coetzee, 2014; Academy of Nursing of South Africa, 2015; Coetzee et al., 2016). There is the need for consultation and communication between the higher education institutions, the Departments/Ministries of Health, Departments/ Ministries of Education for the recognition of the programme and its graduates (Coetzee et al., 2016; So et al., 2016).

The Child Health Nurse Practitioner to be trained through this programme will provide healthcare to the children in sub-Saharan Africa. A child is defined generally as any human being less than the age of 19 (SANC & South African Nursing Council, 2005; van As, 2010). Some jurisdictions in SSA may define a child differently from this blanket definition but in all cases, no country in SSA has defined a child older than 18 years. Even though a child could be as old as 18 years of age, the most vulnerable age is less than five years hence the emphasis of many national and international healthcare oriented organisations and institutions prioritizing children under the age of five (World Health Organization, 2016b).

4.7.3.4 Nucleus of the CHPN Curriculum

Studies included in the review strongly indicated the following components at the core of the curriculum:

- Studies show that the programme should be taught with evidence-based nursing using Primary Health Care approach.
- Community placement is highly recommended (Duma et al., 2012; Coetzee, 2014).
- Research must form the foundation of the CHNP curriculum and must be directed to respond to the national needs of the population the graduates of the curriculum will serve (Nannan et al., 2012; Coetzee, 2014; Academy of Nursing of South Africa, 2015).

4.7.3.5 Content of the APN Curriculum: Broad Learning Objectives

The content of this programmes is mainly divided into domains. From the studies included in this review, the content of the APN is divided into five (A-to-E) domains as follows:

4.7.3.5.1 Domain A: Nursing leadership, management and administration

The key responsibilities of the APN in their setting is healthcare governance, leadership, management, advocacy and resource management (SANC & South African Nursing Council, 2005; Duma et al., 2012; East et al., 2014; Sastre-Fullana et al., 2014; Academy of Nursing of South Africa, 2015).

The Advanced Practice Nurse plays the roles of a mentor, coach, change agent and a consultant in child health nursing (Madubuko, n.d.; SANC & South African Nursing Council, 2005; INEPEA, 2008a; East et al., 2014; Sastre-Fullana et al., 2014). He or she is a team builder and player (SANC & South African Nursing Council, 2005; INEPEA, 2008b). The APN is expected to be skilled in managing clinical care of children at PHC level (Madubuko, n.d.; SANC & South African Nursing Council, 2005; INEPEA, 2008b; Sastre-Fullana et al., 2014). The management of human, physical, financial and other medical resources is the responsibility of the Advanced Practice Nurse at their Primary Health Care setting (Madubuko, n.d.; SANC & South African Nursing Council, 2005; INEPEA, 2008b; Sastre-Fullana et al., 2014).

The APN is to engage in reviewing and setting standards for child health nursing practice in their country (SANC & South African Nursing Council, 2005; Sastre-Fullana et al., 2014; Academy of Nursing of South Africa, 2015). He or she should be capable of contributing to research and professional engagements in the development and implementation of practice standards (SANC & South African Nursing Council, 2005; East et al., 2014; Academy of Nursing of South Africa, 2015). The CHNP should initiate programmes that will improve the lives of children in SSA (SANC & South African Nursing Council, 2005) using best practices in approaching the healthcare needs of children (SANC & South African Nursing Council, 2005; East et al., 2014). Advocacy for quality child health services is an important part of the Child Health Nurse Practitioner within their community and country (SANC & South African Nursing Council, 2005; INEPEA, 2008b).

4.7.3.5.2 Domain B: Quality Practice

This domain covers issues in quality in healthcare delivery and continuous professional development. The Advanced Practice Nurse should be able to identify child healthcare

indicators, conduct quality audit and implement quality improvement practices in order to improve access, safety and effectiveness of PHC for children in the community they serve (SANC & South African Nursing Council, 2005; Reid et al., 2016).

The APN should ensure him or herself and all the healthcare staff that works with him/her are up-to-date on current best child health practices and implement them in his/her practice. He or she has the responsible to ensure that their practices conform to professional practice standards (SANC & South African Nursing Council, 2005).

The APN should be trained to be able to ensure personal development to maintain competence in PHC. The ANP must engage their staff and community leadership in the development of short learning programmes for community healthcare staff (SANC & South African Nursing Council, 2005; Reid et al., 2016).

4.7.3.5.3 Domain C: Ethico-legal practice and professionalism

This domain covers the ethos of professional practice. It refers to all the legal aspects of the Advanced Practice Nurse's practice. What are the boundaries, rules and regulations, and scope of practice and standards within which the Advanced Practice Nurse must operate?

The APN training must make an APN practitioner capable of utilizing ethical theories and principles in paediatric services, adhere to and enforce staff adherence to all relevant ethical codes of conduct set by the nursing profession and regulatory body (Madubuko, n.d.; INEPEA, 2008a; Duma et al., 2012; Lake, 2014). She or he must contribute to the resolution of ethical issues in practice.

The APN is expected to develop community- specific child healthcare programmes to improve community health outcomes, simultaneously, ensuring children are protected from dangerous healthcare practices (Madubuko, n.d.; SANC & South African Nursing Council, 2005; INEPEA, 2008b).

The Advanced Practice Nurse must ensure that her or his practice is within the boundaries of the law of the country and evaluate such practices regularly in relation to professional practice standards (Lake, 2014). The APN is responsible for his or her decisions, actions or omissions in child healthcare and must provide rationale for such decisions which are expected to be evidence-based (SANC & South African Nursing Council, 2005; INEPEA, 2008b)

Advocacy is much needed in SSA where child health nursing programmes and the Advanced Practice Nursing programmes have not taken grounds yet. The APN should be able to advocate for the children, their health and that of their families and community. He should be

able to advocate for safe healthcare practices within the community they serve so as to prevent dangerous traditional/cultural health practices(SANC & South African Nursing Council, 2005; Sastre-Fullana et al., 2014).Clear, and accurate documentation of care is essential in the practice of APN and the practitioner must be skilled in record keeping (SANC & South African Nursing Council, 2005).

4.7.3.5.4 Domain D: Education and Research

The CHNP should engage in teaching, mentoring, supervision and coaching, giving feedback into educational curriculum, do school and community health education and screening (Madubuko, n.d.; SANC & South African Nursing Council, 2005; INEPEA, 2008b). He or she must be able to teach and mentor nursing students in clinical practice (Sastre-Fullana et al., 2014)

The APN is expected to be engaged in clinical problem identification, data collection and analysis in their field of practice. Evidence based practice is expected to form the foundation of the advance practitioner's practice. He or she must ensure that research is well inculcated into practice. He or she must be skilled in critical review of paediatric nursing research in order to determine their clinical significance and subsequently inculcating them into practice (Madubuko, n.d.; INEPEA, 2008b; Whitworth, Sewankambo & Snewin, 2010; Duma et al., 2012; Sastre-Fullana et al., 2014).The CHNP must develop policies, procedures, and guidelines based on research findings(SANC & South African Nursing Council, 2005)

4.7.3.5.5 Domain E: Advanced Child Health Nursing Practice

The Advanced Child health Nurse practitioner (CHNP) is expected to provide family-centred care (Madubuko, n.d.; Sietio, 2000; Essa, 2011; Fowler et al., 2015)

The CHNP should conduct community child health needs assessment and provide health education that enhances risk-reducing behaviours (safety), developmental needs and activities of daily living (Sietio, 2000; Cheema, Stephen & Westwood, 2013; Gilmore & McAuliffe, 2013; Coetzee, 2014; Claassen et al., 2016)

The CHNP must conduct a thorough head-to-toe physical and psychological examinations

The CHNP must document and share case management procedures and lessons learned with client, family and members of the healthcare team respecting clients' confidentiality and privacy.

Many studies have stated that the Advanced Practice Nurse must have the autonomy to conduct thorough physical and psychological assessment of clients, prescribe medications

and manage the therapeutic regimen, paying critical attention to their scope of practice and the conditions that need referral (Madubuko, n.d.; Sietio, 2000; INEPEA, 2008a; Duma et al., 2012; Terry et al., 2012; Kleinpell et al., 2014; Mwangi, 2016)

The CHNP should apply critical inquiry skills and clinical reasoning to make clinical judgement on the health status of children (mainly), families and communities

The CHNP should employ good communication skills, evidence based information to make clinical judgements on clients' overall health status (Sietio, 2000; INEPEA, 2008b; Wolf et al., 2012).

The child health nurse practitioner should be able to manage a wide range of childhood illnesses (diarrhoea diseases, pneumonia, HIV, and other infectious diseases) that threaten the lives of children in sub-Saharan Africa, focusing on the need for early detection and prevention (SANC & South African Nursing Council, 2005; Cluver & Orkin, 2009; Thandrayen et al., 2010; van As, 2010; Ebuehi, 2010; Nannan et al., 2012; Westwood, Levin & Hageman, 2012; Duma et al., 2012; Feucht et al., 2012; Cheema, Stephen & Westwood, 2013; Coetzee, 2014; Ansong et al., 2016; Liu et al., 2016; Reid et al., 2016; Claassen et al., 2016; Hendricks, McKerrow & Hendricks, 2016; Kruger et al., 2016; Sastre-Fullana et al., 2017),.

The child health nurse practitioner should be able to grasp the pure sciences (anatomy, physiology, psychology, sociology, pharmacology, pathophysiology, microbiology) that form the basis of clinical decision making (Madubuko, n.d.; Sietio, 2000; INEPEA, 2008b; Mwangi, 2016).

Clinical diagnostic procedure are also recommended for the Advanced Child health Nurse practitioner (Madubuko, n.d.; INEPEA, 2008b; Duma et al., 2012; Mwangi, 2017).

The Advanced Practice Nurse should be able to establish and manage a private practice (clinic) (Currie, Chiarella & Currie, 2013). There is a history of Private nurse practitioners in Kenya and South Africa (Sietio, 2000; Duma et al., 2012; East et al., 2014)

4.7.3.5.6 Domain F: Attitudes and Values

The CHNP should engage the community with patient centred care principles. He or she must respect and value the child and family. He must understand that the final decision on care lies with the child and family and respect their decisions after counselling.

The CHNP must be culturally competent and should mostly be able to speak the language of the community served to facilitate communication, confidentiality and trust.

4.8 CONCLUSION

This chapter presents the details of the scoping review. The findings of the scoping review were used to develop a Delphi questionnaire for expected review and consensus in Chapter 5 below.

CHAPTER 5 : THE DELPHI SURVEY

5.1 INTRODUCTION

The Delphi survey was conducted in four phases. The first and the second phases were used to reach consensus on the findings from the scoping review. The third phase sought information from the experts on the structure of the Child Health Nurse Practitioner programme; the experts were asked to propose topics that should be taught in the programme, and how they should be taught and assessed, based on the results from phases one and two. The fourth phase sought the experts view on the resources needed to implement the Child Health Nurse Practitioner programme in sub-Saharan Africa.

5.2 PHASE ONE

5.2.1 Sample and Sampling: The Expert Group

A combination of purposive and snowball techniques were used to select a total of 49 experts (36 nurses, seven public health practitioners and six medical practitioners) for this study. Nurses included as experts in this study were required to have completed or be at an advanced stage of completing their Master's degree in nursing, have worked in sub-Saharan Africa for at least five years post nursing registration and be abreast of child health nursing issues within sub-Saharan Africa. All public health practitioners included in this study have at least a master's degree and have carried out at least one community project in sub-Saharan Africa. The medical practitioners included in the study have practiced for at least three years in a lower level of care (District hospital) and are abreast of child health nursing issues in sub-Saharan Africa.

Forty-three experts comprising thirty-three (33) nurses, six (6) public health practitioners and four (4) medical practitioners, of the 49 experts signed the consent form and responded to the questionnaire in phase one (Table 5.1). This represents a response rate of 87.76%. Five responses (3 from nurses, one from a public health practitioner, and one from a medical practitioner) were not complete and were subsequently excluded from the analysis, leaving 38 complete responses (30 nurses, 5 public health practitioners and 3 medical practitioners) for the analysis.

Table 5.1: Experts included in the Delphi Phase 1

Code	Highest Qualification and Current Field of Work	Sub-region
NURSING		
N1	PhD in Nursing, Head of School of Nursing	West Africa
N2	MSc Nursing, Lecturer	West Africa
N3	MSc Nursing, Clinical Practice	East & Central Africa
N4	MSc Nursing, Clinical Practice	Southern Africa
N5	MSc Nursing, Manager, Occupational Health Centre	Southern Africa
N6	MSc Nursing, Clinical Practice	Southern Africa
N7	MSc Nursing, Clinical Facilitation	Southern Africa
N8	MSc Nursing, Occupational Health Nurse	Southern Africa
N9	PhD Nursing, Seed Global Volunteer(lecturer),	East & Central, Southern Africa
N10	PhD Provincial Nursing officer	Southern Africa
N11	MSc Nursing, Nurse manager	West Africa
N12	MSc Nursing, Clinical Practice	East & Central Africa
N13	PhD Head of Multidisciplinary Simulation Laboratory.	Southern Africa
N14	MSc Registrar, Ghana college of Nurses and Midwives	West Africa
N15	PhD Professor of Nursing	East & Central, Southern
N16	MPhil Nursing, Lecturer	West Africa
N17	MSc Nursing, Lecturer	Southern Africa
N18	PhD Nursing, CEO of Nursing Education Association	Southern Africa
N19	MSc Nursing, Clinical practice	East & Central Africa
N20	MSc Nursing, Occupational Medicine Inspector of Mines	Southern Africa
N21	MSc Nursing, Clinical Facilitator	Southern Africa
N22	PhD Nursing, Lecturer	Western Africa
N23	MSc Nursing, Clinical Practice	Southern Africa
N24	PhD Nursing, Lecturer	East & Central Africa
N25	PhD Nursing, Lecturer	East & Central Africa
N26	PhD. Nursing, Lecturer	Southern Africa
N27	MSc, Nursing, Clinical Practice	Southern Africa
N28	MSc Nursing, Lecturer	Southern Africa
N29	MSc Nursing, Clinical practice	Southern Africa
N30	MSc Nursing, ICN APN Representative	East & Central Africa
N31	MSc Nursing, Clinical Practice	West Africa
N32	PhD Nursing, Lecturer	Southern Africa
N33	MSc Nursing, Lecturer	Southern Africa
PUBLIC HEALTH PRACTITIONERS		
P1	PhD Public Health, Lecturer	Southern Africa
P2	PhD Researcher	West Africa
P3	PhD Epidemiology, Researcher	West Africa
P4	PhD Clinical Epidemiology and Aging Research	West Africa
P5	PhD Epidemiology, Researcher	West, Southern Africa
P6	MPH Health Tutor	West Africa
MEDICAL PRACTITIONERS		
M1	MMed, Clinical practice	West/Southern Africa
M2	MMed, Clinical Practice	West/Southern Africa
M3	MMed, Clinical Practice	West/Southern Africa
M4	MMed, Clinical Practice	East & central Africa

5.2.2 Data collection

As described in Chapter 3, a scoping review on Advanced Practice Nursing and child health in sub-Saharan Africa, using the five stages of scoping research developed by Arksey and O'Malley (2005), was carried out. The result of the scoping review, as described in Chapter 2, was used to develop a Delphi questionnaire for expert consensus.

The 80-item tool was divided into three parts (current SSA context, education policy statement and broad learning objectives regarding the Child health Nurse Practitioner programme) of a curriculum framework outlined by Stabback (2007). There were twelve Likert scale items on current SSA context, seven Likert scale items on educational policy statement and sixty-one Likert scale items on broad learning objectives regarding the Child health Nurse Practitioner programme. Two experts (one child health specialist nurse and one nursing educator) reviewed the developed questions, for face and content validity, prior to sending it out to the experts.

The Delphi questionnaire was captured on the Redcap online survey platform, and then pretested using five nursing students from sub-Saharan Africa currently registered on a Master's degree programme. The necessary revisions were made and the final questionnaire sent to experts, using the Redcap electronic survey system. The questionnaire was repeatedly resent every Monday at 8:00am to any experts who had not responded during the prior week for 7 weeks. The survey was closed after the 8th week. The responses were extracted from the Redcap system onto a Microsoft Excel sheet and inspected for completeness. Incomplete responses were excluded. The cleaned data set was analysed using Statistical Package for the Social Sciences (SPSS) version 23.

5.2.3 Results

The researcher set 80 percent agreement or disagreement on a question/item as consensus from the experts. Agreement in this phase was the sum of the percentages from “strongly agree and agree” whereas disagreement represents the sum of “strongly disagree” and “disagree”.

Out of the eighty (80) Likert scale statements (1-12, 14-20, and 22-82), consensus was reached on seventy-one (71). The expert group could not reach consensus on nine (9)

statements, which were all in part 1 (current context), i.e. questions 3, 4, 6, 7, 8, 9, 10, 11 and 12 as presented in Table 5.2 below.

Table 5.2: Result from Delphi Phase 1

Grey highlights indicate statements on which consensus could not be reached.

No.	DELPHI STATEMENT	RESPONSES (%)		
		Agree+ strongly agree	Neutral	Disagree + strongly disagree
1.	Healthcare in Sub-Saharan Africa should be oriented more to preventative than curative care	89.5	7.9	2.6
2.	The Child Health Nurse Practitioner (CHNP) is relevant to the healthcare needs of children in Sub-Saharan Africa.	92.1	5.3	2.6
3.	The CHNP programme should be at a master's level (NQF level 9 of South African Qualification Authority) of nursing education.	78.9	15.8	5.3
4.	The CHNP should practice autonomously	76.3	13.2	10.5
5.	The CHNP should prescribe medications for children	97.4	2.6	0
6.	The CHNP should practice only at Primary Health Care and District hospital settings	44.7	13.2	42.1
7.	The CHNP should practice under the supervision of a paediatrician at all levels of care	18.5	18.4	63.1
8.	The CHNP training programme should be fully funded by the national governments	60.5	26.3	13.2
9.	A "child" is anyone less than 19 years of age	36.9	15.8	47.2
10.	The CHNP practising at PHC level should be remunerated with additional salary compensation	68.4	10.5	21
11.	The CHNPs should be posted to areas where they can speak the local language of the community	71.1	7.9	21
12.	The CHNP should be licensed to provide private care (set up a private clinic)	76.3	13.1	10.6
13.	Please comment on this section			
14.	By the 10th year of implementation of the CHNP programme, there should be a Child Health Nurse Practitioner at every Primary Health Care clinic	89.5	7.9	2.6
15.	By 2030 under-five mortality rate should be 12 per 1000 or below	86.9	13.1	0
16.	By 2030 there should be at least one (1) CHNP per 1000 children in Sub-Saharan Africa	81.6	13.1	5.3
17.	In the 20th year of implementing the CHNP programme, there should be at least two (2) Child Health Nurse Practitioners in every children's ward in all district hospitals	86.9	10.5	2.6
18.	The CHNP should be a district and community IMCI (Integrated management of Childhood illnesses) coordinator	86.8	7.9	5.3
19.	The CHNP should be an expert in the resuscitation of babies	97.4	2.6	0
20.	The CHNP programme should aim at decreasing the rate of admission of children into acute wards	100	0	0
21.	Please comment on this section			
22.	The CHNP should be a mentor, coach, change agent and a consultant in child health nursing	100	0	0
23.	The CHNP should engage in setting standards for child health nursing practice in their country	100	0	0
24.	The CHNP should initiate programmes that will improve the lives of children in SSA	100	0	0
25.	The CHNP must be a team builder	100	0	0
26.	The CHNP should lead the management of clinical care of children at PHC level	94.7	5.3	0
27.	The CHNP should manage or assist in managing healthcare resources at their settings	94.7	5.3	0
28.	The CHNP must be a child advocate within his/her community and country	97.4	0	2.6
29.	The CHNP should contribute to research and professional engagements in the development and implementation of practice standards.	100	0	0

		RESPONSES (%)		
30.	The CHNP should use best practice in the management of children	100	0	0
31.	The CHNP should implement quality improvement practices in order to improve access, safety and effectiveness of PHC for children in the community they serve	100	0	0
32.	The CHNP should keep up to date on current best child health practices and implement them in his/her practice	100	0	0
33.	The CHNP must ensure her/his practices conform to professional practice standards	100	0	0
34.	The CHNP should engage in lifelong learning within the practice area	100	0	0
35.	The CHNP should ensure personal development to maintain competence in PHC (Primary Health Care)	100	0	0
36.	The CHNP must engage the staff and community leadership in the development of short learning programmes for community healthcare staff	100	0	0
37.	The CHNP should utilise ethical theories and principles in paediatric services	97.4	2.6	0
38.	The CHNP must adhere to and enforce staff adherence to all relevant ethical codes of conduct set by the nursing profession and regulatory body	94.8	2.6	2.6
39.	The CHNP must engage the community in ensuring children are protected from dangerous healthcare practices	97.4	2.6	0
40.	The CHNP must contribute to the resolution of ethical issues in practice	94.7	5.3	0
41.	The CHNP must ensure practice is within the boundaries of the law of the country	97.4	2.6	0
42.	The CHNP must evaluate her/his own practice in relation to professional practice standards	97.4	2.6	0
43.	The CHNP should be responsible and accountable for own decisions, actions or omissions in childcare	94.8	2.6	2.6
44.	The CHNP should engage in performance appraisal on a regular basis	94.7	5.3	0
45.	The CHNP must provide a rationale for decisions and actions in the care of the child	97.4	2.6	0
46.	The CHNP should develop community- specific child healthcare programmes to improve community health outcomes	97.4	2.6	0
47.	The CHNP should accurately document all clinical information related to child health care provided	97.4	0	2.6
48.	The CHNP should engage in teaching, mentoring, supervision and coaching, giving feedback into educational curriculum, do school and community health education and screening	97.4	0	2.6
49.	The CHNP should ensure research and clinical experience are inculcated into practice	100	0	0
50.	The CHNP should critically evaluate paediatric nursing research in order to determine their clinical significance and application	100	0	0
51.	The CHNP must use best practice evidence to guide practice	100	0	0
52.	The CHN should engage in clinical research problem identification	94.7	5.3	0
53.	The CHNP must participate in clinical research projects to improve child health	92.1	7.9	0
54.	The CHNP must develop policies, procedures, and guidelines based on research findings	92.1	7.9	0
55.	The CHNP should provide family-centred care	94.7	5.3	0
56.	The CHNP should conduct a needs assessment and provide health education that enhances risk reducing behaviours (safety), developmental needs and activities of daily living	94.7	5.3	0
57.	The CHNP must develop child health promotion programmes for the community based on needs assessment	97.4	2.6	0
58.	The CHNP must conduct a thorough head-to-toe physical examinations to diagnose and manage clients	100	0	0
59.	The CHNP should apply critical inquiry skills and clinical reasoning to do differential diagnosis	100	0	0
60.	The CHNP must document and share case management procedures and lessons learned with client, family and members of the health care team respecting clients' confidentiality and privacy	97.4	2.6	0
61.	The CHNP should employ evidence based information to make clinical judgements on clients' overall health status	100	0	0
62.	The CHNP must prioritise and manage emergencies and life-threatening conditions accordingly	100	0	0
63.	The CHNP should utilise expert knowledge to interpret results of screenings and diagnostic investigations conducted	100	0	0

		RESPONSES (%)		
64.	The CHNP should provide outcome criteria for diagnoses made	100	0	0
65.	The CHNP should develop a prioritised plan of care that includes interventions and alternatives	100	0	0
66.	The CHNP must prescribe appropriate medication for specific diagnosis	97.4	2.6	0
67.	The CHNP must review the client management plan with other staff and family members	97.4	0	2.6
68.	The CHNP must refer clients to an appropriate health care setting	100	0	0
69.	The CHNP should collaborate with other staff and family to implement the management plan	100	0	0
70.	The CHNP must manage side effects of medications successfully	86.84	10.53	2.63
71.	The CHNP should monitor and evaluate the progress of the childcare plan	97.4	0	2.6
72.	The CHNP must provide follow-up care	94.74	2.63	2.63
73.	The CHNP must involve the client, family and multidisciplinary team in the evaluation of care provided	100	0	0
74.	The CHNP must collaborate and communicate with the child, family, multidisciplinary team and community in providing health services	97.4	2.6	0
75.	The CHNP should make care patient-centred, family-centred or community-centred	100	0	0
76.	The CHNP should make family and community members responsible for health projects and life style changes	92.1	5.3	2.6
77.	The CHNP should be friendly and approachable to clients, family and community	100	0	0
78.	The CHNP should engage community members in research and evaluation of care	97.4	2.6	0
79.	The CHNP should have high level of autonomy in practice and responsible for actions taken	94.7	5.3	0
80.	The CHNP must demonstrate critical thinking, and complex decision-making skills	100	0	0
81.	The CHNP must be culturally sensitive to the needs of the community	97.4	2.6	0
82.	The CHNP should strive to continually improve health care services	100	0	0
83.	Please comment on section three			

5.3 PHASE TWO: FOLLOW UP ON THE QUESTIONS WITHOUT CONSENSUS

Consensus (80% and above) was reached on seventy-one (71) of the 80 Likert scale questions (1-12, 14-20, 22-82). The expert group could not reach consensus on nine (9) Delphi statements, which are all in part 1 (current context) i.e. questions 3, 4, 6, 7, 8, 9, 10, 11 and 12. These nine (9) questions were modified for follow-up phase two as seen below. The comments made by some experts on the questions have been provided with the questions below.

5.3.1 Sample and Sampling: The Expert Group

The second phase of the Delphi saw an attrition of eleven (11) experts, leaving 27 (21 nurses, five public health practitioner and one medical practitioner) expert participants.

5.3.2 Data Collection

After consultation with the two experts who reviewed the tools and based on comments from the experts on the questions on which consensus had not been reached, the researcher rephrased the statements to allow the experts to give an in-depth view regarding their choices, through open ended questions (Annexure C). The experts were given the results of the previous phase and were allowed to change their choices. The revised questionnaire was developed on Microsoft Word and distributed to the experts via email.

The researcher followed up with the experts who did not respond weekly for six weeks. The phase was closed and the responses from the experts collated onto a single Microsoft Word document. The responses of the second phase (open ended questions) were analysed using thematic content analysis (Hsieh & Shannon, 2005). The views were read over and over to gain understanding of the content. The responses were categorised as agreement or disagreement on the statement from phase one that were made open ended in phase two. The arguments in affirmation or otherwise on the statements were juxtaposed and the researcher decided on inclusion of the statements, informed by the simple majority and the supporting arguments made by the experts.

5.3.3 Results

Q3. The CHNP programme should be at a master's level (NQF level 9 of South Africa) of nursing education. Please advise.

All twenty seven (27) experts commented on the revised, open-ended question on the level of the Advanced Practice Nursing programme. Twenty one (21) experts stated that the programme should be at the master's degree level (SAQA NQF Level 9). They supported this idea with the rationale that the APN programme is at a master's degree level worldwide, and it allows time for more clinical practice and acquisition of the necessary knowledge, skills and attitudes to provide care for the less privileged through PHC programmes.

One expert (N15) stated that:

"I strongly believe that if we want to advance the profession of nursing we must require basic entry into practice to be a minimum of a bachelor's degree. Recognizing this may not be realistic in the immediate future in low resource settings, at a minimum it must be acknowledged that it is desirable to have a bachelor's degree. Given that a generalist should be prepared at that level, an advanced practitioner should be at a higher level – a master's degree should be the minimum for any specialization in nursing/midwifery. Higher levels of knowledge and skills are necessary for specialization in any field. Advancement of the profession requires advancement of education."

Another expert (N27) said:

"I agree with the programme being at master's level as it is a speciality and at this level, expertise is required. Expertise can only be achieved after a period based on experience and adequate use of evidence. In addition, from the first questionnaire, it can be inferred that the programme intends to groom an independent practitioner. This can only be possible on the NQF level 9 as evidenced by the HEQC level descriptors. To practice independently as a specialist, a wide range of experience is required as opposed to the limited experience at lower levels."

Two experts who disagreed with the master's level stated that:

"Having the CHNP at the bachelor's level may allow persons who are interested in child health to lay a more robust foundation rather than starting with general nursing and continuing with CHNP at the master's level. It may also better equip students with theory and practice of child health than having it at the master's level, considering the duration of bachelor's degrees (more semester internship)" (P3).

“I think doing this at the bachelor’s level is okay provided the students already have clinical experience at diploma level” (N22).

Researcher’s Decision/Lessons Learnt: Based on the frequency in affirmation and expert arguments, the researcher concluded that the APN programme should be at the master’s level and be pegged at SAQA NQF level nine (9). This has implications for entry requirements.

Q4. The CHNP should practice autonomously. Please advise.

Twenty-four (88.9%) experts responded in support of autonomous CHNP practice. Three (11.5%) believe that the nurse will need to work in collaboration with other health workers such as paediatricians.

Those in support of autonomy believe that the master’s level training for the CHNP, the history of Advanced Practice Nurses Practicing as independent practitioners and the PHC level practice for CHNP (where there are no medical officers) provide opportunity for the CHNP to be trained for autonomous practice. Those in disagreement believe that the nurse practitioners must practice under supervision.

Two participants who believe the nurse practitioners should practice autonomously stated that:

“I believe the CHNPs are likely to practice in communities and districts where paediatricians are rarely accessible. Therefore, it may be beneficial for CHNPs to have their internships (one year after their bachelor’s degree) under the supervision of a paediatrician. This will facilitate their acquisition of the requisite knowledge, skills and competency to take initiatives and render holistic child care. However taking initiatives on patient care does not equate to autonomy, as already pointed out that health professionals work collaboratively” (P3).

“It is a long-standing role of a nurse to function autonomously, so why not a specialist nurse? However, it does not mean the nurse cannot refer to or consult any member of the multi-disciplinary team” (N17).

Two experts who do not believe the APN should practice autonomously said that:

“The CHNP will work with a multidisciplinary team to enquire how they can manage some complicated cases while some cases he/she (CHNP) has to make decisions according to the skills and knowledge she/he has” (N12).

“The CHNP will always need to work with other specialists and consultants” (N20).

Researcher’s Decision/Lessons Learnt: From the expert advice, the researcher decided that APNs should practice autonomously and refer cases beyond their skills and facility infrastructure to the appropriate facility and personnel for the needed care. Autonomy means different things to different experts and therefore the researcher must take concrete steps to conceptually define the terminology in the curriculum framework.

Q6. The CHNP should practice only at Primary Health Care and district hospital settings. Please advise.

Fourteen (51.9%) of the experts stated that the CHNP should practice at the PHC and District Hospital settings, whereas 12 (44.4%) stated that they should practice at all levels, and one (3.7%) stated that they should practice at all levels with exception of tertiary hospitals.

Various arguments were made for and against the limitation of the level of practice for the CHNP, as represented in the percentage for and against and the quotations below. It is indicated that limiting the level of practice for the CHNP will create rigidity in posting according to need and therefore making posting discriminatory, defeating the purpose of filling in shortage gaps. which may arise at any level of care.

A few comments for the limitations are as follows:

“I am in full support of achieving the Alma Ata declaration of bringing healthcare to the doorsteps of the people. When the PHC and district are strengthened with skilled CHNP, few cases will be seen at the Regional and teaching hospitals” (P6).

“The needs of our health system are such that the DoH will benefit greatly if the CHNP is practising at the PHC level and District Hospital level, as that will reduce the number of referrals to higher level of care as those will be dealt with effectively by the CHNP at the lower levels” (N7).

“It appeared to me that the need for a CHNP was to provide care to children especially in deprived areas - to meet the lower level needs across the continent. Thus, while I agree that the CHNP should have skills that are applicable everywhere, their training should be intentional in equipping them with skill to help mothers and children in deprived areas” (P5).

Those who disagree with the limitation stated that:

“I disagree with Q6. In the private sector nurses and midwives (especially) are not allowed to practice some of their roles (e.g. delivering babies) as doctors only are allowed to do this. This should not be the case for CHNP as well, they should be able to practice at the level of their scope of practice in all settings” (N32).

“CHNP should be well equipped to function at any level. Why at PHC and Districts only, when this person is a specialist? Just like specialist doctors, nurses should function at any level. We need nurse consultants too at any level” (N17).

“The CHNP should practice at all levels as there are clients needing her expertise present at all facilities. In a paediatric unit, she will help provide expert care and guidance to other nursing colleagues. Their concentration could be at the PHC and District hospital settings as it is closer to the grass root where there is likely to be more child care needs due to embedded factors in the rural settings” (N5).

Researcher’s Decision/Lessons Learnt: The researcher concluded that the CHNP should be trained with the essential skills to practice at all levels of care, paying critical attention to the necessary knowledge, skills and attitudes needed for district level and Primary Health Care settings.

Q7. The CHNP should practice under the supervision of a paediatrician at all levels of care. Please advise.

Fourteen (14) or 51.9% of the experts believe the CHNP is an autonomous practitioner and licensed to do so, and therefore does not need supervision from a paediatrician. They

further explained that there is the need for collaborative care and referral chain management between the CHNP and the paediatrician.

Nine (9) experts believe that the CHNP should be supervised by a paediatrician during training and internship, so as to provide the CHNP the opportunity to acquire the needed skills from the paediatrician. Four experts, however, believe that the CHNP should be supervised by the paediatrician, especially when he or she is practicing at a higher level of care, where the consultant paediatrician leads the paediatric care team.

These are some comments from the experts:

“Strongly disagree. Why should a doctor supervise a nurse? These are two different professions. We work collaboratively, so nurses should supervise each other and not to be supervised by doctors” (N17).

“If the intention of having more CHNPs is to ensure accessibility of quality child care, then it may not be cost-effective and practical for CHNPs to practice under paediatricians. They should have acquired the competency to take initiatives regarding child care during their internship under a paediatrician. I believe a one-year post-qualification internship under a paediatrician should be sufficient” (P3).

“Clearly a paediatrician may have skills and knowledge that the CHNP may not have surgical skills for example. In that light, the paediatrician may be the head of the “Child care health team” (P5).

Researcher’s Decision/Lessons Learnt: The researcher concluded, based on the evidence provided, that the CHNP should be supervised during training and internship by a paediatrician, and collaborate with the paediatrician during practice after internship. The length of the training, as provided by the experts in Phase Three of the Delphi survey, is determined to be two (2) year’s training and one (1) year of internship.

Q8. The CHNP training programme should be fully funded by the national governments. Please advise.

Fifteen (15) or 55.6% of the experts believe that the CHNP programme should be fully funded by national government. They opined that governments should fund CHNP training

so as to increase access to the programme to meet national and international targets in child health. An expert stated that:

“MOH must have strategic priorities that focus on child health if an expectation for full funding is to be realized. It would be wonderful to have these programs fully funded to ensure improved access for interested individuals...” (N15).

Twelve (12) or 44.4% of the experts believe that the programme should be funded by government if there is funding available. The individual student should pay fees, as government budgets on healthcare are limited and fully funded programmes attract the wrong people. Some of the experts believe that government should be the frontline funders, assisted by non-governmental and other international organizations, with students partly self-funding and by paying fees.

A few quotations are as follows:

“It is a good idea to have CHNP fully funded by governments, however, looking at the economies of most sub-Saharan countries, this would be a challenge. I think the governments should just take part while the students also take part” (N29).

“This indeed may increase participation. However, should a government lack the capacity to fully fund the programme, a subsidy (at least 50%) might also be appropriate. Again, in the era of increasing private facilities, some governments may be hesitant to fully fund this programme, with the notion that private facilities usually make profit and should be willing to invest in the training of their personnel” (P3).

“The government should be in the front line in financing the CHNP programme but in situations where funds are limited other sources like NGO, or even self-funding are viable options” (N3).

Researcher’s Decision/Lessons Learnt: From the expert advice, the research concluded that the programme should be funded by governments, if possible. If governments cannot fully fund the programme, a subsidy should be given to the students to reduce their cost of training, so as to pull as many nurses as possible into the CHNP programme.

Q9. A "child" is anyone less than 19 years of age. Please comment.

There were varying definitions of a child from various experts, based on their jurisdiction. Some defined it based on their national definition of a child. Others defined the child based on international organizations working documents. Generally, the highest age described in the expert information is up to 18 years of age (less than 19 years). Some also defined the child based on vulnerability.

Some comments provided are:

"In our country "a child" is up to the age of 14 years" (N3).

"A child is any person below 5 years old. That is the main area of concern for UNICEF globally because they are more susceptible to infections than other age groups" (P6).

"According to the United Nations Convention on the Rights of the Child, a child is defined as "a human being below the age of 18 years, unless under the law applicable to the child, majority is attained earlier". This is ratified by 192 of 194 member countries. Biologically, a child is generally anyone between birth and puberty. However, the dilemma here is that there is no standard for the age at which puberty is attained. In very low resourced countries, puberty may occur later due to nutrition. For the purposes of planning an educational program to prepare CHNP, a number must be selected in order to include relevant content. I would recommend the age of 18, to be consistent with the UN Convention. Also, it ensures that no gap exists between child and adult healthcare. I would anticipate that for a "child" of the age of 18 a mother/father would electively choose an adult practitioner, yet as healthcare workers we would want to ensure no gaps in delivery options exist" (N15).

"I disagree with Q9 as it implies that an 18 year old is a child. In South Africa, a 12 year old can consent for medical procedures (including termination of pregnancy), but can only give consent for surgical procedures at the age of 18. This means that an 18 year old (and even a 12 year old sometimes) is not seen as a child in South Africa" (N32).

"This depends on the perspective from which a child is defined. There are variations in terms of constitutional definition of a child depending governments' constitution. Biologically, a child is any human being below the age of puberty. However, there is no

standard age of puberty. Therefore, constitutional definition of a child would be reliable” (N29).

“Definitions will vary between countries - and also skills required will be vast in the current context. In medical terms, I believe the skills of a CHNP will be restricted to children perhaps under 12 years - or according to children dosages of treatments. At 18 years, such a person is an adult - at least in medical terms” (P5).

Researcher’s Decision/Lessons Learnt: From the expert arguments provided, the researcher concluded that a child is anyone less than the age of 19, and as prescribed by the constitution of the country in which the Child Health Nurse Practitioner is registered. Therefore, the definition of a child may differ from country to country. The scope of practice as prescribed by the nursing and midwifery council for the Child Health Nurse Practitioner should take into account the disparities across sub-Saharan Africa and conceptually define who a child is.

Q10. The CHNP practising at PHC level should be remunerated with additional salary compensation. Please advise.

Twenty two (81.5%) of the experts do not support extra remunerations for the CHNP practicing in deprived areas, but believe they should be adequately remunerated according to their skills and how much work they do. They believe it may lead to irregularities in the remuneration scale, which, in turn, breeds confusion and disagreement between nurses. Three experts do not support extra remuneration. Six (22.2%) experts believe that a CHNP practicing in underserved areas should receive additional remuneration so as to motivate them to stay and provide care for the communities that are hard to reach.

An expert (N27) stated that:

“One asks for compensation when the conditions are not at par with others. I believe if work conditions and benefits are like that of other levels of practice (career advancement, promotion and recognition etc.) then there would be no need for extra compensation. If the opposite is the case, then compensation is needed.”

Other experts said:

“No additional remuneration. It will be difficult to manage different remuneration scales and this may also cause problems within the nursing fraternity” (N3).

“They deserve the needed salary and eligible allowances. Extra “monetary pampering” maybe unnecessary and unsustainable” (P5).

“Adequate remuneration is a necessity for retention of skilled practitioners.”

“They should be remunerated accordingly with the aim to retain them within the Government system” (N7).

Researcher’s Decision/Lessons Learnt: It was concluded that CHNPs practicing in all settings should be remunerated at the level of the specialist nurse of the country in which they practice. The local communities and districts could institute motivational packages to draw and retain CHNP to their communities. Governments should also progressively improve infrastructure and social amenities to deprived areas, so as to make the lives of the healthcare providers comfortable in those settings.

Q11. The CHNPs should be posted to areas where they can speak the local language of the community. Please advise.

Twenty (74.1%) experts believe that the level of care and community involvement of a CHNP demands that the CHNP understands the language of the community in which he or she is posted. Four of the 20 also stated that even though speaking the language of the local community comes with advantages and efficiency, it should not be the sole criteria for posting as some community may be deprived of the services of a CHNP if no CHNP speaks their language. They also believe that a CHNP could learn the language of the people served as he or she practices.

Some expert comments are as follows:

“I feel nursing is about engaging with the communities and if the practitioner cannot speak the language in the particular area, then that will be a challenge for both” (N17).

“Quality healthcare delivery is dependent on communication. Therefore, the practitioner must be able to understand and communicate with those who are being served. Perhaps

language lessons as part of the program is part of the solution. The local community who has the need for a CHNP could play a key role in the development of those skills in the person who has been assigned. Language is important as is community acceptance. By being a participant in the language acquisition process the CHNP may realize better acceptance” (N15).

“It would be beneficial for the CHNP to be able to speak the language of the community, but it shouldn’t be a requirement; there will always be someone to interpret if there’s a language barrier. This will encourage the CHNP to learn a new language and new culture and that will positively impact on his/her life skills acquired” (N5).

“While language is important, cross cultural practice (within countries) will also allow nurses to learn other languages and have other far reaching benefits” (P5).

Researcher’s Decision/Lessons Learnt: In conclusion, language should be a critical factor in selecting who practices where, while making sure that no community is deprived the services of a CHNP on the basis of language.

Q12. The CHNP should be licensed to provide private care (set up a private clinic).

The experts believe, unanimously, that the CHNP should be licensed to go into private care. However, some experts believe that government regulatory bodies should take the necessary steps to prevent an influx of private practices without necessary documentations and minimum infrastructural standards, so as to protect the population against dangerous practices.

“While this may be important, care should be taken to prevent the influx of health facilities that lack the requisite resources to render optimum healthcare. If possible, CHNPs should only be allowed to set up a health facility provided they are partnering with a qualified midwife or another health professional, with a minimum of a bachelor’s degree” (P3).

“I agree, CHNPs should be licenced to practice privately as this enhances professional growth for the practitioner, and widens the scope of healthcare choices for the community, but should be affiliated to a District / Regional Hospital”(N7).

“Most practitioners with child health experience are often patronized locally and informally. It will be a great opportunity for them to be more confident in providing these services legally in a private practice, once certified. There should be checks in place as well to ensure their practice is up to date” (N27).

Researcher’s Decision/Lessons Learnt: The Advanced Child Health Nurse Practitioner should be licensed to practice in, and operate, a private practice, within the given regulations and quality control measures.

5.4 PHASE THREE: EDUCATIONAL STRUCTURE, STRUCTURE OF CURRICULUM CONTENT, TEACHING AND ASSESSMENT METHODS

5.4.1 Expert Group

All the twenty-seven experts who completed Phase Two also complete Phase Three, with a response rate of 100 percent.

5.4.2 Data Collection

The questionnaire was developed based on the results from phase 1 and 2. The questionnaire was in two sections. The first section covered the structure (the number of years, the number of school weeks within the years and number of hours to be completed for school work within a school week) of the educational system, and the second part covered content, teaching methods and assessment methods. The second section was open ended and required experts to provide the topics to be taught/learned, the teaching and assessment methods under each of the seven knowledge domains (Leadership and Management; Quality Practice; Education and Research; Ethico-legal Practice and Professionalism; Advanced Nursing Practice; and Values and Attitudes) as described in Chapter 3 and confirmed in Phase One of the Delphi Survey. The questionnaire was reviewed by two experts (a child health specialist and an educator) for face and content validity, and pretested with five masters of nursing students across sub-Saharan Africa.

A decision was made on the structure of the educational system, using a simple majority of the expert choices. Conventional content analysis was employed in analysing the topics proposed by the experts. The teaching and assessment methods were analysed using descriptive statistics.

5.4.3 Results

5.4.3.1 Section 4: Structure of the Educational System

The structure of the educational system describes the organisational system in which the curriculum framework is to be implemented, specifying the number of years, the number of school weeks within the years and number of hours to be completed for school work within a school week.

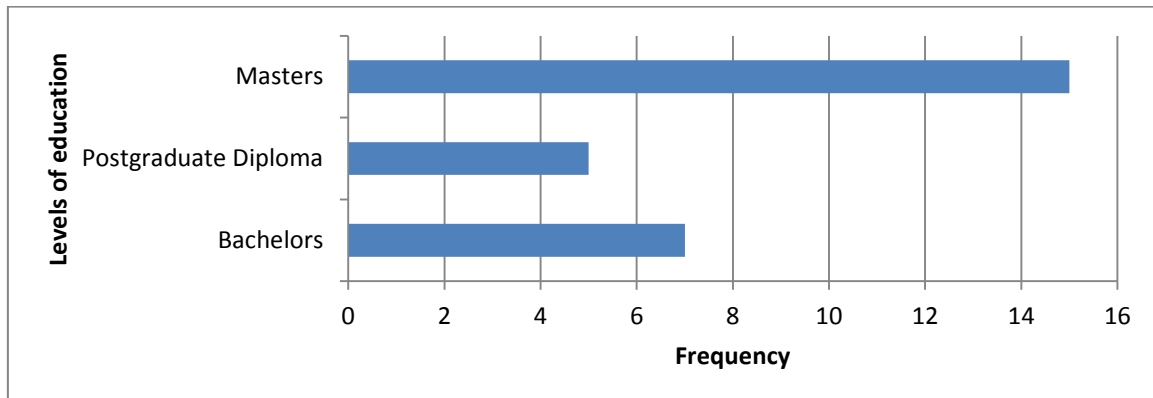


Figure 5.1: Level of the CHNP programme

The majority of the experts (55.6%) stated that the CHNP programme should be offered at the master's level (NQF 9). This has implications for policy for countries within sub-Saharan Africa and requires changes to policies to produce nurses with a four-year bachelor's degree for enrolment into the CHNP programme.

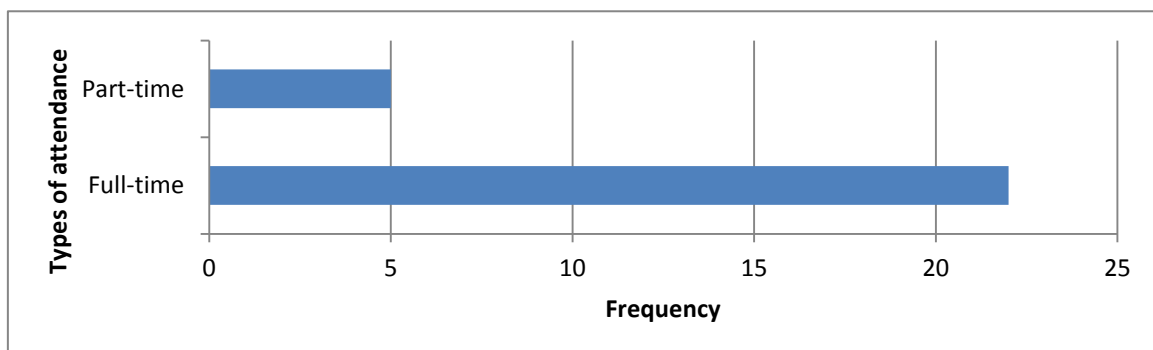


Figure 5.2: Type of attendance

The majority (81.5%) indicated that the programme should be a full-time master's programme. One expert stated that the programme should be a one-year full-time and 2-year part time programme so as to enable hospitals and institutions to release their nurses without difficulties.

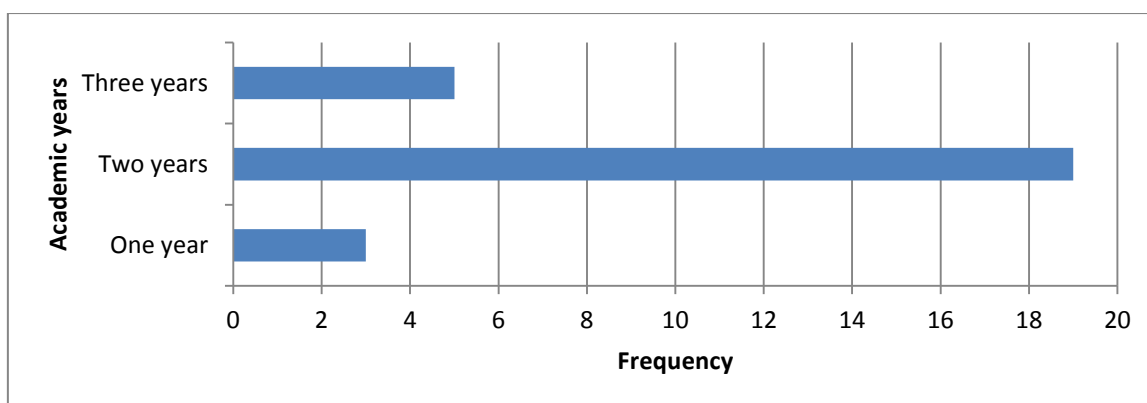


Figure 5.3: Academic years

The majority (70.4%) of the experts believe the programme should be two academic years. An expert commented that each country should look at their own healthcare system and make provisions from that for the CHNP programme.

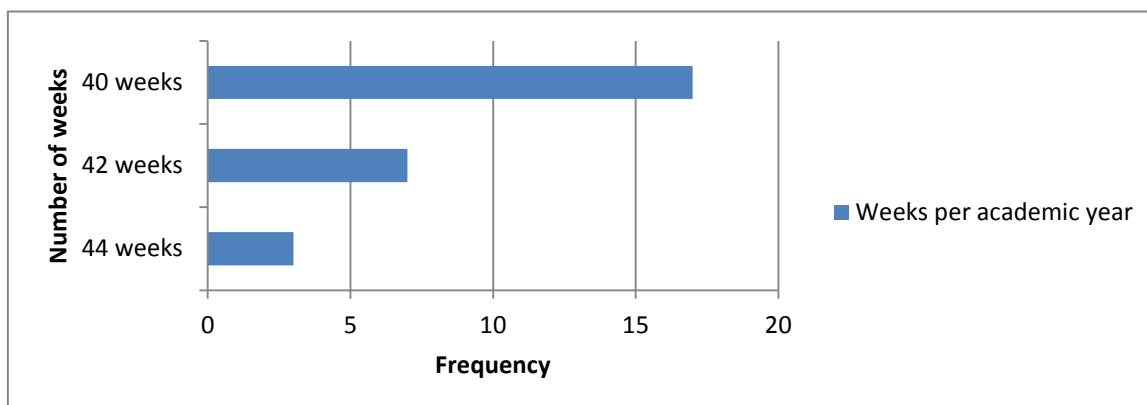


Figure 5.4: Number of weeks per academic year

Forty (40) academic weeks (number of weeks in an academic year) per year was seen as the favourable number of weeks to implement this programme, by the majority (63.0%) of the experts.

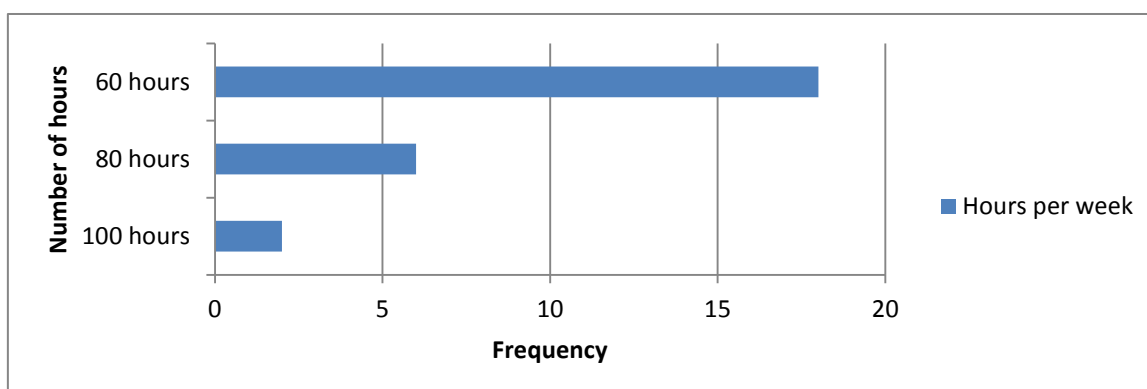


Figure 5.5: School hours per week

The majority (66.7%) of the experts believe 60 hours a week is enough for the CHNP to be equipped with the requisite skills needed for care. An expert demanded that the number of hour be revised based on quality and reasonable workload purpose. It was discovered from the comments that the experts would have opted for a smaller number of hour per week, if the option was made available. This question was sent back to the experts with more options. The question was resubmitted as part of Phase Four with a lesser number of hours as options, based on the South African Qualification credit system.

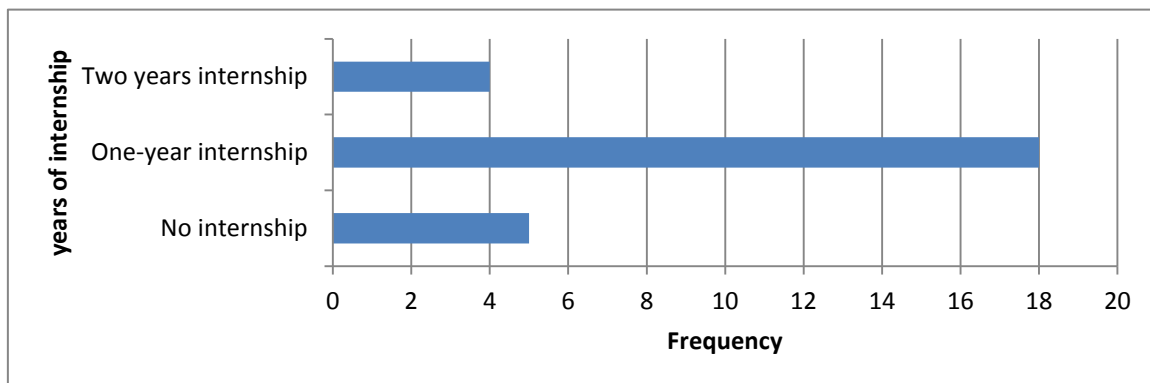


Figure 5.6: Years of post-graduation internship

The majority (66.7%) of experts believe that the internship should be a year. An expert further stated that the internship should be carried out in rural government hospitals.

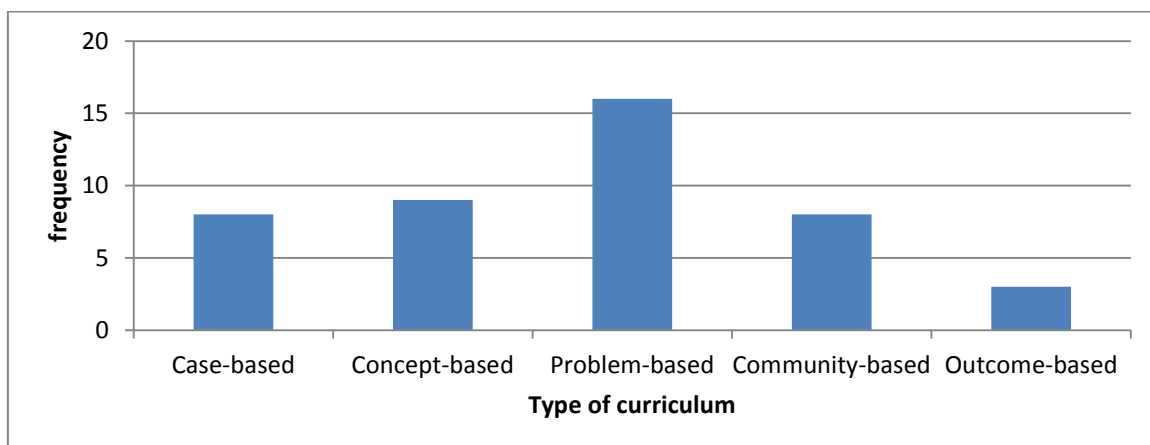


Figure 5.7: Type of curriculum preferred by experts. [Note: the sum of the values is more than 27 as experts were allowed to choose more than one curriculum type]

The majority (59.3%) of the experts believe problem-based learning is the most efficient way of implementing this programme. They also believe that problem-based learning alone cannot help the students achieve all the knowledge, skills and attitudes they need, therefore, a combination of teaching methods, especially problem-based learning, case-

based learning and community-based learning will be most effective for this programme. The literature shows that a concept-based curriculum gives the student the opportunity to acquire all the advantages of the rest of the curriculum types included in this question. The concept-based curriculum also allows for a constructivist (concept-based and case-based) approach, which was favoured by most of the participants. The researcher rephrased this question in Phase Four.

5.4.3.2 Section 5: Structure of Curriculum Content

A conventional content analysis procedure was used to analyse the content of the ACHNP programme provided by the expert group. In conventional content analysis, the codes and themes are derived from the content of the text data (Hsieh & Shannon, 2005), therefore, the process adheres to a naturalistic enquiry paradigm, which seeks to analyse data inductively (Tavakol & Zeinaloo, 2004).

In this study, the topics provided by the expert group were examined, categorised and then coded. The codes were derived from the content of the text (topics) provided and are, therefore, conventional content analytic in nature. The researcher applied the content analysis process for observational text data in Graneheim & Lundman (2004), grouping the topics into meaning unit, then to condensed meaning unit, then interpreted the underlying meaning of the condensed meaning unit by defining the condensed meaning unit, formulated sub-themes and grouped sub-themes into themes (Graneheim & Lundman, 2004).

A total of 570 topics were recommended by the expert team under the six domains. Similar topics from the recommendations were merged together, resulting in 260 topics under the domains (Table 5.3).

Table 5.3: Topics recommended by the expert group under the six domains.

Domain	Description	No. of topics recommended	No. of topics after merging
A	Leadership Management and Administration	106	40
B	Quality Practice	92	36
C	Ethico-legal Practice and Professionalism	67	38
D	Education and Research	100	37
E	Advanced Nursing Practice	107	69
F	Values and Attitudes	98	40
TOTAL		570	260

As described in Chapter 3, the content conventional analysis process for observational text data in Graneheim & Lundman (2004) was applied by grouping the topics (meaning units) into condensed meaning units, then interpreting (by defining) the underlying meaning of the condensed meaning units, formulating into sub-themes (naming the condensed meaning units) and grouping similar or related sub-themes into themes (Graneheim & Lundman, 2004).

The 260 topics (meaning units) were printed on hard cards (for easy handling), examined thoroughly and grouped into 25 condensed meaning units (cluster of related topics). The condensed meaning units were then identified with a name (sub-theme) which was then defined. The 25 sub-themes were further grouped under five themes namely: essential APN skills, system thinking, evidence-based practice, education, and Advanced Nursing Practice (Table 5.4).

Table 5.4: Conventional Content Analysis (Content of the Advanced Child Health Nurse Practitioner programme)

No.	Condensed Meaning Unit	Defining the Condensed Meaning Unit	Sub-Themes	Themes
1.	Information Communication Technology, Interprofessional Communication, Intraprofessional communication, Interpersonal Communication	Communication is the ability to acquire and apply telephone skills effectively, presentation skills, critiquing, motivational and supporting skills, persuading and negotiating, gathering information, listening (showing empathy) and body language skills (Kent University, 2017).	Communication	ESSENTIAL ACHNP SKILLS
2.	Nurse-patient relationship, Interpersonal relationship, Interdisciplinary team, Therapeutic relationship	A goal oriented helping relationship in which there is a mutual understanding between the nurse and the patient for the nurse to assist in the fulfilment of physical, psychological, spiritual and emotional needs based on the trust, respect, faith, hope and sensitivity to the nurse's self and the patient personality. (Perraud et al., 2006; Pullen & Mathias, 2010; Wright, 2010)	Therapeutic Relationship	
3.	Professional issues in nursing, Mentoring, Nursing Theories, Record keeping, Career paths of ACHNP	Professionalism is defined as the act of acquiring the values system of the nursing profession and making part of the nurse's practice lifestyle (Poulsen et al., 2012; Armstrong, Bhengu, et al., 2013; Karimi et al., 2014)	Professional Practice	
4.	Nursing ethics, Ethical dilemma, Ethical decision making, Moral reasoning, Patient-Centred Care, Cultural Competence	This represents the characteristic culture and values of nursing, which the Advanced Child Health Nurse Practitioner needs to assimilate during training and exhibit in practice., and cover all issues regarding autonomy (respect for persons), beneficence (doing good), non-maleficence (doing no harm), justice (fairness), veracity (telling the truth) and fidelity (remaining faithful to one's commitment) (National Commission on Correctional Health Care, 2017).	Ethos of Advanced Child Health Nursing Practice	
5.	Children's Rights, Patients' Right Charter, Batho Pele Principle, Child Advocacy	Any activities aimed at defending and protecting the right of the child to quality healthcare and at providing a conducive environment for a child to achieve utmost health as a child may not be aware of his or her right nor have the capacity to protect and defend him or herself (Armstrong et al. 2013 pp 277)	Child Advocacy	
6.	Critical thinking, Decision making, Problem solving	Critical thinking is skilful and responsible thinking in which one analyses argument and makes inferences, using inductive and deductive reasoning, seeking all claims to be backed by evidence and making decision or solving problems within a specific context (Lai, 2011; Boso & Gross, 2015).	Critical Thinking and Problem Solving Skills	

No.	Condensed Meaning Unit	Defining the Condensed Meaning Unit	Sub-Themes	Themes
7.	Leadership in Nursing, Nursing administration, Nursing management, Health systems, Organizational structure, Healthcare reforms, Job evaluation, Governance, Population and health, Delegation and supervision, Health economics, Human resource management, Physical resource management	A health system is defined as the interconnection of people, institutions and resources, with the primary aim of improving the health of the people served as well as making sure they are not overwhelmed with the cost of care (World Health Organization, 2011).	Health System	SYSTEMS THINKING
8.	Quality audit, Quality control, Quality Improvement, Total Quality Management	Quality improvement is defined as the persistent effort, by all stakeholders of healthcare (clients, health team, academia and government), to make alterations that will lead to improvement in the health outcomes of patients, learning of students and competence of health professionals (Batalden & Davidoff, 2007; Wong et al., 2010).	Quality Improvement	
9.	CPD, Development of CPD programmes	Continuous professional development is lifelong learning that a professional engages in post professional registration, with the primary purpose of keeping up-to-date with current best-practices, in order to provide quality nursing services to clients (Davids, 2006; Cleary et al., 2011; Herbert & Rainford, 2014).	Continuous Professional Development	
10.	Acts relating to ACHNP, Legal issues in ACHNP, Healthcare Policy	Legal issues in nursing can be divided into four elements, which must be provided in case of medical litigation. These are: duty (the laid down relationship between the client and the nurse), breach of duty (failure to provide reasonable and justifiable healthcare service to the client under the particular condition), damages (injuries caused as a result of actions or inactions on the part of the nurse) and causation (correlation between breach of duty and injury) (Armstrong, Bhengu, et al., 2013; National Centre of Continuing Education, 2017). Legal issues in nursing refers to the state/federal laws, nursing licensure, scopes of practice and standards of care expected from the nurse by the public (Armstrong, Bhengu, et al., 2013; National Centre of Continuing Education, 2017; National Commission on Correctional Health Care, 2017).	Legal Issues in Advanced Child Health Nursing Practice	
11.	Scope of Practice, Professional codes of conduct	Scope of practice refers to what a nurse can do or cannot do based on the legal boundaries set by professional nursing regulatory bodies (Armstrong et al. 2013, pp 93)	Scope of Practice	
12.	Research process, Qualitative research methods, Quantitative research methods, Research ethics	'Systematic inquiry designed to develop knowledge about issues of importance to nurses, including nursing practice, nursing education, and nursing administration' (Polit-O'Hara & Beck, 2006; 2006 p 4).	Nursing Research Methods	EVIDENCE-BASED PRACTICE
	Development of Research Proposal, Conducting Research, Disseminating research finding	This is to conceptualise, collect data, analyse data and write research report.	Conducting Nursing Research	

No.	Condensed Meaning Unit	Defining the Condensed Meaning Unit	Sub-Themes	Themes
13.	Systematic review, Protocol and standard development, Using Protocol and standard	This is to retrieve relevant nursing research, synthesize it into nursing protocol or standard for clinical application.	Utilizing Nursing Research	EDUCATION
14.	Education Psychology, Teaching and assessment methods, Curriculum development	This consists of all the knowledge, skills and attitudes needed by the Advanced Child Health Nurse Practitioner to teach both students and clients in classroom and clinical settings	Education methods	
15.	Academic teaching	The engagement of the Nurse Practitioner in teaching students in the classroom and clinical settings.	Academic teaching	
16.	Child and family education	The engagement of the Advanced Child Health Nurse Practitioner in teaching clients (child and family) clinical settings	Family health education	
17.	Features of APN, Roles of ANP, Emerging Trends in APN	All fundamental issues relating to Advanced Nursing Practice and being an Advanced Nursing Practitioner is termed the foundation of Advanced Practice Nursing.	Foundation of Advanced Practice Nursing	ADVANCED CHILD NURSING PRACTICE
18.	Human Anatomy, Human Physiology, Medical Psychology, Medical Sociology, Pharmacology, Pathophysiology	All the basic applied sciences that form the foundation on which Advanced Nursing Practice is based are termed Applied Health Sciences.	Applied Health Sciences	
19.	Physical Assessment, Laboratory investigations, Radiological Investigations, Medical Diagnosis	The necessary knowledge, skills and attitudes needed to diagnose child disorders early accurately is termed Patient Assessment and Decision Making.	Patient Assessment and Decision Making	
20.	Prescription, Dispensing, Medication safety	The necessary knowledge, skills and attitudes needed for the Advanced Child Health Nurse Practitioner to prescribe accurate medical and non-medical treatment for a particular diagnosis made is termed prescription.	Treatment Selection	
21.	Basic Life support, Paediatric emergencies	Life threatening childhood phenomena that require prompt attention are termed paediatric emergencies.	Acute and Paediatric Emergencies	
22.	Advanced Paediatric Nursing, Common Childhood diseases	The aspects of child health nursing knowledge, skills and attitudes beyond that of registered paediatric nurses that are necessary for the practice of Advanced Child health Nurse Practitioners is termed the sick child.	The Sick Child	
23.	Family System, Family health	The child's immediate environment and carers is the family. The Advanced Health Nurse Practitioner needs to understand the family system within which the child is being raised, and how family practices could impact the child's health.	Family Health Nursing	

No.	Condensed Meaning Unit	Defining the Condensed Meaning Unit	Sub-Themes	Themes
24.	IMCI, NIMART, Immunization, The Vulnerable child	International and national child health programmes that are adopted by national or provincial governments to improve child health are termed international and local child healthcare programmes.	Local and International Child Healthcare Programmes	
25.	Community Assessment, Community Diagnosis, Community Health Outreach, Design, Implementation and Evaluation of community Health projects	All the activities undertaken by the CHNP to promote child health within the community is termed community Outreach. The child lives in a family that lives in a community. Any healthcare challenges faced by the community will affect the health of the child who is the most vulnerable in society.	Community Outreach	

5.4.3.2.1 Theme 1: Essential Skills for Advanced Nursing Practice

This forms a collection of sub-themes (modules) that cover necessary skills needed for the Advanced Practice Nurse to function effectively. These skills include communication skills; therapeutic relationships, critical thinking, problem solving skills and clinical skills.

5.4.3.2.1.1 Communication Skills

Communication skills consist of the ability to acquire and apply effectively telephonic communication, presentation of information, critiquing, motivating and supporting, persuading and negotiating, gathering information, listening (showing empathy) and body language skills (Kent University, 2017).

5.4.3.2.1.2 Therapeutic Relationship

A goal oriented helping relationship is one in which there is a mutual understanding between the nurse and the patient for the nurse to assist in the fulfilment of physical, psychological, spiritual and emotional needs of the patient, based on the trust, respect, faith, hope and sensitivity to the nurse's self and the patient personality (Perraud et al., 2006; Pullen & Mathias, 2010; Wright, 2010).

5.4.3.2.1.3 Critical Thinking

Critical thinking is skilful and responsible thinking in which one analyses argument and makes inferences, using inductive and deductive reasoning, seeking all claims to be backed by evidence and making decisions or solving problems within a specific context (Lai, 2011; Boso & Gross, 2015).

5.4.3.2.1.4 Ethos of Advanced Nursing Practice

This represents the characteristic culture and values of nursing, which the Advanced Child Health Nurse Practitioner needs to assimilate during training and exhibit in practice, and covers all issues regarding autonomy (respect for persons), beneficence (doing good), non-maleficence (doing no harm), justice (fairness), veracity (telling the truth) and fidelity (remaining faithful to one's commitment) (National Commission on Correctional Health Care, 2017).

5.4.3.2.1.5 Child Advocacy

All activities aimed at defending and protecting the right of the child to quality healthcare and to provide a conducive environment for the child to achieve utmost health, as the child may

not be aware of his or her right nor have the capacity to protect and defend him or herself (Armstrong et al. 2013 pp 277).

5.4.3.2.1.6 Professional Practice

Professionalism is defined as the act of acquiring the values system of the nursing profession and making it part of the nurse's practice lifestyle (Poulsen et al., 2012; Armstrong, Bhengu, et al., 2013; Karimi et al., 2014).

5.4.3.2.2 Theme 2: Health Systems Thinking

Systems thinking refers to the understanding of a system in terms of the linkages between its component parts and how the component parts interact among themselves to produce a synergistic function/effect (Arnold & Wade, 2015; Hoffenson & Söderberg, 2015; The Institute for Systemic Leadership, 2017).

5.4.3.2.2.1 Health System

Health system is defined as the interconnection of people, institutions and resources, with the primary aim of improving the health of the people served as well as making sure they are not overwhelmed with the cost of care (World Health Organization, 2011). This consists of Leadership in nursing, Nursing administration, Nursing management, Organizational structure, Healthcare reforms, Job evaluation, Governance, Delegation and supervision, Health economics, Human resource management, Physical resource management.

5.4.3.2.2.2 Quality Improvement

Quality improvement is defined as the persistent effort by all stakeholders of healthcare (clients, health team, academia and government) to make alterations that will lead to improvement in the health outcomes of patients, learning of students and competence of health professionals (Batalden & Davidoff, 2007; Wong et al., 2010).

5.4.3.2.2.3 Continuous Professional Development

Continuous professional development is lifelong learning that a professional undertakes with the primary purpose of keeping up-to-date with current best-practices in order to provide quality nursing services to clients (Davids, 2006; Cleary et al., 2011; Herbert & Rainford, 2014).

5.4.3.2.2.4 Legal Issues in Advanced Nursing Practice

Legal issues in nursing can be divided into four elements, which must be provided in case of medical litigation. These are: duty (the laid down relationship between the client and the

nurse), breach of duty (failure to provide reasonable and justifiable healthcare service to the client under the particular condition), damages (injuries caused as a result of actions or inactions on the part of the nurse) and causation (correlation between breach of duty and injury) (Armstrong, Bhengu, et al., 2013; National Centre of Continuing Education, 2017). Legal issues in nursing refers to state/federal laws, nursing licensure, scopes of practice and standards of care expected from the nurse by the public (Armstrong, Bhengu, et al., 2013; National Centre of Continuing Education, 2017; National Commission on Correctional Health Care, 2017).

5.4.3.2.2.5 Scope of Practice

Scope of practice refers to what a nurse can do or cannot do, based on the legal boundaries set by professional nursing regulatory bodies (Armstrong et al. 2013,pp 93).

5.4.3.2.3 Theme 3: Evidence-Based Practice

This involves the integration of clinical expertise and best research evidence with patient values to provide quality and cost-effective care for the patients.

5.4.3.2.3.1 Nursing Research Methods

Research is a ‘systematic inquiry designed to develop knowledge about issues of importance to nurses, including nursing practice, nursing education, and nursing administration’ (Polit and Beck 2006 p 4).

5.4.3.2.3.2 Conducting Nursing Research Project

This is to conceptualise, collect data, analyse data and write research report.

5.4.3.2.3.3 Utilizing Nursing Research

The translation of relevant and conceptual nursing research into nursing education and practice.

5.4.3.2.4 Theme 4: Education

The theme, education describes the epistemological perspective, teaching within the university and client education as described below.

5.4.3.2.4.1 Epistemology

This consists of all the knowledge, skills and attitudes needed by the Advanced Child Health Nurse Practitioner to teach both students and clients in classroom and clinical settings.

5.4.3.2.4.2 Academic Teaching

The engagement of the Child Health Nurse Practitioner in teaching students in classroom and clinical settings.

5.4.3.2.4.3 Client Education

The engagement of the Child Health Nurse Practitioner in teaching clients (child and family) in clinical settings.

5.4.3.2.5 Theme 5: Advanced Nursing Practice

Advanced nursing practice consists of the fundamental issues relating to APN, the applied sciences that the APN need to learn, patient assessment and decision making, selection of treatment, management of acute illnesses and paediatric emergencies, family health nursing, an understanding of local and international policies and programmes that affect children and community outreach (Table 5.4).

5.4.3.2.5.1 Foundations of Advanced Nursing Practice

All fundamental issues relating to Advanced Nursing Practice and being an Advanced Nursing Practitioner is termed the foundation of Advanced Practice Nursing (Table 5.4).

5.4.3.2.5.2 Applied Health Sciences

All the basic applied sciences that form the foundation on which Advanced Nursing Practice is based are termed Applied Health Sciences (Table 5.4).

5.4.3.2.5.3 Patient Assessment and Decision making

The necessary knowledge, skills and attitudes needed to diagnose child disorders early accurately is termed Patient Assessment and Decision Making (Table 5.4).

5.4.3.2.5.4 Treatment Selection

The necessary knowledge, skills and attitudes needed for the Advanced Child Health Nurse Practitioner to prescribe accurate medical and non-medical treatment for a particular diagnosis made is termed prescription (Table 5.4).

5.4.3.2.5.5 Acute Illness and Paediatric Emergencies

Acute illness refers to childhood illnesses or diseases with rapid onset and sharp deterioration in the health status of the child. Paediatric emergencies are life-threatening childhood phenomena that require prompt attention (Table 5.4).

5.4.3.2.5.6 The Sick Child

The aspects of child health nursing knowledge, skills and attitudes beyond that of registered paediatric nurse that are necessary for the management of the sick child by the Child Health Nurse Practitioner (Table 5.4).

5.4.3.2.5.7 Family Health Nursing

The child's significant others and carers represent the family. The Advanced Health Nurse Practitioner needs to understand the family system within which a child is being raised and how the family practices could impact a child's health (Table 5.4).

5.4.3.2.5.8 Local and International Child Healthcare Programmes

International and national child health programmes that are adopted by national or provincial governments to improve child health are termed international and local child healthcare programmes (Table 5.4)..

5.4.3.2.5.9 Community Outreach

All the activities undertaken by a CHNP to promote child health within the community is termed community outreach. A child lives in a family that lives in a community. Any healthcare challenges faced by the community will affect the health of the child who is the most vulnerable in society (Table 5.4)..

5.4.3.2.6 Discussion

The programme is conceptualised into five courses, each with modules, for example, theme one represents the course Essential skills for Advanced Practice Nursing with six modules. In all there will be 25 modules across the five courses.

The Advanced Practice Nurse needs skills that will enable her/him to practice autonomously and to be a patient advocate in the community. These skills are well represented in the first module. The practitioner needs to learn how to communicate with the child, family, health team and the community at large. Communication enhances the relationship that the practitioner builds with all the stakeholders in her/his practice, so as to make it therapeutic. He/she needs to be able to think critically and solve patient, family and community problems relating to child health and be able to defend and protect the health rights of the child professionally.

The first four themes are seen as courses that are necessary for Advanced Practice Nurse in any speciality, while the fifth theme is very specific to child health. The core courses of the APN programme in sub-Saharan Africa include: Essential skills for APN; Health Systems Thinking; Evidence Based Practice; and Education. The Advanced Child Health Nurse Practitioner specific course is named ‘Advanced Child Health Nursing’.

5.4.3.3 Section 7 & 8: Teaching and Assessment Methods

5.4.3.3.1 Teaching Methods

The experts stated the modes of teaching per subject they proposed to be taught/learnt under each domain. For the 570 topics proposed by the expert group, 662 teaching methods were stated and 527 assessment methods advised to be used. The distribution of the teaching and assessment methods under the domains are illustrated in **Figure 5.8** below.

Lecture Method: Lecture as a teaching method involves the teaching situation in which a teacher transmits information to a large or small group of students. It involves mostly the teacher delivering content with little or no input from the student body.

Interactive/Small Group Technique: This type of teaching involves the students. The lecturer engages the students in discussions, brainstorming, and assessment of group presentations.

Experiential Learning Techniques: This involves hands on teaching and learning situations in which the student plays with simulated situations and real-life patients to build them up for clinical placement or practice.

Self-Study: This is the teaching situation in which the students are given a portion of the content to study on themselves.

Blended Learning: Blended learning represents the situation in which teaching and learning is implemented both on-campus and off-campus. The students learn through various online or electronic learning platforms.

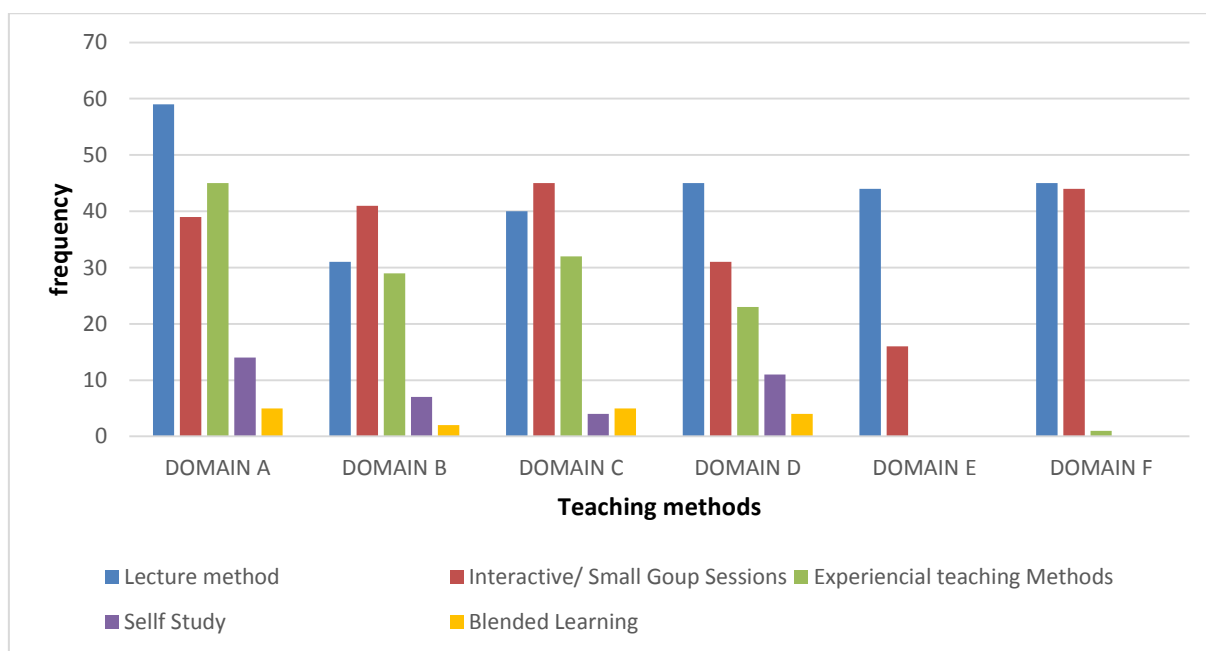


Figure 5.8: Teaching methods proposed by the experts

5.4.3.3.2 Assessment Methods

Test/ Examination: This includes written class tests and examinations that students take throughout the year as part of either formative or summative examinations.

Take Home Assignment: This involves the assessment process in which students are given assignments to take home and other projects to work on in their own time.

Clinical Examination: This is any assessment done to elicit the competence of the students for a particular skills and attitudes they learnt or were taught in the clinical setting.

Viva voce: This is the process in which the student is assessed through oral presentations. Oral tests, case presentations, group presentations and seminars are examples of these assessment methods.

Non-grading Assignments: These are forms of assignments and other assessments done, but not graded. These can be done for various purposes.

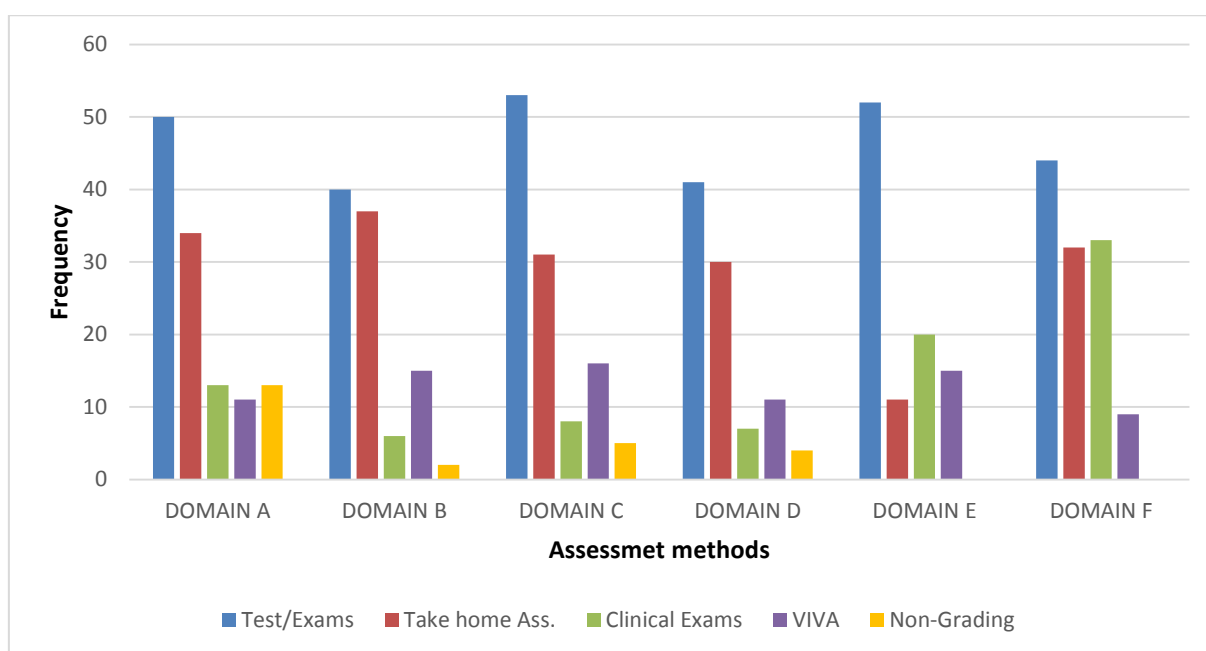


Figure 5.9: Assessment methods proposed by the experts

5.5 PHASE 4: SECTION 6 (RESOURCES NEEDED FOR THE CHNP PROGRAMME)

This was the last phase of the Delphi survey. The researcher collected expert views on the resources needed for the successful implementation of the CHNP programme in sub-Saharan Africa. This completed the last element of the essential components of a curriculum framework outlined by Stabback (2007).

5.5.1 Expert Group

All the twenty-seven experts who completed Phase Two and Three also completed the questionnaire in this phase.

5.5.2 Data Collection

The questionnaire was developed through a mini literature review on resources needed for a successful academic programme. The questionnaire was reviewed by the two experts for content and face validity. Corrections were made and the questionnaire was transferred onto the Redcap online survey platform (Annexure E). It was then pretested by 5 masters of nursing students from sub-Saharan Africa.

5.5.3 Results

The findings from this phase are presented below.

5.5.3.1 Type of curriculum, academic hours per week and number of clinical practice hours

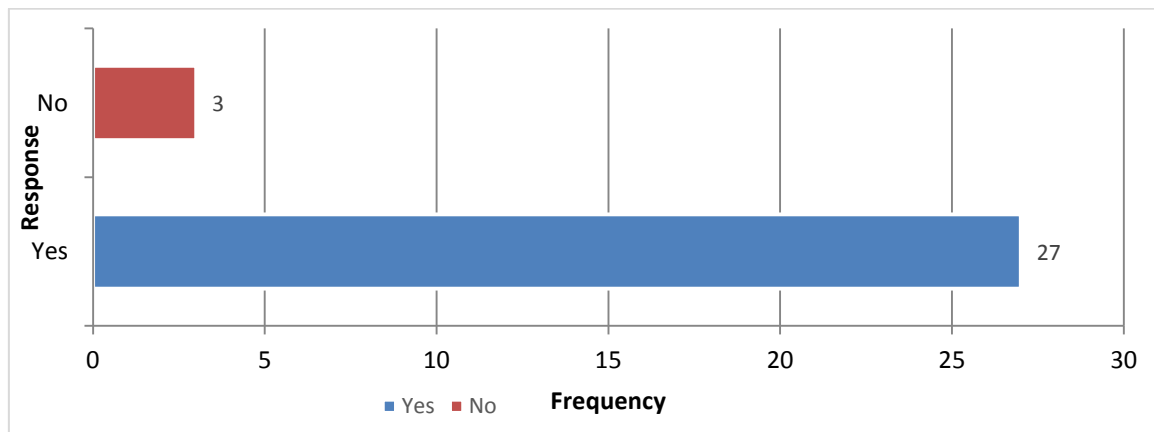


Figure 5.10: Should the curriculum be concept-based?

As a follow-up on the type of curriculum in phase 3, the experts were asked if the curriculum should be concept-based or not. The majority (88.9%) said 'yes' and the rest said 'no'.

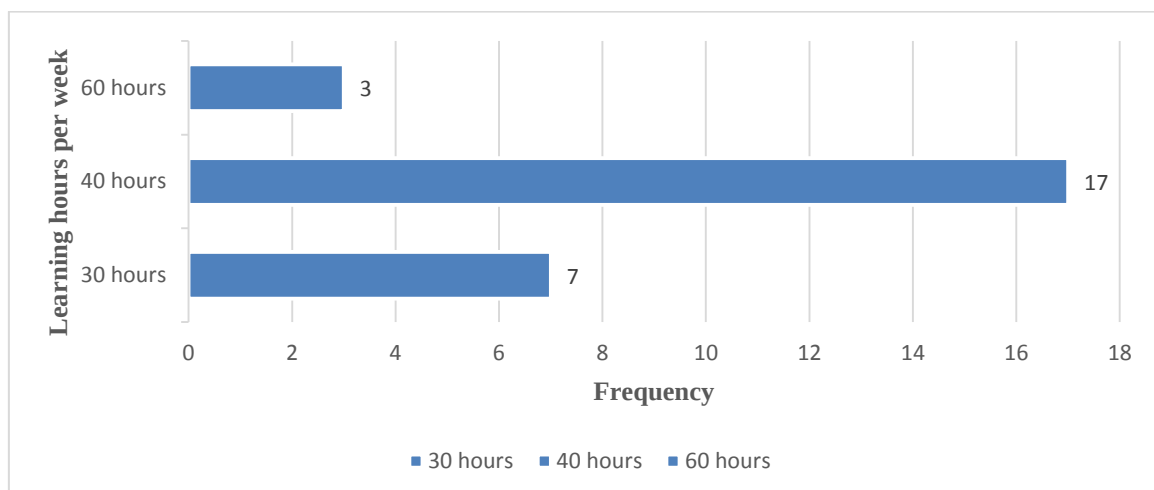


Figure 5.11: Number of learning hours per school week

The experts were asked, “how many hours per academic week should students be involved in school work?” as a follow-up on phase 3. The majority (63.0%) selected 40-hours per week.

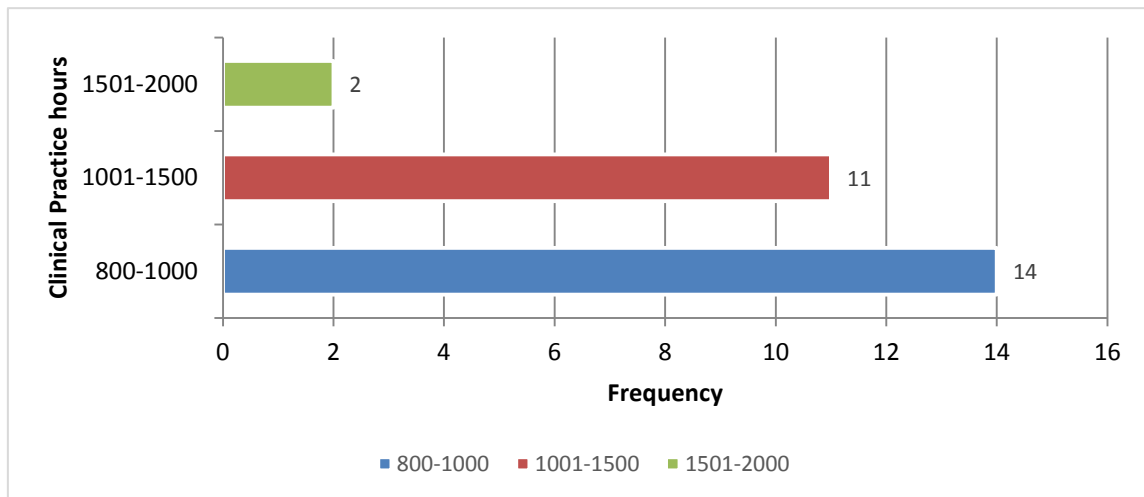


Figure 5.12: Number of Clinical practice hours for the 2-years CHNP programme

The experts were asked to choose how many clinical hours the CHNP should be required to complete for the two years. A slim majority (51.95%) selected 800-1000 hours.

5.5.3.2 Student Prerequisites

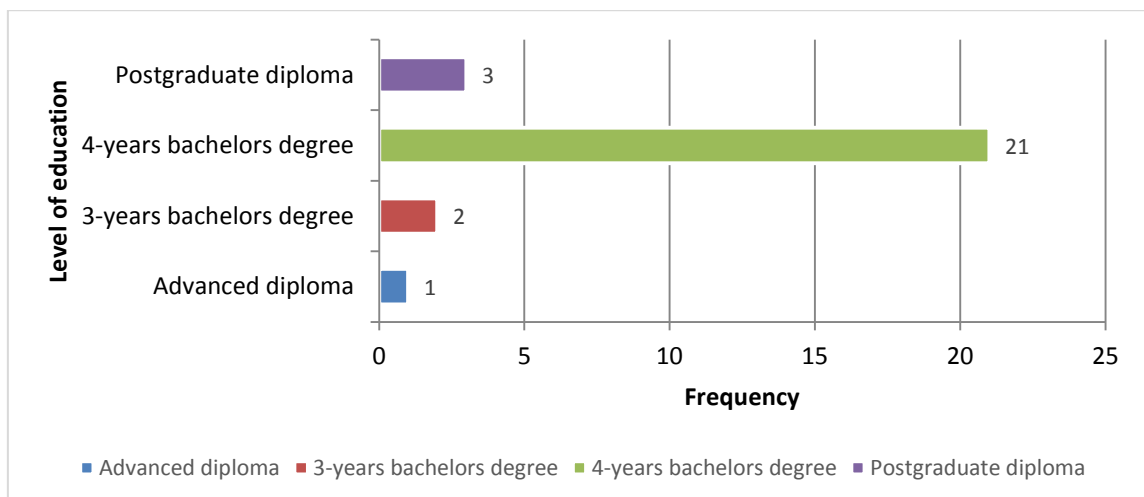


Figure 5.13: Minimum Entry Qualification for the CHNP programme

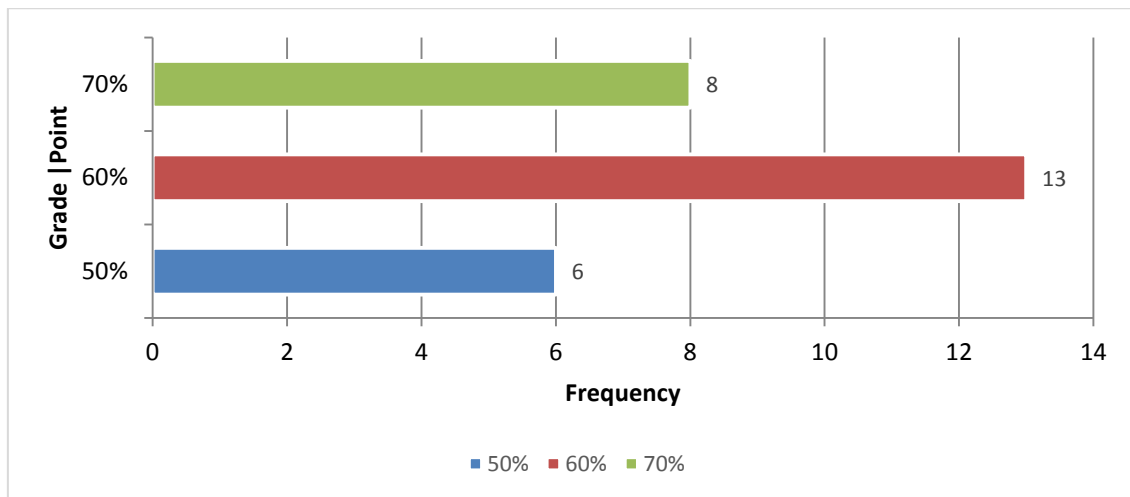


Figure 5.14: Minimum Entry Grade Point Average

The majority (77.8%) of the experts chose 4-year Bachelor’s in Nursing as a minimum entry qualification (Figure 5.13). A simple majority (48.1%) selected 60% as the minimum entry Grade Point Average an applicant must obtained in their bachelor's programme to be eligible for admission into the Advanced Practice Nursing Programme (Figure 5.14).

The experts who commented in this section stated that it is important to select the best students for the programme, so as to allow candidates with sound academic background to enter the programme. An expert also stated that the candidates without a four year bachelor’s should write an entrance examination to be eligible.

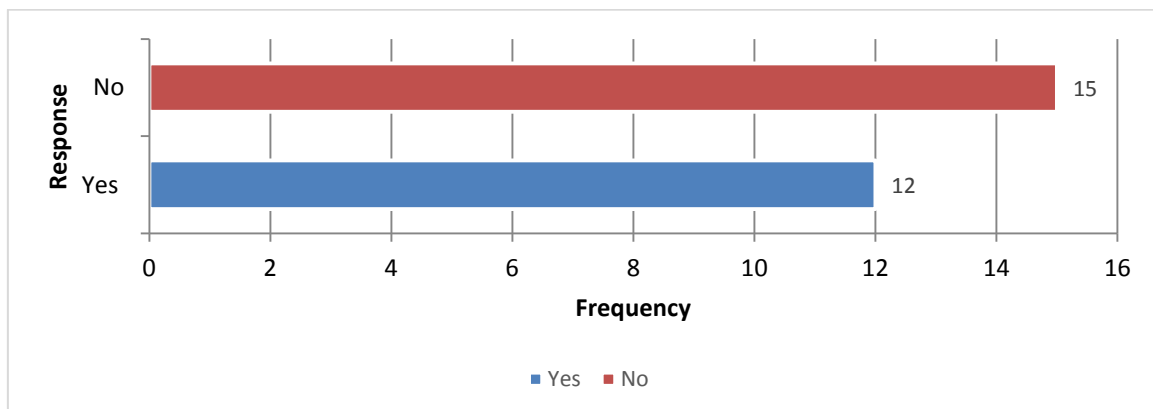


Figure 5.15: Challenge examination as an entry requirement

The majority (55.6%) of the experts believe that challenge examination is not the best way to recruit students into the CHNP programme. Three experts who did not agree with challenge exams stated that:

“If the minimum qualification is a BSc with a specific grade point average then no need for challenge exam. The standards would be set by those preceding factors. There are too many

extraneous variables that cannot be controlled that influence performance on challenge exam.”

“All those who are enrolling into the programme must have similar qualities, because having several ways of gaining entry might end up compromising the quality of the APN programme.”

“Once an applicant has 60% or more points in his/her CGPA and has had one year’s experience, this may not be relevant. Examination should, however, be conducted for applicants with borderline CGPA (e.g. CGPA 59). A formal interview to assess all applicant’s general knowledge and passion for the programme would be beneficial.”

Two experts who are in support of challenge exams stated that:

“This exam can help determine the applicant's current potential/knowledge/skill”

“In order to enhance the competitiveness”

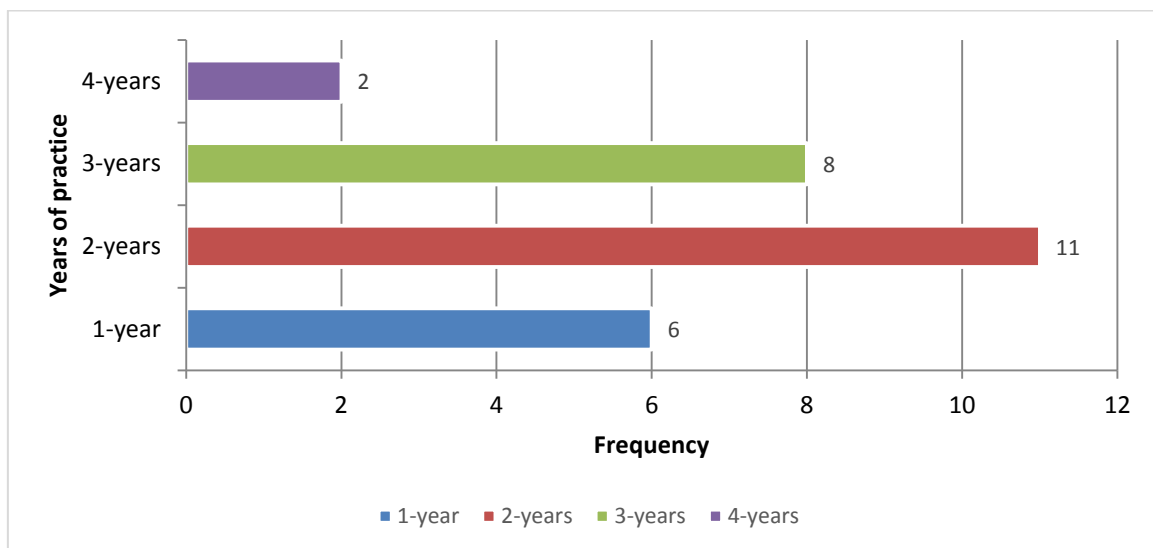


Figure 5.16: Prior Clinical Practice Requirement

A simple majority (40.7%) of the experts preferred two year’s post registration clinical experience as a prerequisite to the CHNP programme. One expert stated that the one-year compulsory post registration clinical practice for nurses as part of their undergraduate training and licensure should not be counted in the two year’s clinical practice requirement.

One expert (N23) stated that:

“According to Patricia Benner, it takes 2-3 years to become a competent practitioner. In the first year of practice a person would be in the transitioning phase and still searching for her or his career pathway but in the second year that decision would have been made and by the end of the two years that person would have acquired enough knowledge to pursue her or his career choice.” (Benner, 1982).

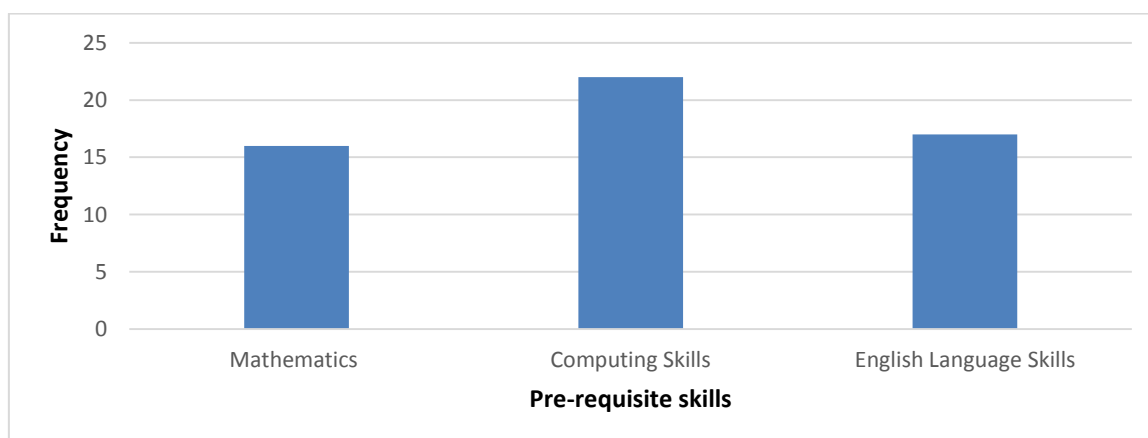


Figure 5.17: Pre-requisite skills

Mathematics (16, 57.1%), Computing skills (22, 78.6%), and English Language skills (17, 60.7%) were rated highly as prerequisite skills for the candidates.

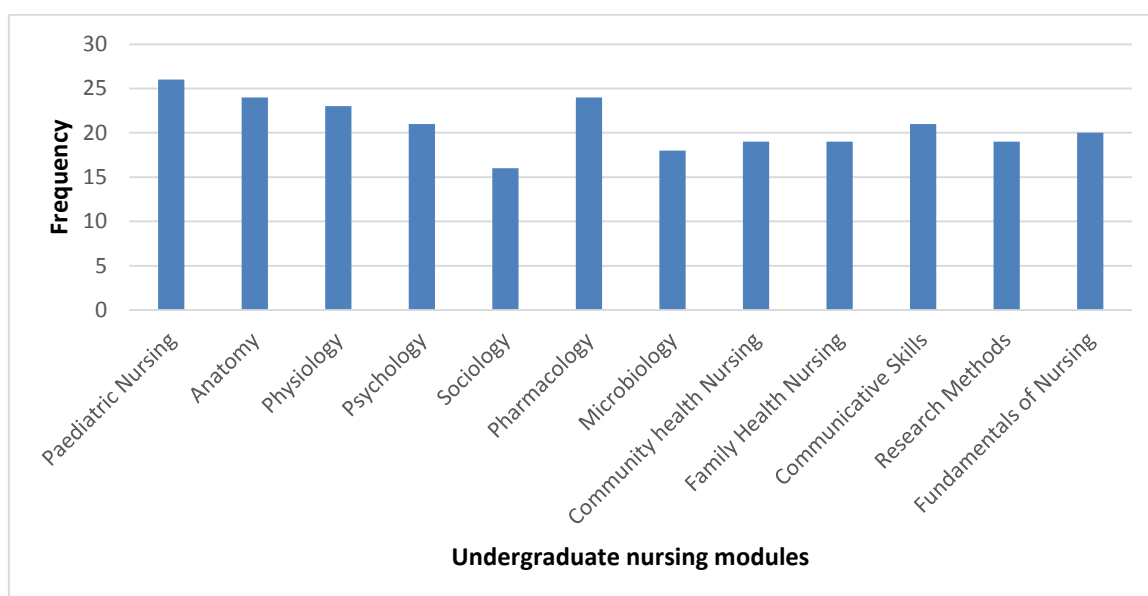


Figure 5.18: Prerequisite Undergraduate course/modules

Paediatric Nursing (26, 92.9%), Anatomy (24, 85.7%), Physiology (23, 82.1%), Psychology (21, 75.0%), Sociology (16, 57.1%), Pharmacology (24, 85.7%), Microbiology (18, 64.3%), Community health Nursing (19, 67.9%), Family health Nursing (19, 67.9%), Communication skills (21, 75.0%), Research Methods (19, 67.9%) and Fundamentals of Nursing (20, 71.4%)

were rated by the experts as very important undergraduate models that the applicants need to have in order to be admitted into the CHNP programme. The experts also stated other modules and skills that are essential for the candidates before enrolment. These include: writing skills, statistics, leadership skills, nutrition and dietetics, medical and surgical nursing, and management skills.

The expert group prescribed laptop computer (25, 89.3%), prescribed textbooks (25, 89.3%) and Diagnostic set (21, 75.0%) as major personal resources that students need to have to facilitate their learning in the CHNP programme. Other resources that are necessary are sufficient funds for transport and living expenditure, internet access and smart tablets.

5.5.3.3 Staff Resources Needed

What should be the minimum qualification of a nursing lecturer/facilitator in this programme?

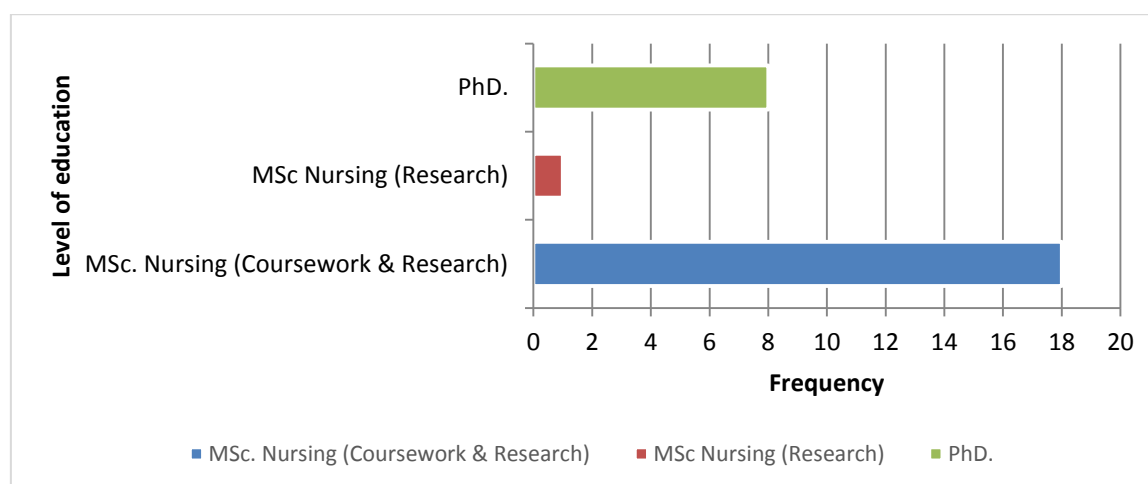


Figure 5.19: Minimum Nursing Lecturer Requirement for the CHNP programme

MSc Nursing by Coursework and Research Report (66.7%) was preferred over MSc Nursing (Research) (3.7%) and Ph.D. Nursing (29.6%) as the minimum qualification of a nursing lecturer/facilitator in this programme.

The experts believe that a PhD in a relevant field of nursing is ideal but the resource limitations in sub-Saharan Africa makes it unattainable in the present time, therefore, a master's with course work and research component is acceptable.

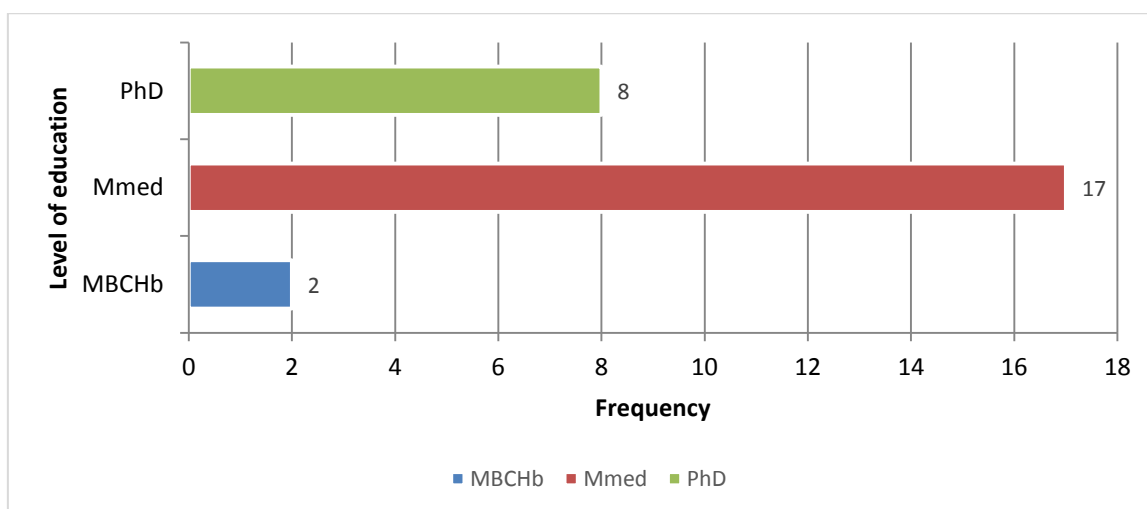


Figure 5.20: Minimum non-nursing lecturer qualification

Similar to that of nursing, the majority (63.0%) of the experts selected Master of Medicine (MMed) as the minimum qualification required by a non-nursing lecturer in the CHNP programme. Comments made by the experts on the minimum non-nursing lecturer requirement stipulated that a paediatrician with MMed qualification would be a great resource for lecturing the CHNP.

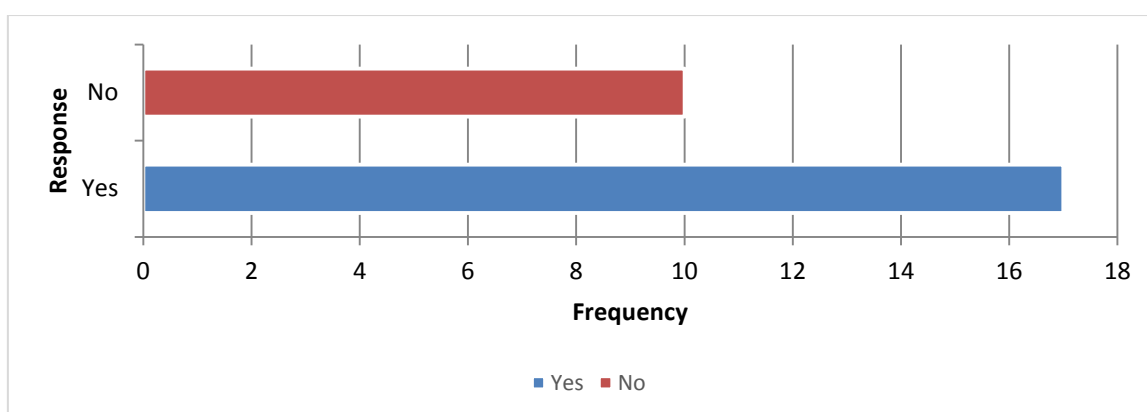


Figure 5.21: Teaching qualification

The majority (63.0%) of the experts believe that the lecturers of the CHNP programme need an education training to be able to function appropriately (Figure 5.21).

An expert in support of the education qualification as a prerequisite for lecturing in the CHNP programme stated that:

“Everyone can teach but it takes an educator to successfully run a training programme because of the knowledge regarding the psychology of education, testing and measurements, content levelling and the use of innovative methods of learning.”

One expert who thinks an education qualification is not necessary for lecturing in the CHNP programme stated that:

“No, because at master's level most of the work is done by students and the lecture's duty is to direct the students, which does not necessarily need a teaching qualification”

5.5.3.4 Physical Resources/Infrastructure Needed

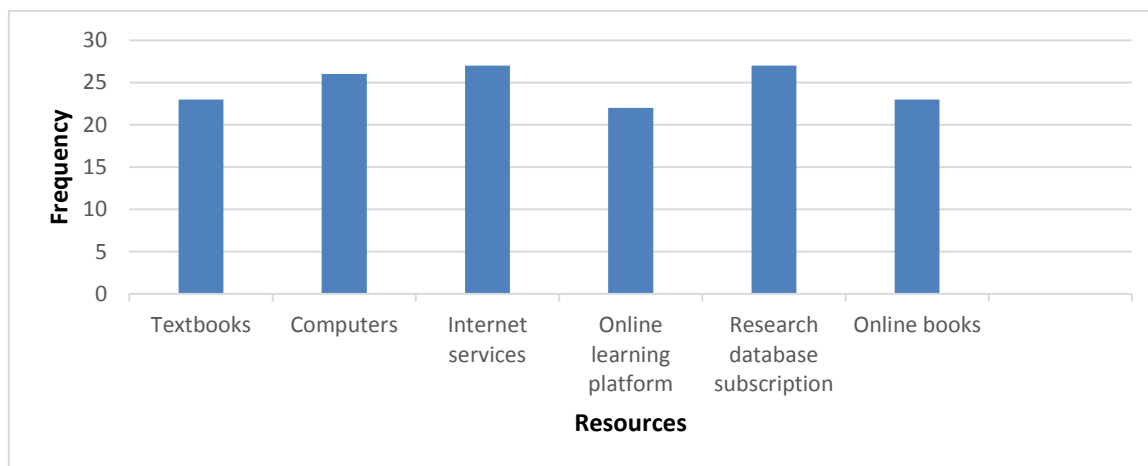


Figure 5.22: Library resources needed

Textbooks (23, 82.1%), computers (26, 92.9%), internet services (27, 96.4%), online learning platform (eg.Sakai) (22, 78.6%), subscription to research database (27, 96.4%), and online books (23, 82.1%) were rated highly as necessary library resources needed to implement the CHNP programme successfully.

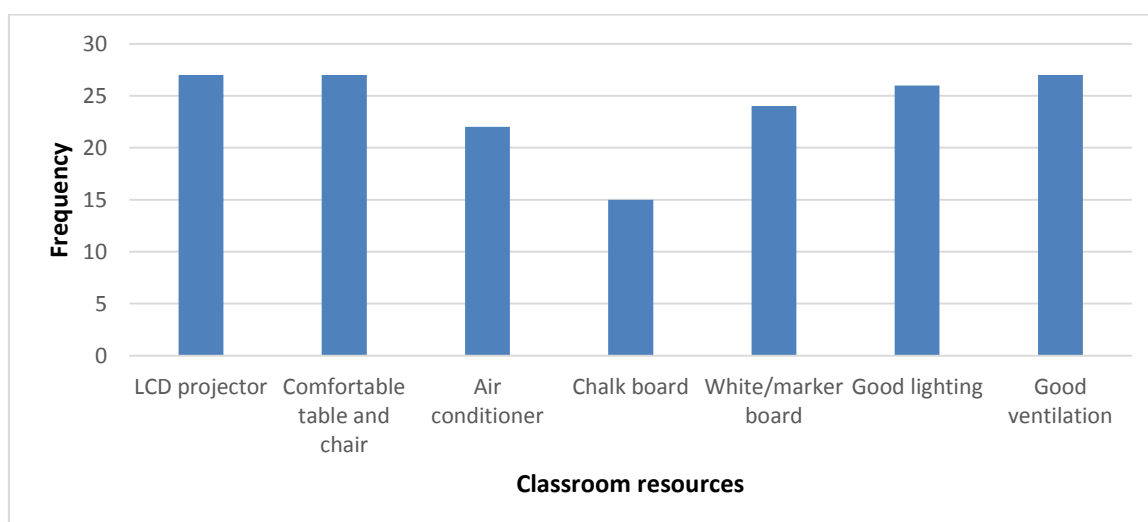


Figure 5.23: Classroom resources needed

An LCD projector (27, 100.0%), comfortable tables and chairs for students (27, 100%), air conditioning/heater/fan per class (22, 81.5%), chalkboard (15, 55.6%), white/marker board

(24, 88.9%), good lighting (26, 96.3%), and good ventilation (27, 100%) are deemed very important physical resources the institution needs to implement such a programme. Other resources stated by the experts include: clinical skills laboratory, cafeteria, video conferencing facility and discussion rooms.

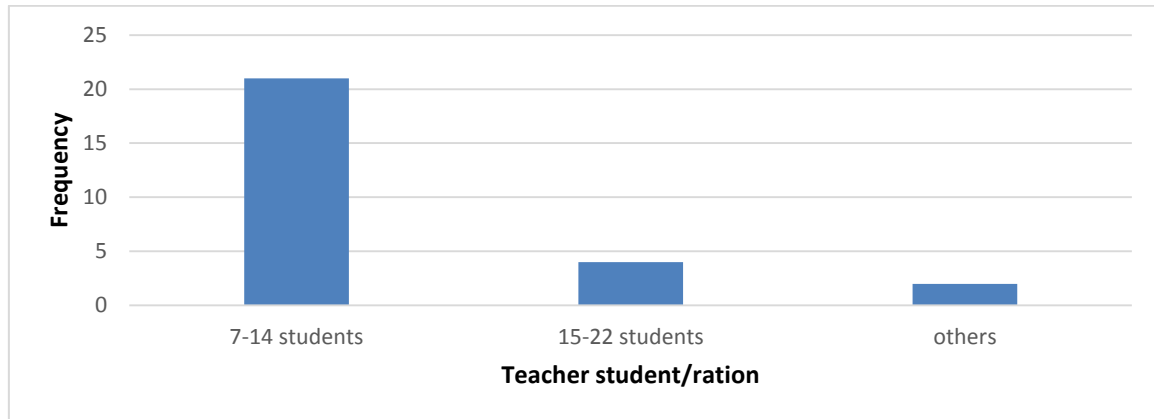


Figure 5.24: Teacher/student ratio

The majority (21, 77.8%) of experts preferred a teacher/student ratio of 1: (7-14).

5.5.3.5 Clinical Simulation

The experts recommended a simulation laboratory, clinical placement facilities, anatomical models, clinical mentors, high fidelity simulators, clinical supervisors, resuscitation equipment, diagnostic sets, personal protective equipment, and a qualified skills laboratory technician as the minimum requirements needed for clinical simulation in the CHNP programme.

5.6 CONCLUSION

This chapter presented the findings from the four phases of the Delphi. The phase one covered the consensus of the experts on the findings from the scoping review presented in Chapter 4. Phase two was a follow-up question on phase 1 in consensus were not reach. The phase three required that the experts provide list of topics, teaching and assessment methods for the CHNP. The last phase also require the experts to review resources needed for the introduction of the APN programme. The following chapter presents the development of concepts for the curriculum framework.

CHAPTER 6 : THE DEVELOPMENT OF CONCEPTS FOR THE CHILD HEALTH NURSE PRACTITIONER CURRICULUM FRAMEWORK

6.1 INTRODUCTION

The concept-based curriculum is preferred over content, outcome and standard-based curricula because of its ability to provoke critical thinking and problem-solving abilities in students with minimum content. It addresses the concerns of the overwhelming content of nursing curricula. As described in Chapter 3, a curriculum committee was formed to develop the concepts for the Child Health Nurse Practitioner curriculum framework.

6.2 CURRICULUM COMMITTEE

Five nursing curriculum experts, a paediatrician and a paediatric nurse were selected purposively, in addition to the researcher, to develop the concepts for the curriculum. The credentials of the curriculum committee are presented in Table 6.1 below.

Table 6.1 The curriculum development team

Expert	Highest academic qualification	Curriculum development skills
A	DCur in Nursing	Former member of South African Nursing Council, Senior Lecturer
B	PhD candidate (Nursing)	Lecturer, concept based curriculum team leader
C	Professor of Nursing,	Former head of three nursing departments, curriculum development and review team leader in three SSA countries
D	PhD Nursing	Former head of South African Nursing council, Provincial Chief Nursing officer
E	PhD Nursing	Head of an ultramodern multidisciplinary simulation laboratory
F	PhD candidate (Nursing)	Head of paediatric nursing in a department of nursing, consultant for Speciality Children's Hospital
G	MMed, African Paediatric Fellow, South Africa	Paediatrician, University Academic Hospital
H	PhD candidate (Nursing)	Principal researcher

6.3 CONCEPTS FOR THE CHILD HEALTH NURSE PRACTITIONER PROGRAMME

Two experts (A and B) met with the principal researcher to review the instructions for selecting concepts for the Child Health Nurse Practitioner curriculum developed by the researcher. The review was followed by selecting the concepts for the Child Health Nurse Practitioner programme.

At the first meeting, 22 concepts were identified. These concepts were refined, in a subsequent meeting, to 14 concepts as outlined in Table 6.2. The fourteen (14) concepts were developed and transferred into the Redcap online survey platform for the other experts (C, D, E, F, G) to analyse. The concept analysis questionnaire developed by the researcher using the components of concept analysis presented in Johnston (2017) was reviewed by experts A and B for face and content validity and then pretested with 5 masters in nursing education students (Annexure G). The concepts are presented in Table 6.2 below.

6.4 CONCEPT DEVELOPMENT

Concept development as described in this document consists of the definition, scope, attributes and criteria, theoretical links (if essential), context of the concept to Advanced Practice Nursing, exemplars and interrelated concepts (Johnston 2017).

In Giddens (2013), attributes and criteria, theoretical links and context to APN were replaced by risk factors, physiological processes and consequences, assessment, and clinical management in the development of health and illness concepts such as fluid electrolyte balance, acid base balance, thermoregulation. Risk factors, assessment and clinical management were added to scope, attributes and criteria, exemplars and interrelated concepts in the development of the concept 'Child mortality' in this study (Giddens, 2013).

6.4.1 Definition of attributes of a concept

- The **scope** of a concept delineates a continuum that outlines the range of the concept. The continuum could be from negative consequences of dysfunctional/impaired concept to benefits of a fully functional concept, for example, the concept of sexuality (Giddens, 2013). The scope of a concept could also be a range of biological characteristics associated with the concept, for example, the concept of development (Giddens, 2013). It could be described in a continuum of positive or negative, high or low, acute or chronic, normal or abnormal. For example, the concepts of emotion, tissue integrity, mobility, inflammation, pain (Giddens, 2013). The scope of some concepts cannot be characterised on a

continuum, for example, the concept of addiction. The scope of some concepts is characterised in a model or dimensions of the concept e.g. the concepts of ethics, patient education, health promotion, collaboration. Scope was not established for some concepts, such as leadership, but types and characteristics were established (Giddens, 2013).

- The defining **attributes** of a concept are those characteristics that appear frequently throughout literature and constitute “real definition” beyond the dictionary explanation of a concept, which merely substitutes one synonymous expression of another (Giddens, 2013).
- **Theoretical links** are the theories that form the foundation of such concepts. Not all concepts are linked to theories in this study. This is because not all concepts have theoretical links as described in (Giddens 2013).
- **Context to Advanced Practice Nursing** refers to the importance and implication of the concept to the practice of APN across the lifespan and healthcare setting (Giddens, 2013).
- **Exemplars** are the most common health patient characteristics, health problems or aspects of professionalism that best represent a concept (Johnston, 2017). Exemplars can be selected from “health alterations across the life span, healthcare continuum, and in a variety of patient care settings” (Johnston, 2017).

For example, the introduction of “Nurse Initiated Management of Antiretroviral Treatment (NIMART)” involves the establishment of the need for the intervention (NIMART), collaborating with PHC managers to evaluate the possibility of and their readiness for the NIMART, strategizing on how to resolve any expected roadblocks of the NIMART, training nurses for NIMART, classifying the facilities for the implementation, development of guidelines/protocols for the NIMART nurses, initiation of the intervention and monitoring of the progress of the intervention for quality improvement (Nyasulu et al., 2013). NIMART introduction/implementation, therefore, requires transformational leadership attributes (communication, collaboration, development of followers, vision, execution, partnership, motivation, team building, decision making, social power good judgement) and governance attributes (accountability, responsiveness, access, project implementation, participation, empowerment, systems thinking, planning etc.) for success. NNIMART is then selected as an exemplar of the concepts “transformational leadership” and “governance”.

- **Interrelated concepts** are those concepts that have a close association with the concept under study. NIMART as an exemplar links the concepts “transformational leadership” and “governance”. Governance is therefore an interrelated concept of transformational leadership and vice-versa.

- **Risk factors** refer to the personal characteristics or events in the life of the patient that make him or her prone to the negative consequences of a dysfunctional concept (World Health Organization, 2017).
- **Physiological processes and consequences** refers to the intracellular and extracellular signalling cascades initiated in response to changes in the body function regulatory molecules such as hormones, neurotransmitters, inflammatory mediators and growth factors and the effects of such responses on the body (Hofer, 2012).
- **Assessment** refers to the physical examination, laboratory diagnostic tests and the imaging studies conducted to detect the changes in the concept and its implication on the health of the patient (Mcalpine, 2002).
- **Clinical management** refers to the interventions that are implemented to prevent disease, maintain health or restore functioning in the patient if he or she is at risk of or affected with the negative consequences of the concept (Robles et al., 2012).

Table 6.2 presents the concepts developed, the characteristic features of the concepts, definition of the concepts, proposed exemplars and the references to the concepts below.

Table 6.2: Concepts for Child Health Nurse Practitioner Curriculum

Mega concepts	Concepts	Characteristic features	Definition	Proposed Exemplars	References
HEALTH SYSTEM	Transformational leadership	Execution, partnership, others (people), communication, self (to set personal example, Ideal impact, strong motivation, intellectual stimulation, and personal consideration)	Transformational leadership is the process in which a leader inspires the followers in developing higher order goals and motivating them to reach such goals through the refinement of the followers' worldview and attitudes.	Curriculum; inter-level patient referral; scarce resource management; NIMART; clinical nursing education	(Bass, 1995; Tracey & Hinkin, 1998; Mester, Roodt & Kellerman, 2003; Barbuto, 2005; Avolio & Bass, 2007; McLaggan, Bezuidenhout & Botha, 2013; Ahmad et al., 2014; Hughes, 2014; Cetin, Sehkar & Kinik, 2015; Giddens, 2017).
	Governance	Accountable, transparent, responsive, rule of law, stable, equity, empowerment, inclusive, consensus orientation, effective and efficient	Governance refers to the legally recognised structures and procedures that are created to guarantee "accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation" in an organization, institution or society.	Managing absenteeism; universal coverage; NIMART; clinical audit; financial audit	(Anthony, 2004; Bishop, 2009; Page, 2013; Santos et al., 2013; Sheng, 2017; UC Davis Nursing, 2017; UNESCO, 2017).
	Systems thinking	Leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, health information systems, systems organization, systems network, systems dynamics, systems knowledge	Systems thinking is a quality improvement process in which the understanding of the relationships and interaction between the components of a system is engineered to generate synergy in the system.	Vaccination; memorandum of understanding; quality improvement project; managing adverse events; development of community outreach	(World Health Organization, 2009).
	Quality of care	Effective, efficient, accessible, acceptable and equitable	Quality is defined as conforming to specified standards of a product or service, i.e. meeting or exceeding the expectations of the population served.	Managing adverse events; universal coverage; NIMART; clinical audit; financial audit	(World Health Organization, 2006b)
		History taking, physical	Clinical assessment is the process of	Assessment for diarrhoeal	(Fernandez, Benito &

Mega concepts	Concepts	Characteristic features	Definition	Proposed Exemplars	References
ADVANCED NURSING PRACTICE	Clinical assessment	assessment (biopsychosocial, spiritual, emergency) laboratory examination, imaging studies	gathering patient information through patient history taking, physical assessment, laboratory examination and imaging studies to guide the clinician's and patient's decision making processes especially in the selection of treatment or referral for an appropriate treatment.	diseases; assessing for pneumonia; assessing for malaria; assessing critically ill children; assessing for child abuse	Mintegi, in press; Miles et al., 2006; Donaldson et al., 2008; Cootes, 2010; Van den Bruel et al., 2011; Cheema, Stephen & Westwood, 2013)
	Clinical decision making	Pathophysiology, clinical judgement, diagnosis, current-evidence, clinical expertise and patient preferences and characteristics (uniqueness, criticalness, urgency, stability, risks), variables (certainty, similarity, congruence/conflict)	Clinical decision making, synonymous with clinical diagnosis, is the process of deciding on the health status of the client in order to select the best treatment that responds to the client's condition with the primary purpose of improving the health of the client and community.	Managing adverse event; critically ill child; NIMART Clinical audit; use of clinical guidelines	(Ackley et al., 2008; Smith, Higgs & Ellis, 2008; Thompson, 2008; Standing, 2010; Greveson, 2013; Panagiotou, 2013; Thompson et al., 2013; Bordini, Stephany & Kliegman, 2017; Nursing and Midwifery Board of Ireland, 2017; Zalts et al., 2017)
	Treatment selection	Pharmacological, non-pharmacological (complementary and alternative medicine), pharmacovigilance, cost effectiveness	Treatment selection is the selection of appropriate and cost-effective treatment that responds to patients' needs for a requisite period of time.	Managing adverse event; diarrhoeal diseases; critically ill child; pneumonia; clinical	(Greveson, 2013; Catalá-López et al., 2015, 2017; Collins-Bride et al., 2016; Management Sciences for Health, 2017).
	Nursing case management	Assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of services, primary healthcare, family centred care, referral system, clinical progress, safe, timely, effective, efficient, cost-effective, equitable and patient-centred, payer, level of care, benefits	Case management refers to the actions taken by the Advanced Practice Nurse in coordinating ongoing comprehensive medical services (assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of healthcare) that responds to the needs of the patient, family or community.	Managing adverse event; use of clinical guidelines; patient referral; universal coverage; Clinical audit	(Phaneuf, 2008; Commission for Case Manager Certification, 2012, 2017; Zeng et al., 2016)

Mega concepts	Concepts	Characteristic features	Definition	Proposed Exemplars	References
	Child mortality	Pneumonia, Diarrhoeal disease, malaria, HIV, severe malnutrition and contributing factors (country of birth, preterm birth, poverty, gender, neonate, rural settlement, urban slum settlement, small for age, child abuse)	Child morbidity is the percentage of children who contracted a disease, fell ill or were injured within a specific period of time in a defined population. Child mortality is the number of child deaths per 1000 live births in a specified geographical or political location.	Managing diarrhoeal diseases; managing pneumonia; managing HIV/AIDS; managing critically ill children; Child abuse	(Kandala et al., n.d.; World Health Organization, 2006c, 2011; Avogo, 2010; Cootes, 2010; Nutor, 2012; Kimani-Murage et al., 2014; African Leadership for Child Survival, 2015; Mulaudzi, 2015; USAID, 2015; Centers for Disease Control and Prevention, 2015; Masuku & Owaga, 2016; Hendricks, McKerrow & Hendricks, 2016; kalenaspire.com, 2017; Kassebaum et al., 2017; Lange & Klasen, 2017).
	Medical record management	Principles (evidence, legal, confidential, safety, critical information, retention period); Uses (continuity of care, quality improvement, research, medicolegal); Types (paper-based, electronic); Content (demographic, consent, admission, management, discharge, financial)	Medical record management refers to the organizational policies and regulations and procedures governing the collating, handling, storage and use of patient medical records.	Managing adverse events; inter-level patient referral; patient kardex; clinical audit; financial audit	(World Health Organization, 2006d; Brit, 2009; University of Adelaide, 2009; Wong & Bradley, 2009; Bali et al., 2011; Katuu & van der Walt, 2016; Jefferson Lab, 2017)
EDUCATION	Teaching	Health promotion, Health education, Clinical teaching, patient education, curriculum, andragogy, learning, assessment, knowledge brokering	Teaching is the process by which the teacher (lecturer, facilitator etc.) guides the student to acquire certain knowledge, skills and attitudes that are intentionally planned through an institutional curriculum.	Curriculum change; patient education; clinical nursing education; OBSCE; health promotion	(Australian Nurse Teacher Association, 2010; Gerrish et al., 2011; Ernstze, Bitzer & Ed, 2012; Hughes & Quinn, 2013; Marcus, 2014; DeNisco & Barker, 2015).
	Influencing	Advocacy, professional organization, needs analysis,	Influencing curriculum, therefore refers to advocating and positively	Curriculum change; clinical nursing education; OBSCE;	(Caldwell, 1997; National Academic Press, 2002;

Mega concepts	Concepts	Characteristic features	Definition	Proposed Exemplars	References
	curriculum	Programme development, Programme evaluation, feedback	determining the course of teaching and learning in nursing.	child health advocacy; writing journal articles.	Parsons & Beauchamp, 2012; World Health Organization, 2016c)
RESEARCH	Nursing Research	Research proposal, data collection, Data analysis, Interpretation, dissemination, principles (privacy, anonymity and confidentiality, ethical approval, institutional approval)	Nursing Research is defined as a “diligent and systematic enquiry to validate and refine an existing knowledge and generate new knowledge”.	Qualitative research; quantitative research; research proposal; literature review; writing research report	(Brink, Walt & Rensburg, 2013).
	Research dissemination	Institutional factors (dissemination strategy, organizational culture, incentives); Values and skills (academic integrity, plagiarism, academic writing); Types (research report, journal papers, conferences presentation, research brief)	Dissemination is a well-planned process in which research findings are exposed to a wider audience, through written and verbal means, for appropriate evaluation and inclusion into policy and healthcare practice to facilitate evidence-based practice.	Managing plagiarism; research protocol development; evidence-base poster development; writing research report; writing a journal article	(Wilson et al., 2010; Yale Center for Clinical Investigation, 2011; World Health Organization, 2014)

6.5 CONCEPT ANALYSIS

The concepts developed by the 3 members of the curriculum committee using the instructions for concept development by an expert group developed by the researcher and analysed by the rest of the curriculum team through the online concept analysis questionnaire developed by the researcher. The results of the analysis are provided below.

6.5.1 Transformational Leadership

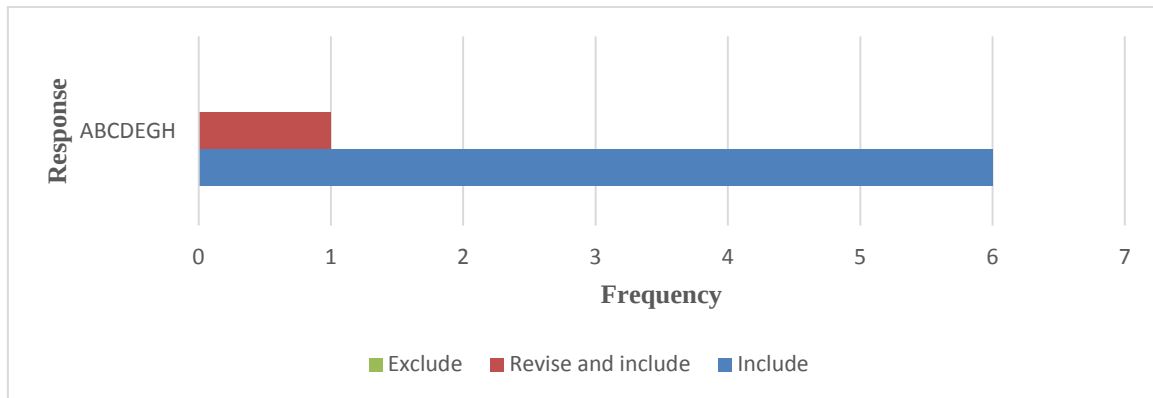


Figure 6.1: Should transformational leadership be included, revised or excluded?

From the Figure 6.1 above, it can be seen that 85.7% of the curriculum community members agreed that the concept should be included. One member (E) asked that the concept should be revised for inclusion. She stated that:

“This section is excessively detailed and wordy making it difficult to fully understand its relevance and applicability to the APN. The section on context to practice is therefore relevant but doesn't really address how the APN will overcome the identified challenges to the introduction of the curriculum”.

Another member (G) stated that:

“I think this concept is appropriate for the setting that the curriculum is being created for”.

The section on context to Advanced Practice Nursing was revised and included.

6.5.1.1 Exemplars

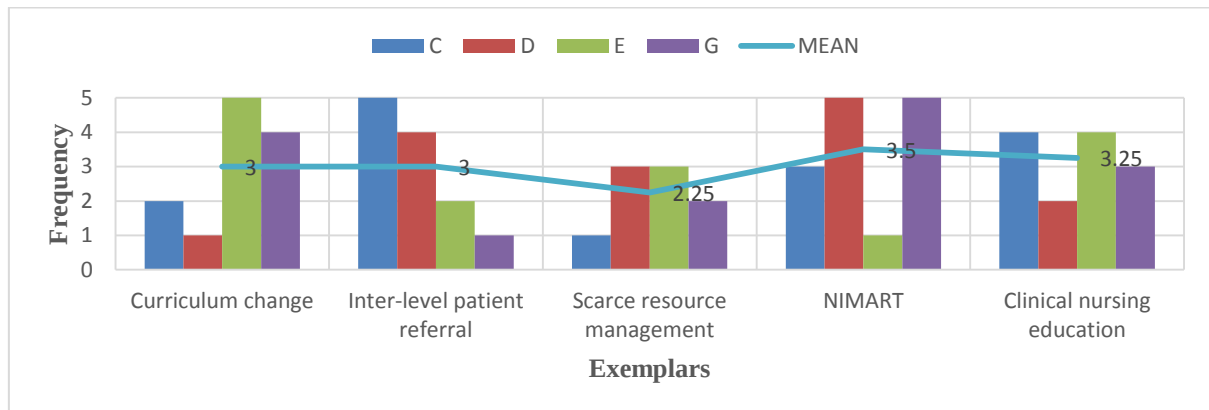


Figure 6.2: Exemplars for 'transformational leadership' [$\bar{x} \rightarrow 1$, most important]

Figure 6.2 is a graphical representation of the ranking of the proposed exemplars for the concept 'transformational leadership' ranked from 1 to 5, with one (1) being the most important and five (5) being the least important, therefore if the mean ($\bar{x}$) of an exemplar approaches ($\rightarrow$) 1, then that exemplar is, comparatively, the most important for the concepts. It can be deduced from the mean ranking of members C, D, E and G who reviewed (analysed) the concepts, that the most important exemplar is scarce resource management ($\bar{x}=2.25$), followed by curriculum change ($\bar{x}=3$), inter-level patient referral ($\bar{x}=3$), clinical nursing education ($\bar{x}=3.25$) and then Nurse Initiated Management of Antiretroviral Treatment (NIMART) ($\bar{x}=3.5$). Interprofessional leadership was mentioned as an additional exemplar that should be included.

6.5.1.2 Interrelated concepts

Interrelated concepts stated by the experts include nurse case management, systems thinking and governance.

6.5.2 Governance

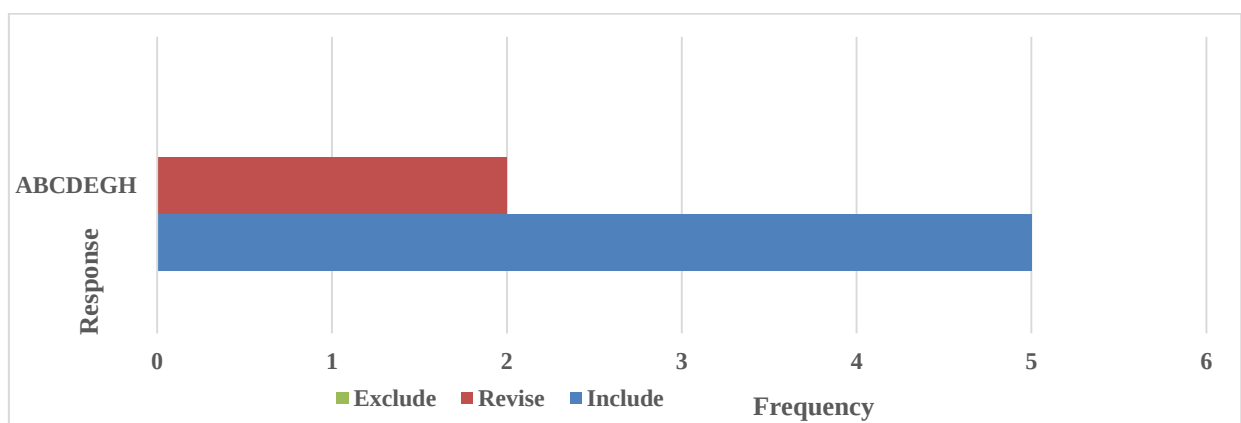


Figure 6.3: Should governance be included, revised or excluded?

From the Figure 6.3 above, 71.4% of the curriculum community members agreed that the concept should be included. Two members (E and G) asked that the concept should be revised. They stated that:

G: *“I think that the aim of the new nursing training is focused on intervention not politics. Transformational leadership has already been included which I think is essential. Maybe the other components human resource managing and clinical audit can be included.”*

E: *“This section appears to be incomplete and Good Governance will be a key to the success of this program.”*

The concepts were revised and included. The name governance was kept instead of good governance based on a majority of the committee’s endorsement.

6.5.2.1 Exemplars

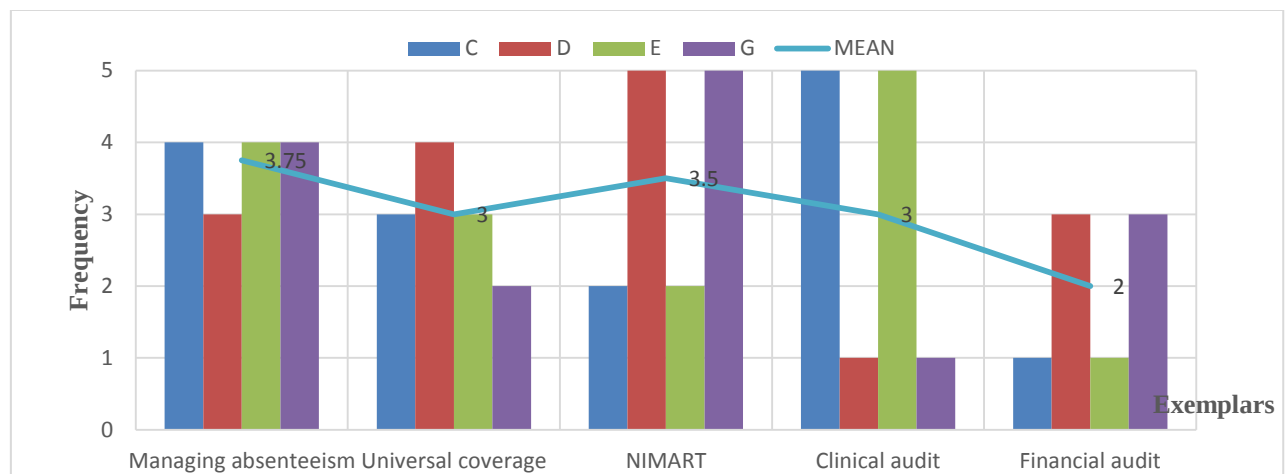


Figure 6.4: Exemplars for the concept “governance” [$\bar{x} \rightarrow 1$, most important]

Figure 6.4 shows the graphical representation of the ranking of the proposed exemplars for the concept ‘governance’ ranked from 1 to 5, with one (1) being the most important and five (5) being the least important. It can be deduced from the mean ranking of members C, D, E and G that the most important exemplar is financial audit ($\bar{x}=2$), followed by clinical audit ($\bar{x}=3$) and universal coverage ($\bar{x}=3$), then NIMART ($\bar{x}=3.5$) and managing absenteeism ($\bar{x}=3.75$). Self-regulation and auditing were mentioned as additional exemplars that should be included.

6.5.2.2 Interrelated concepts

Systems thinking and transformational leadership were stated by the members as interrelated concepts.

6.5.3 Systems Thinking

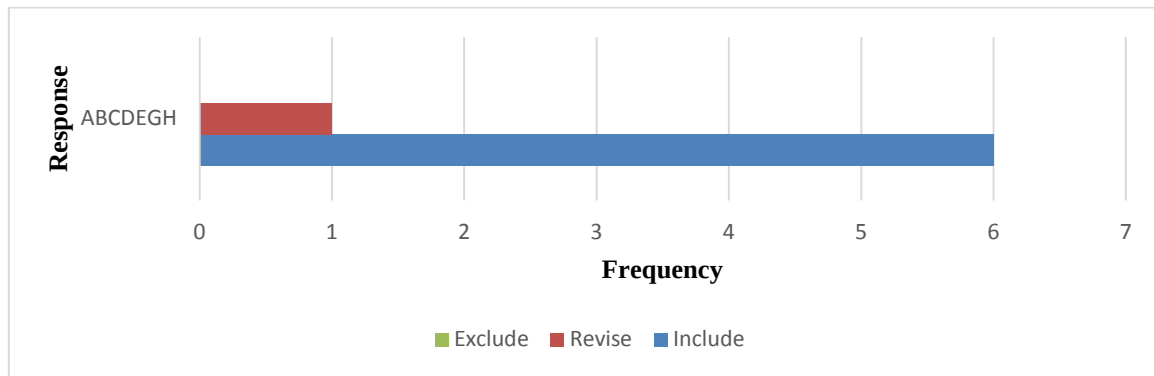


Figure 6.5: Should health systems thinking be included, revised or excluded

Figure 6.5 shows that 85.7% of the curriculum committee agreed on the inclusion of the concept “health systems thinking”. One member (E), who requested that the concept be revised for inclusion, stated that the concept is much too theoretical and should be made more practical. The concept was revised and included.

6.5.3.1 Exemplars

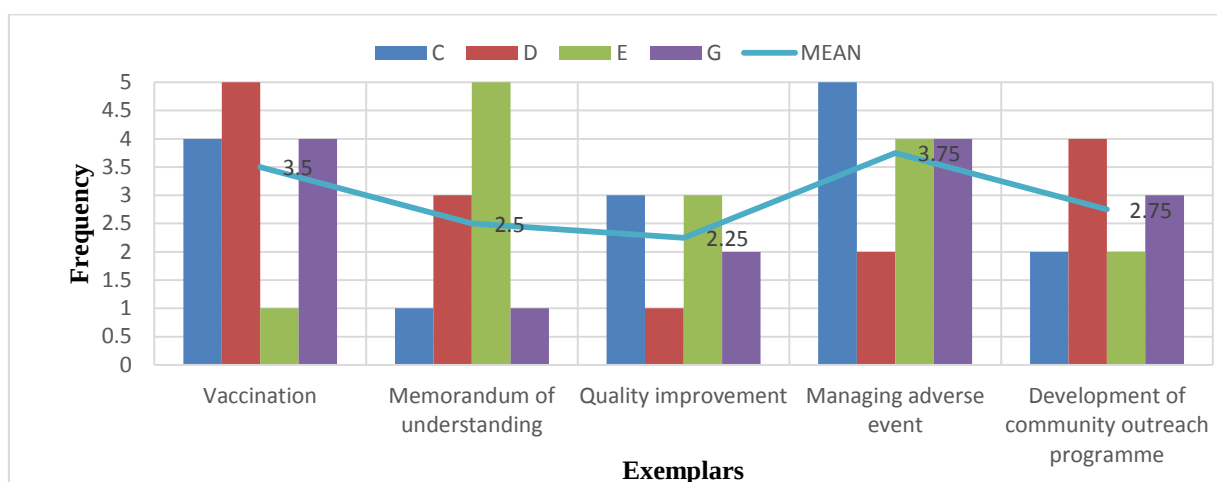


Figure 6.6: Exemplars for the concept “health systems thinking” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.6 above, quality improvement ($\bar{x}=2.25$) was the most important exemplar, followed by memorandum of understanding ($\bar{x}=2.5$), then development of community health outreach programme ($\bar{x}=2.75$), vaccination ($\bar{x}=3.5$) and managing of adverse events ($\bar{x}=3.75$).

6.5.3.2 Interrelated concepts

Influencing curriculum, clinical assessment and quality of care were stated as interrelated concepts to systems thinking.

6.5.4 Quality of care

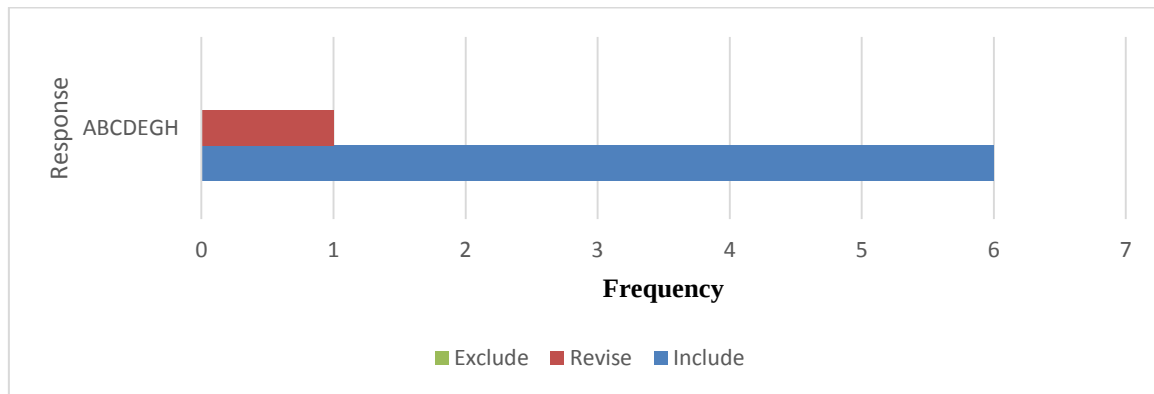


Figure 6.7: Should health quality of care be included, revised or excluded?

From **Figure 6.7** above, 85.7% of the committed agreed that the concept “quality of care” should be included in the curriculum framework.

6.5.4.1 Exemplars

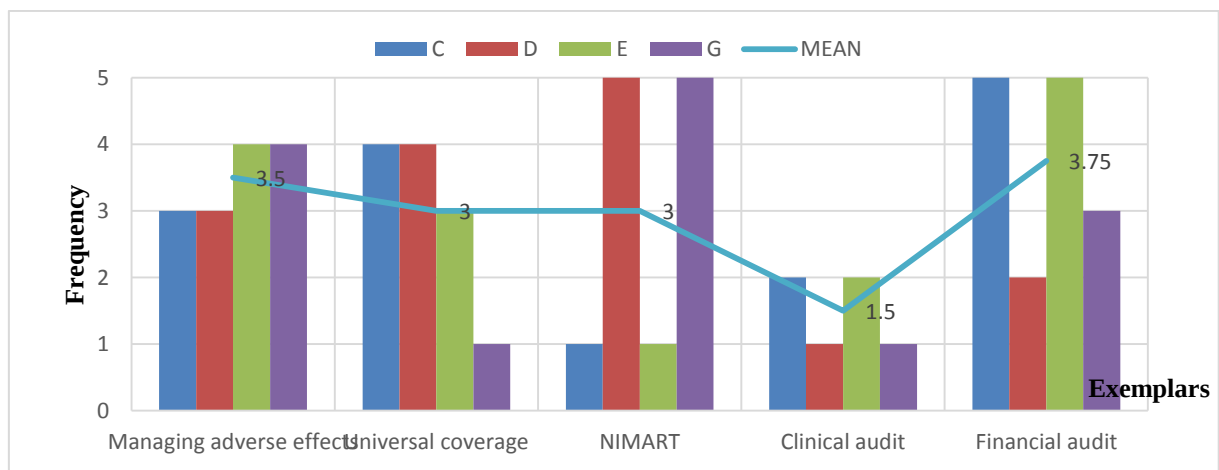


Figure 6.8: Exemplars for the concept “quality of care” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.8 above, clinical audit ($\bar{x}=1.5$) was adjudged the most important exemplar, followed by NIMART ($\bar{x}=3.0$) and universal coverage (3.0) then managing adverse effects ($\bar{x}=3.5$) and financial audit ($\bar{x}=3.75$). Evidence based practice was stated as an additional exemplar by a member of the committee.

6.5.4.2 Interrelated concepts

Research dissemination, teaching and influencing curriculum were stated as exemplars for the concept “quality of care”.

6.5.5 Clinical Assessment

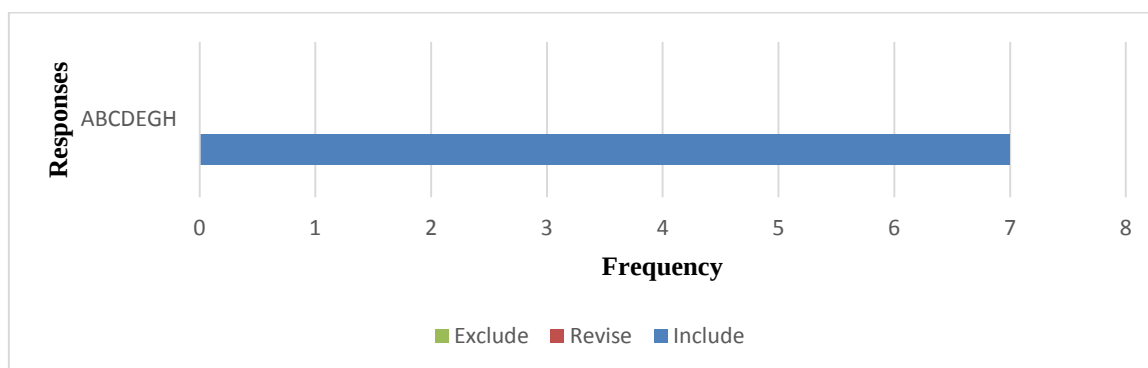


Figure 6.9: Should clinical assessment of care be included, revised or excluded?

As seen in **Figure 6.9**, all the members of the curriculum committee have endorsed the concept “clinical assessment” for the curriculum framework.

6.5.5.1 Exemplars

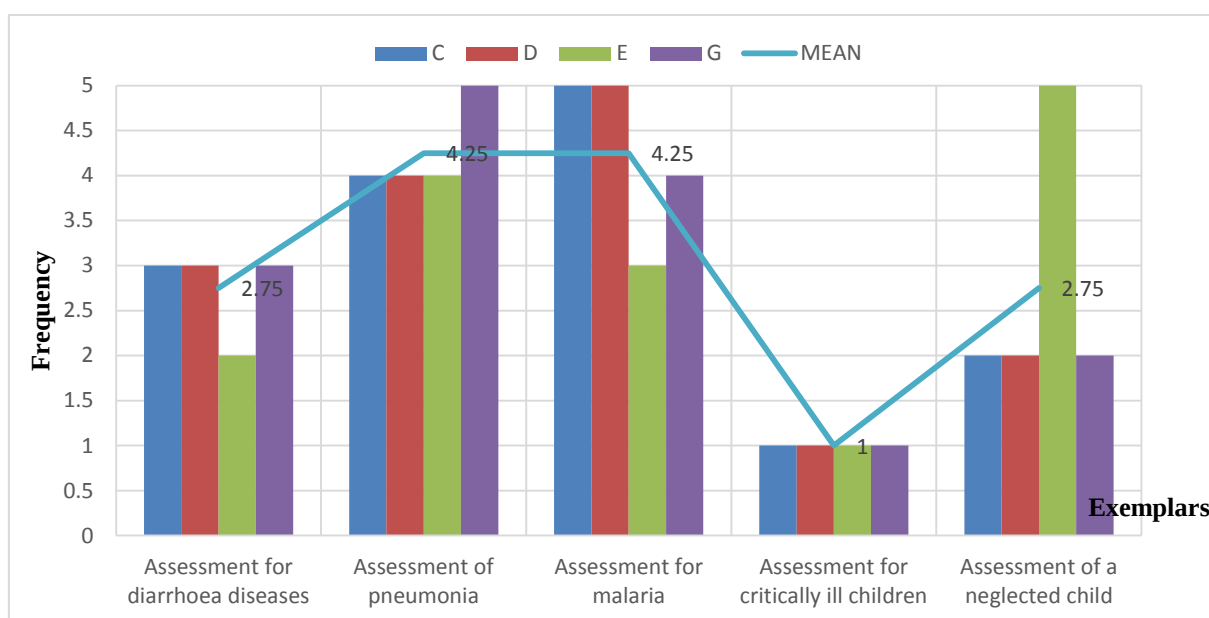


Figure 6.10: Exemplars of the concept “clinical assessment” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.10, assessment for clinically ill child ($\bar{x}=1.0$), assessment for diarrhoeal diseases ($\bar{x}=2.75$), assessment of a neglected child ($\bar{x}=2.75$), assessment of pneumonia ($\bar{x}=4.25$) and assessment for malaria ($\bar{x}=4.25$), in the order of importance, were the ranks for the exemplars for the concept “clinical assessment”. Malnutrition and HIV/AIDS were stated by the committee members for inclusion as exemplars.

6.5.5.2 Interrelated concepts

Teaching, quality of care and clinical decision making were mentioned as concepts related to clinical assessment.

6.5.6 Clinical Decision Making

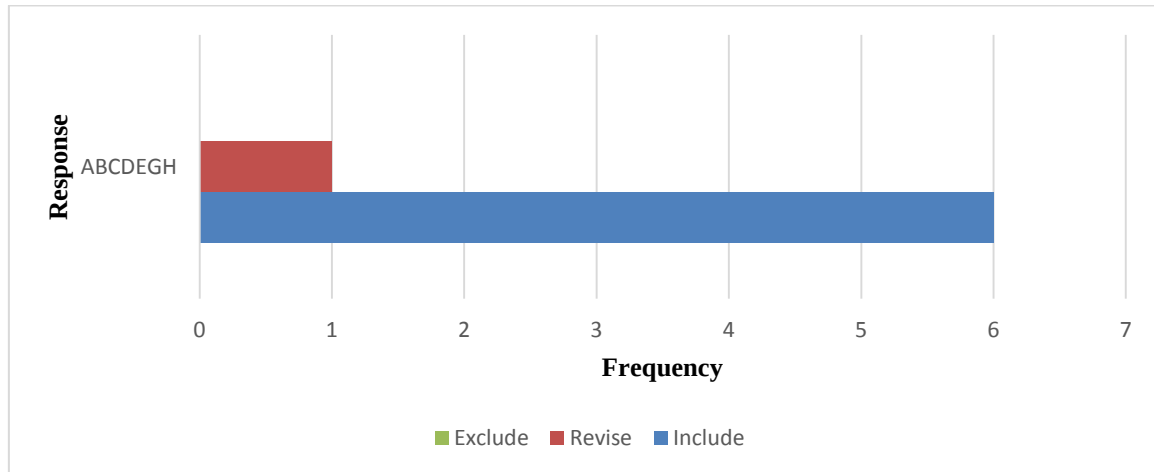


Figure 6.11: Should clinical decision making be included, revised or excluded?

From Figure 6.11 above, 85.7% of the members of the curriculum committee agreed on the inclusion of the concept “clinical decision making”. One member (E), who requested the concept be revised for inclusion, said the concept should be merged with the concept “treatment selection”.

6.5.6.1 Exemplars

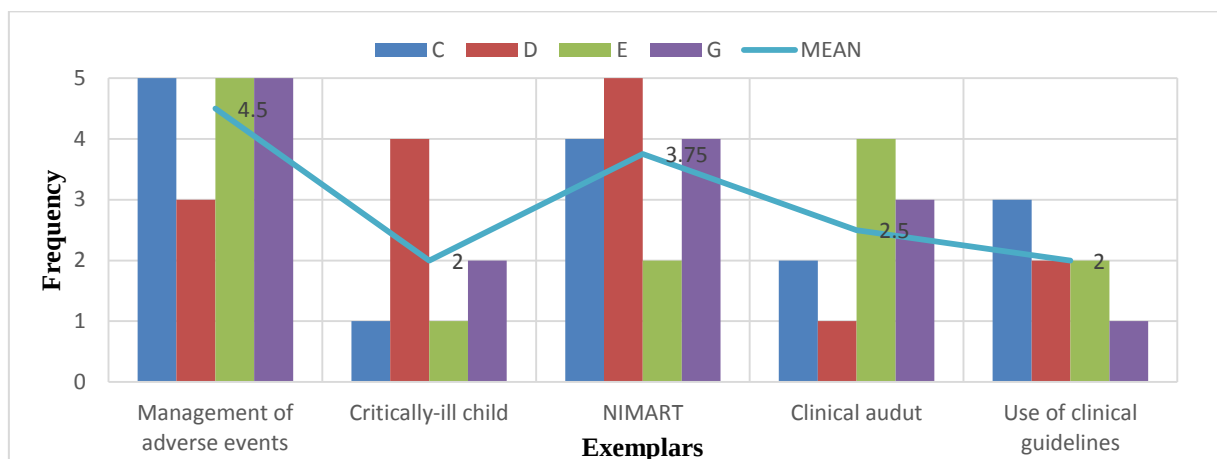


Figure 6.12: Exemplars for the concept “clinical decision making” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.12 above, critically ill child ($\bar{x}=2.0$) and use of clinical guidelines ($\bar{x}=2.0$) were the most important exemplars, followed by clinical audit ($\bar{x}=2.5$), NIMART (3.75) and management of adverse events ($\bar{x}=4.5$).

6.5.6.2 Interrelated concepts

Quality of care and teaching were stated as interrelated concepts for the concept “clinical decision making”.

6.5.7 Treatment selection

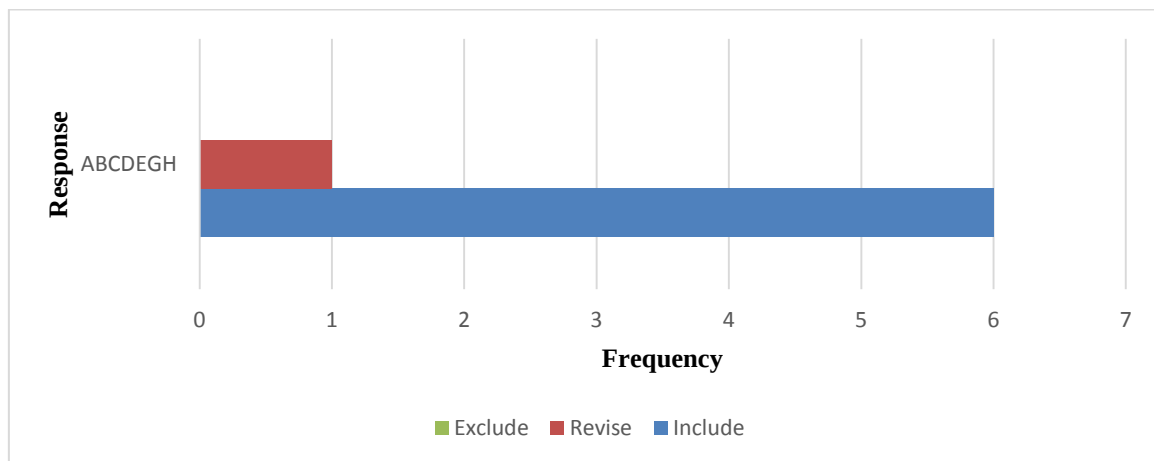


Figure 6.13: Should treatment selection be included, revised or excluded?

The majority (85.7%) of the members of the curriculum committee, as seen from Figure 6.13 above, supported the inclusion of the concept into the curriculum framework.

6.5.7.1 Exemplars

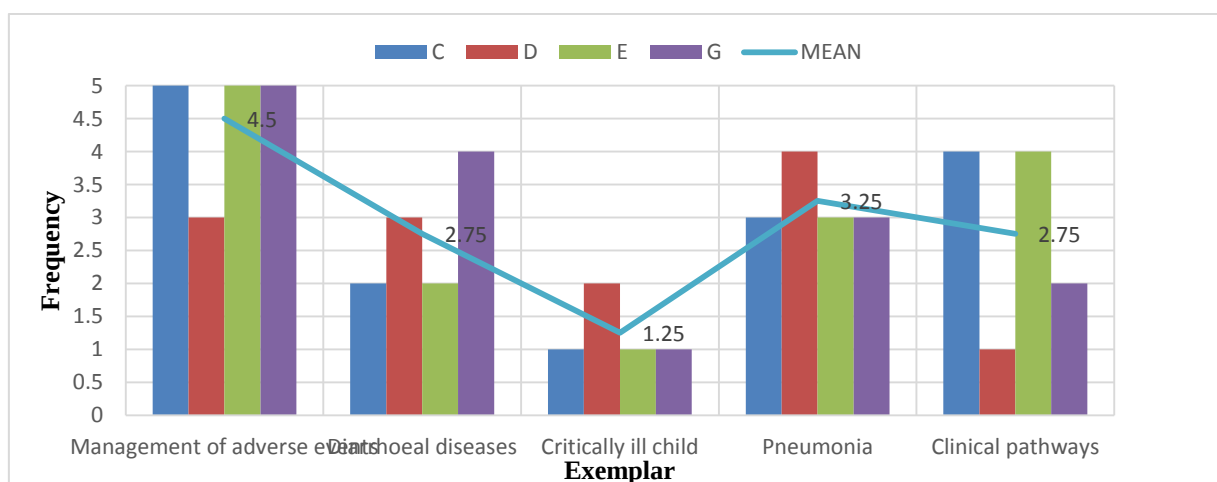


Figure 6.14: Exemplars for the concept “treatment selection” [$\bar{x} \rightarrow 1$, most important]

In the order of importance, as seen from Figure 6.14 above, critically ill child ($\bar{x}=1.25$), clinical pathways ($\bar{x}=2.75$), diarrhoeal diseases ($\bar{x}=2.75$), pneumonia ($\bar{x}=3.25$) and management of adverse events ($\bar{x}=4.5$) were the ranks for the exemplars for the concept “treatment selection”.

Neonatal resuscitation, malnutrition, prevention of mother to child HIV infection and development of algorithms were stated by members as additional exemplars.

6.5.7.2 Interrelated concepts

Quality of care, clinical assessment, clinical decision making and nursing case management were stated as interrelated concepts.

6.5.8 Nursing case management

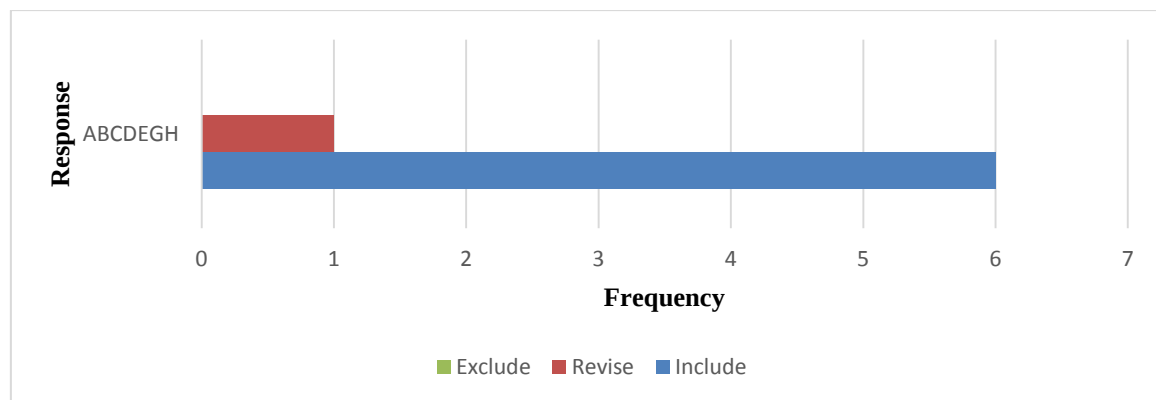


Figure 6.15: Should nursing case management be included, revised or excluded?

The majority (85.7%) of the members of the curriculum committee supported the inclusion of the concept “nursing case management’ into the curriculum framework.

6.5.8.1 Exemplars

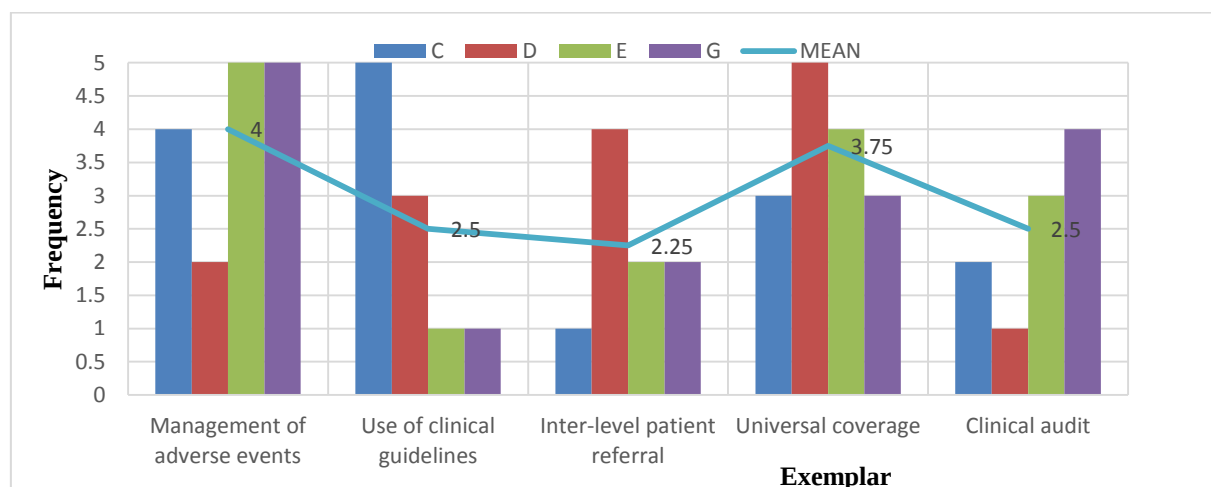


Figure 6.16: Exemplars for the concept “nursing case management” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.16 above, the most important exemplar for the concept “nursing case management” was inter-level patient referral ($\bar{x}=2.25$), followed by use of clinical guidelines ($\bar{x}=2.5$) and clinical audit ($\bar{x}=2.5$), then universal coverage ($\bar{x}=3.75$) and management of adverse events ($\bar{x}=4.0$).

6.5.8.1 Interrelated concepts

Quality of care, clinical assessment, clinical decision making and treatment selection were stated as interrelated concepts.

6.5.9 Child mortality

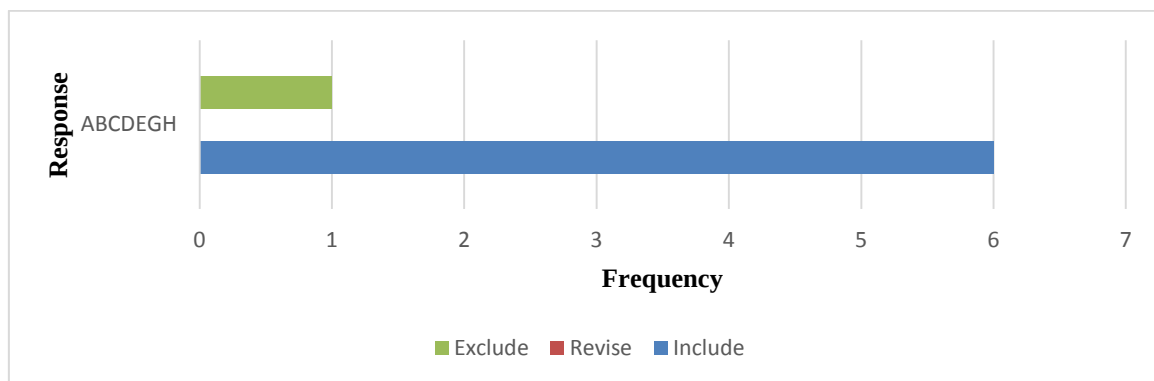


Figure 6.17: Should child mortality be included, revised or excluded?

The majority (85.7%) of the curriculum committee members, as indicated on Figure 6.17 above, endorsed the concept “child mortality” to be included in the curriculum framework. One member (E) asked that the concept be excluded. She asked: *“Is this not the overriding objective and aim of your program and the APN, therefore does it need to stand alone?”* Another expert (G) stated that the concept was pertinent and needed to be included. The concept has, therefore, been included based on the majority endorsement.

6.5.8.1 Exemplars

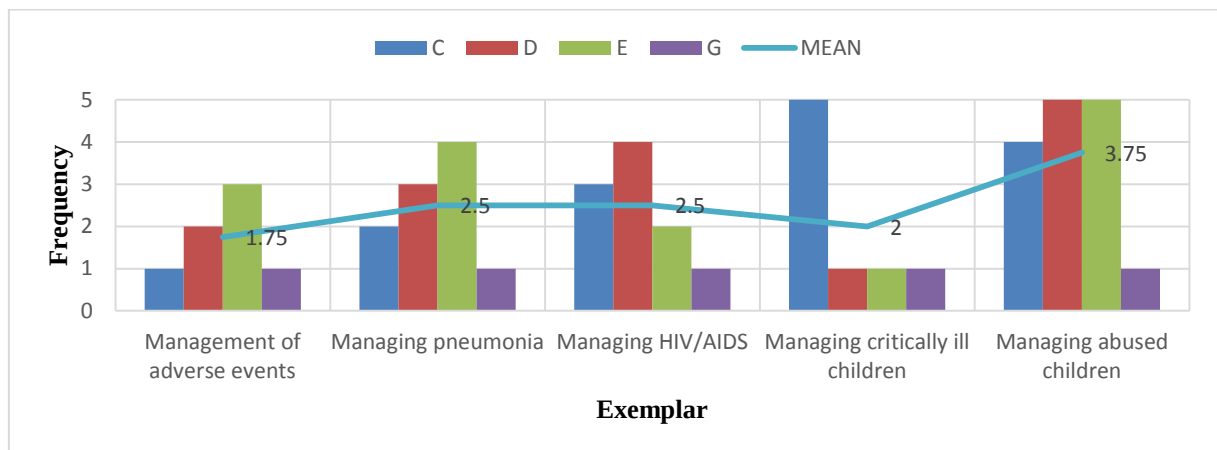


Figure 6.18: Exemplars for the concept “nursing case management” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.18 above, management of adverse events ($\bar{x}=1.75$) was the most important exemplar for child mortality, followed by managing critically ill children ($\bar{x}=2.0$), then managing pneumonia ($\bar{x}=2.5$), managing HIV/AIDs ($\bar{x}=2.5$) and managing abused children ($\bar{x}=3.75$).

6.5.8.2 Interrelated concepts

Quality of care, clinical assessment and clinical decision making were stated as the interrelated concepts.

6.5.10 Medical record management

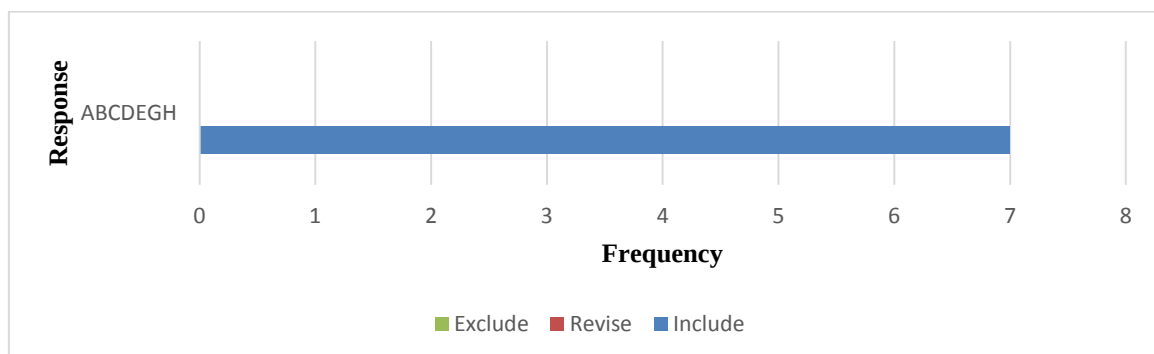


Figure 6.19: Should medical record management be included, revised or excluded?

As indicated in Figure 6.19 above, all the members of the committee endorsed the concept “medical record management”. A member of the committee (G) stated that: “*very important concepts for monitoring efficacy/outcomes of services provided as well as patient progression of disease*”.

6.5.10.1 Exemplars

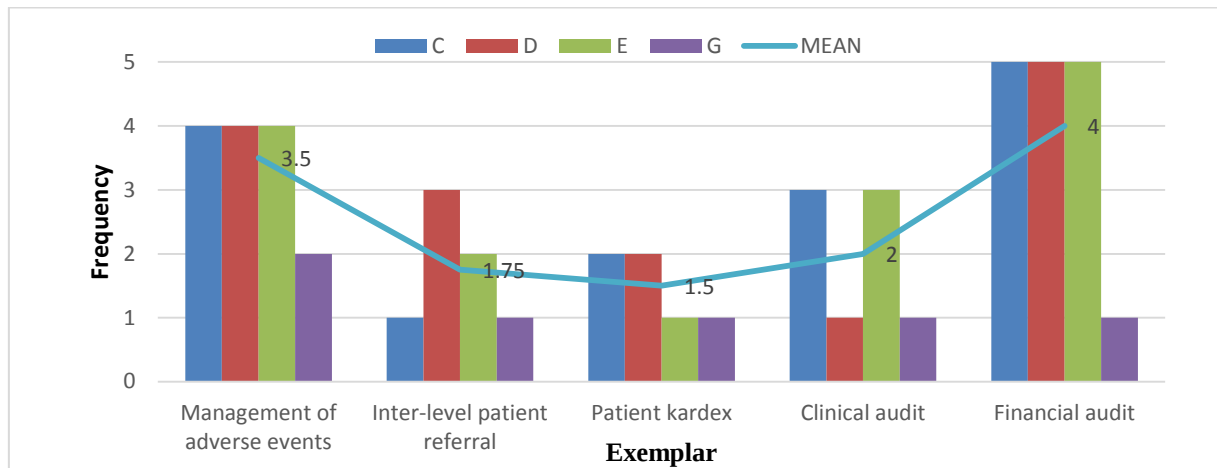


Figure 6.20: Exemplars for the concept “medical record management” [$\bar{x}$ -->1, most important]

From Figure 6.20 above, patient kardex ($\bar{x}=1.5$) was the most important exemplar for the concept medical record management, followed by inter-level patient referral ($\bar{x}=1.75$), then clinical audit ($\bar{x}=2.0$), management of adverse event ($\bar{x}=3.5$) and lastly, financial audit ($\bar{x}=4.0$).

6.5.10.2 Interrelated concepts

Nursing research and quality of care were stated as the interrelated concepts.

6.5.11 Teaching

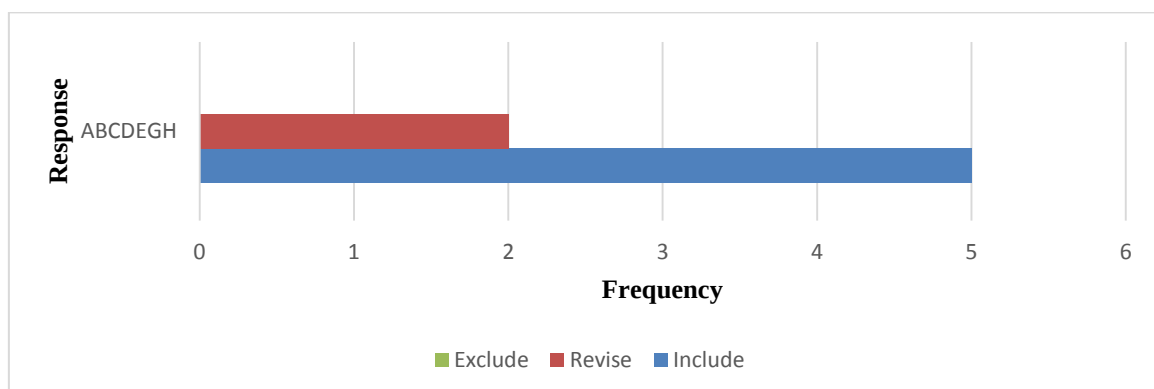


Figure 6.21: Should teaching be included, revised or excluded?

As indicated in Figure 6.21 above, majority (71.4%) of the members of the committee included the concept; the other 28.6% requested that the concept should be revised and included. One member (C) asked that: “*Change students to learner as it is not just academic*”. Another member (E) also stated that “Community teaching is not evident”. The revision was done to reflect the members’ comments.

6.5.11.1 Exemplars

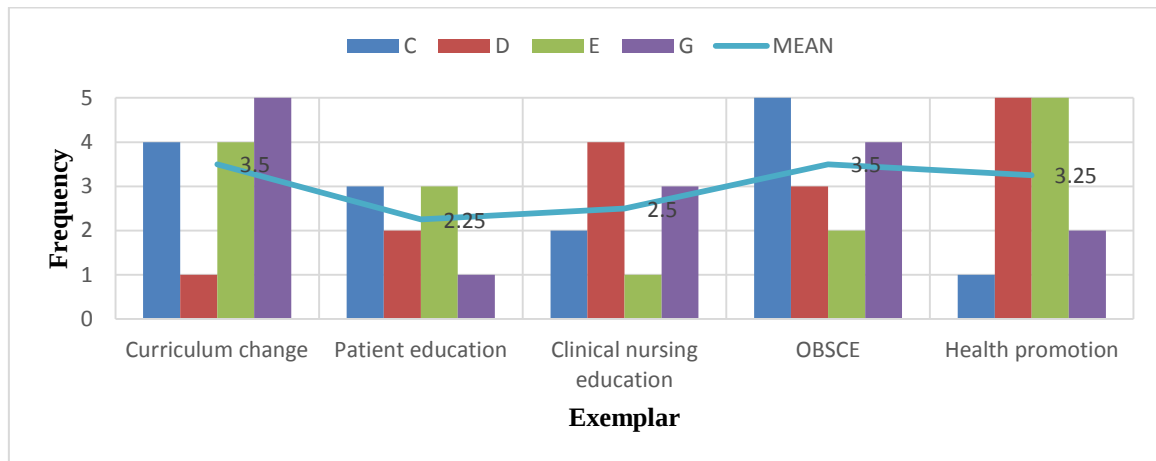


Figure 6.22: Exemplars for the concept “teaching” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.22 above, patient education ($\bar{x}=2.25$), clinical nursing education ($\bar{x}=2.5$), health promotion ($\bar{x}=3.25$), Objective Structured Clinical Examination (OBSCE) ($\bar{x}=3.5$) and curriculum change ($\bar{x}=3.5$) were the ranks of the exemplars ranked by the committee in order of importance.

6.5.11.2 Interrelated concepts

Influencing curriculum, quality of care and transformational leadership were stated as concepts interrelated to the concept “teaching”.

6.5.12 Influencing curriculum

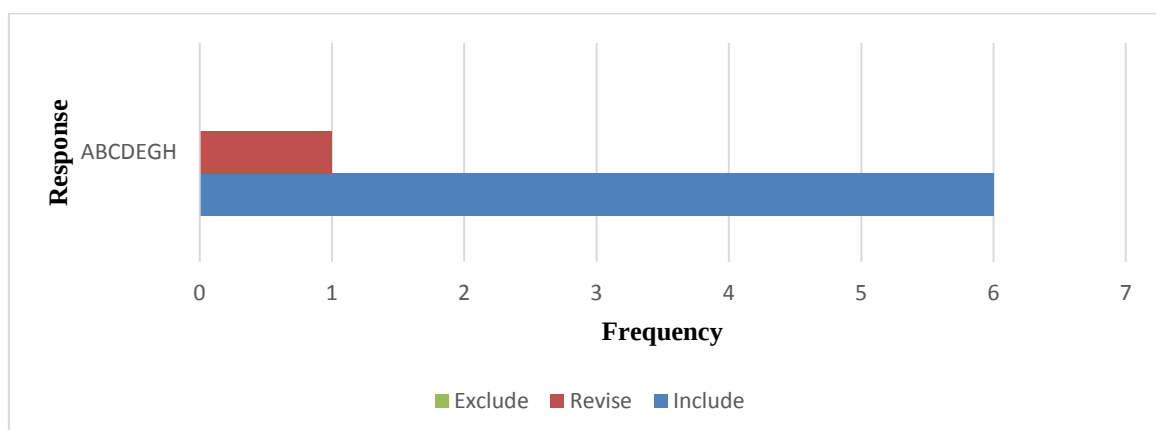


Figure 6.23: Should influencing curriculum be included, revised or excluded?

From Figure 6.23 above, the majority (85.7%) of the members of the curriculum committee endorsed the concept for inclusion.

6.5.12.1 Exemplars

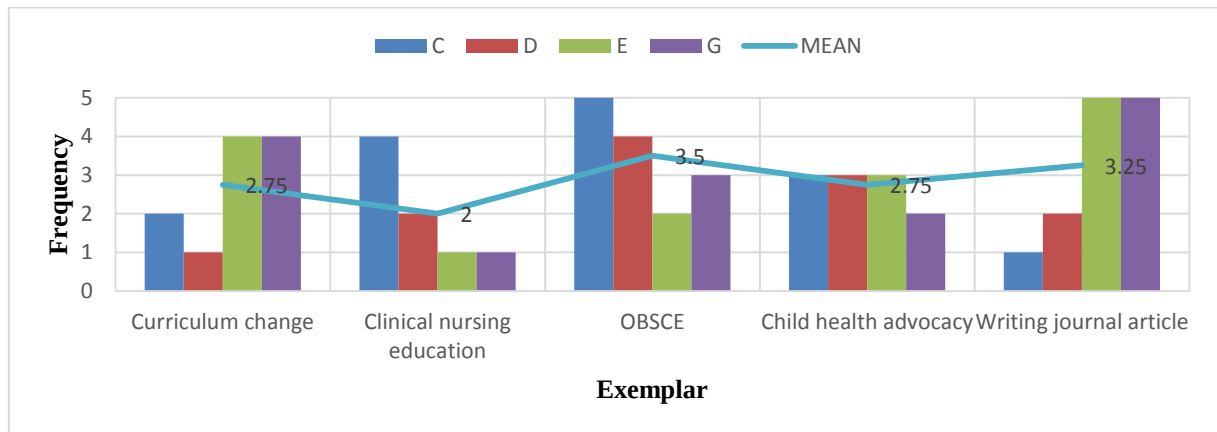


Figure 6.24: Exemplars for the concept “influencing curriculum”. [$\bar{x} \rightarrow 1$, most important]

From Figure 6.24 above, clinical nursing education ($\bar{x}=2.0$) was adjudged the most important exemplar for the concept teaching. This was followed by curriculum change ($\bar{x}=2.75$), child health advocacy ($\bar{x}=2.75$), writing a journal article and Objectively Structured Clinical Examination (OBSCE) ($\bar{x}=3.5$).

6.5.12.2 Interrelated concepts

Nursing research, teaching and transformational leadership were stated by members of the team as interrelated concepts.

6.5.13 Nursing research

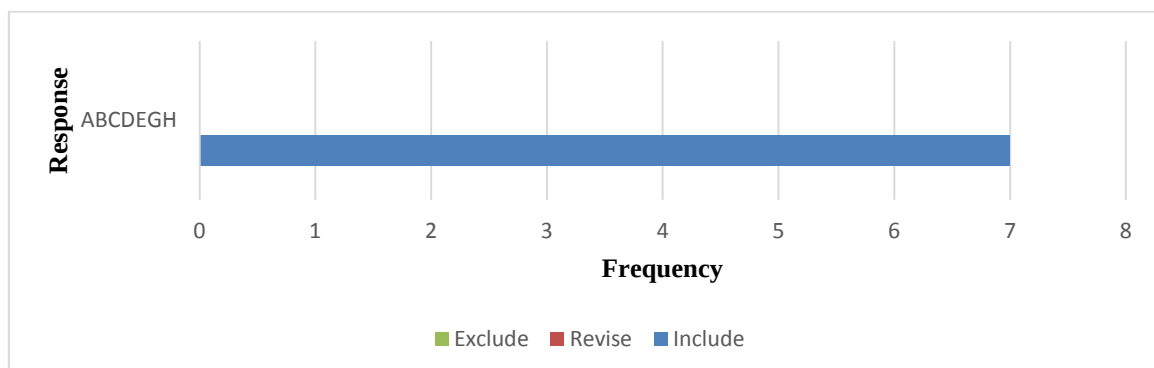


Figure 6.25: Should nursing research be included, revised or excluded?

From **Figure 6.25**, the committee unanimously endorsed the concept “nursing research” to be included into the curriculum framework.

6.5.13.1 Exemplars

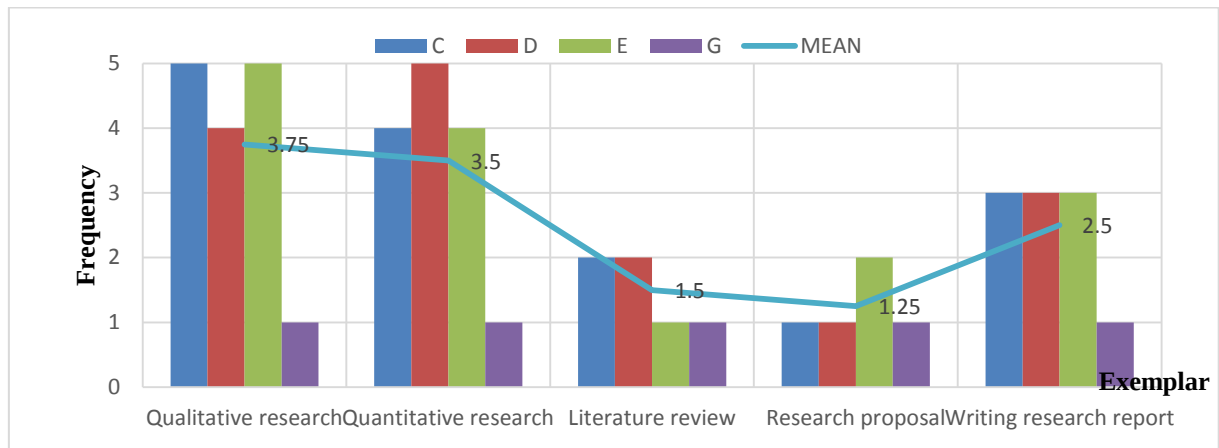


Figure 6.26: Exemplars for the concept “nursing research” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.26 above, the exemplars research proposal ($\bar{x}=1.25$), followed by literature review ($\bar{x}=1.5$), writing research report ($\bar{x}=2.5$), quantitative research ($\bar{x}=3.5$) and qualitative research ($\bar{x}=3.75$) were ranked by the committee in order of importance.

6.5.13.2 Interrelated concepts

Teaching, influencing curriculum and research dissemination were stated by the committee as interrelated concepts.

6.5.14 Research dissemination

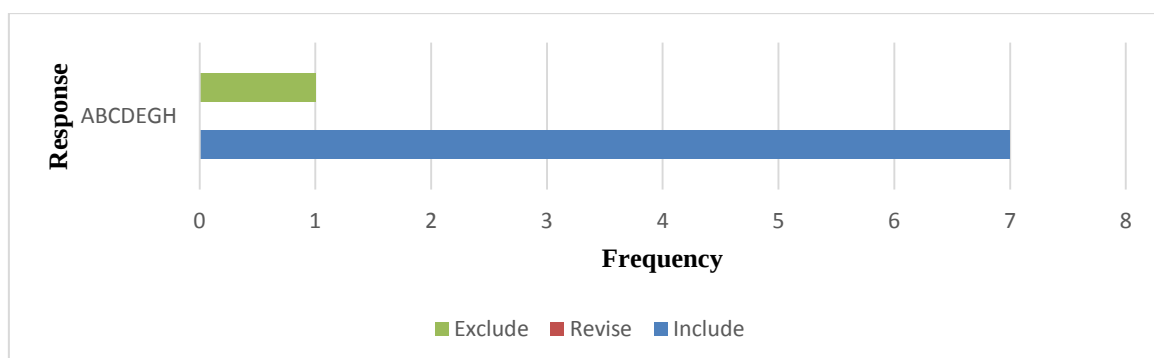


Figure 6.27: Should research dissemination be included, revised or excluded?

From Figure 6.27 above, the majority (85.7%) of the curriculum committee included the concept “research dissemination”. One member (E) excluded the concept, stating that: “*Are these concepts about dissemination or more about conducting research, therefore, combine this section with the one above*”.

The concept was maintained based on majority endorsement, and with the view that combining the two concepts would make it too complex and overloaded.

6.5.14.1 Exemplars

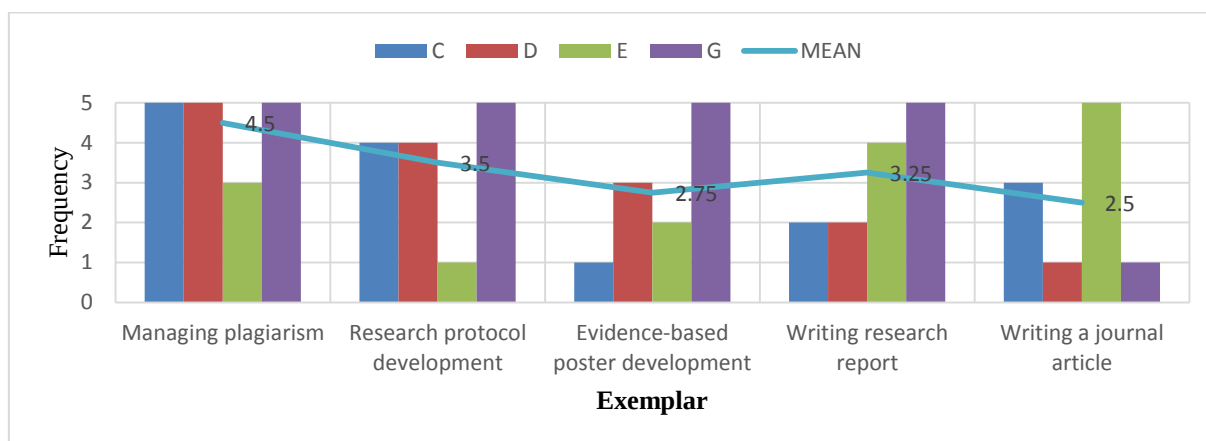


Figure 6.28: Exemplars for the concept “research dissemination” [$\bar{x} \rightarrow 1$, most important]

From Figure 6.28 above, writing journal article ($\bar{x}=2.5$), followed by evidence-based poster development ($\bar{x}=2.75$), writing research report ($\bar{x}=3.25$), research protocol development ($\bar{x}=3.5$) and managing plagiarism ($\bar{x}=4.5$) were the ranks in order of importance of the exemplars by the curriculum committee.

6.5.14.2 Interrelated concepts

Nursing research, transformational leadership and influencing curriculum were stated as interrelated concepts to research dissemination.

6.6 TRANSFORMATIONAL LEADERSHIP

Transformational leadership is the process in which a leader inspires followers in developing higher order goals, and motivating them to reach such goals through the refinement of the followers’ worldview and attitudes (Bass, 1995; Giddens, 2017). Transformational leaders help in the establishment of direction or purpose and create the right conditions for the followers to work towards fulfilling the organization’s purpose (Bass, 1995; Tracey & Hinkin, 1998; Mester, Roodt & Kellerman, 2003; Barbuto, 2005; Avolio & Bass, 2007; McLaggan, Bezuidenhout & Botha, 2013; Ahmad et al., 2014; Hughes, 2014; Giddens, 2017).

6.6.1 Scope

A transformational leader is one who is capable of motivating his/her followers in pursuing set goals through the change of attitudes and behaviour, making the followers disciples and then leaders (Bass, 1995; Tracey & Hinkin, 1998; Mester, Roodt & Kellerman, 2003; Barbuto, 2005; Avolio & Bass, 2007; McLaggan, Bezuidenhout & Botha, 2013; Ahmad et al.,

2014; Hughes, 2014; Giddens, 2017). Key benefits of transformational leadership are “increased effectiveness and efficiency, better coordination of the organization’s processes, improved communication between levels and functions of the organization, development and improvement of the capability of the organization and its people to deliver desired results” (International Organization for Standardization, 2015).

Hawkins (2013) developed a model comprising five categories of qualities that describe a transformational leader. These are execution (to deliver excellence), partnership (to leverage the capacities of the team), others (to develop the followers), communication (to inspire performance) and self (to set personal example) (Bass, 1995; Tracey & Hinkin, 1998; Mester, Roodt & Kellerman, 2003; Barbuto, 2005; Avolio & Bass, 2007; McLaggan, Bezuidenhout & Botha, 2013; Ahmad et al., 2014; Hughes, 2014; Giddens, 2017).

The continuum of leadership developed by Bass (1985) consists of transformational leadership at one side of the continuum and laissez-faire leadership on the other side. The continuum has transactional leadership at its mid-point. Giddens (2013) listed six types of leadership styles: autocratic, democratic, laissez-faire, transactional, shared and transformational. These styles of leadership reside along the continuum.

6.6.2 Attributes and Criteria

Six attributes of transformational leaders were identified by Giddens (2013). These are followers, vision, communication, decision making, change and social power. To fit into the role as a transformational leader, a leader needs to possess characteristic attributes including, but not limited to, being motivational, inspirational, a critical thinker, influential and having good judgement.

Bass (1990) quoted Alexander the Great who said: “An army of sheep led by a lion is better than an army of lions led by a sheep.” The progress of the organization rests on the leader and the leadership style he or she implements. A laissez-faire leadership will cause low productivity and breakdown of the organization. A transformational leader creates a culture of hard work and motivates the organization to meet goals. The Multi Leadership Questionnaire (MLQ), developed by Bass in 1995, can be used to assess, classify and rate a leader against principles of transformational leadership (Avolio & Bass, 2007).

6.6.3 Theoretical Links

Transactional leadership theory was first described by James MacGregor Burns as a relationship between a leader and follower, in which there is a higher level of reciprocal motivation and the exhibition of a single value system (Xu, in press). Bass expanded on Burn's work, stating that a transformational leader is a visionary, strong personality. Bass mentioned four components of transformational leadership: "Ideal impact, strong motivation, intellectual stimulation, and personal consideration" (Xu, in press).

6.6.4 Context to Advanced Practice Nursing

There is need for leadership at the bedside to be transformed for the APN to produce positive results. The opposition by the medical profession, the lukewarm attitude of governments towards APN programmes and the doubts about the quality of APN demand transformational leadership. The APN needs to take advantage of his/her autonomy and provide quality patient-centred care to the community, in order to gain trust from the community, and all other stakeholders, including medical doctors (Adjapon-Yamoah 2015). To transform nursing in sub-Saharan Africa, there is need for transformational leaders. This is because of the poor image of nursing reported by the majority of the stakeholders. There is need to rebuild trust with the population served especially APNs who are given an extended role.

6.6.5 Exemplars (first 3 from concept analysis)

The three most important exemplars for Transformational Leadership are:

- Scarce resources management
- Changing curriculum
- Inter-level patient referral

6.6.6 Interrelated concepts

The interrelated concepts for Transformational Leadership are:

- Nursing case management
- Systems thinking
- Governance

6.7 GOVERNANCE

Governance refers to the legally recognised structures and procedures that are created to guarantee "accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation" in an organization, institution or

society (Page, 2013; UNESCO, 2017). Governance involves following the rules, values and norms set by an institution of state or nation in order to manage the affairs of the institution transparently, state or nation appropriately. It extends beyond the arms or organs of government; it is a culture and the environment in which the stakeholders of the organization interact. Governance differs from management in that management refers to planning and implementing a project and monitoring the processes to achieve the expected result. Governance is characterised by ‘power relationships’, ‘policy formulation and resource allocation processes’, ‘decision making processes’ and ‘processes of accountability’ (UNESCO, 2017).

6.7.1 Scope

Governance entails participatory action in two domains, namely: “policy authorization and policy implementation” i.e. “collective choices and operational choices” (Page, 2013). Policy authorization refers to the making of laws and allocation of resources in order to guide the delivery of organizational goods and/or services, while policy implementation applies the laws made and the resources available to deliver the organizational goods and/or services (Page, 2013).

The scope of governance in nursing ranges from state or national level, where the chief nursing officer is the accountable person, to institutional level, including to the bedside of the patients in hospitals and clinics and other healthcare facilities in the community. Three terms define the scope of governance in nursing. These are professional governance (empowering bedside nurses to contribute to decisions on practice standards, policies, procedures, resource allocation, research and quality improvement), clinical governance (the extension of national healthcare governance to the clinical practice environment level to enable the provision of quality healthcare to the population), and shared governance (the model of healthcare governance in which nurses are given the autonomy and responsibility to control their practice and the setting in which the practice) (Anthony, 2004; Bishop, 2009; Santos et al., 2013; UC Davis Nursing, 2017).

6.7.2 Attributes and criteria

‘Good’ governance is frequently used to define the characteristics of preferred attributes of governance. Investors in healthcare believe that good governance helps to provide the environment to reduce poverty and sustain human development towards meeting the sustainable development goals (Sheng, 2017). Attributes of good governance include

participation, consensus orientation, accountability, transparency, responsiveness, effectiveness and efficiency, equitability and inclusiveness, and rule of law (Sheng, 2017).

- **Participation** refers to the involvement of all stakeholders of an organization or state in decision making and allocation of the institution's or state's resources. This participation could be direct or indirect (through recognised organisations or representatives).
- **Rule of law** demands that a fair legal framework is enforced impartially to protect human rights, especially of the vulnerable. This requires an incorruptible and independent legal arm or judiciary.
- **Transparency** demands all decisions taken by the organization are done through the approved processes and communicated to all members of the organization.
- **Responsiveness** requires the organization serves the constituents timely. The actions and inactions of a government affect the stakeholders to different extents. A responsive government increases the level of satisfaction and commitment of the stakeholder.
- **Consensus orientation** is the ability of the organization or government to mediate and synthesize all the differing views of the stakeholders in order to reach agreement on a particular issue. Understanding of the organization's history, culture and social context is essential in consensus building.
- **Equity** ensures that all members, particularly vulnerable groups, are included in policy making and distribution of organizational or societal resources.
- **Effectiveness and efficiency** is a characteristic of good governance in which results are produced to meet the needs and objectives of the organization or society. Efficiency demands the sustainability of the environment, while using resources and producing by-products.
- **Accountability** is essential for good governance. Government must be transparent in the use of organizational or societal resources, keeping accurate records and communicating to the stakeholders timely (Sheng, 2017).

6.7.3 Theoretical links

Two major theories are useful in the study of governance. These are theories of rational choice institutionalization (public choice principal-agent) and sociological institutionalization (policy network implementation network).

Rational choice institutionalization has its background in the economic view of political behaviour, assuming that actors in politics are motivated by incentives to increase their self-interest. As a result, governance is studied through the examination of interest of actors, information, available incentives and the power relationships within the organization (Page, 2013).

Public choice theory studies the interest of political actors and the institutions that serve as their intermediary with a focus on collective decision making or coalitions.

Principal agent theory, on the other hand, uses core assumptions (hierarchy, symmetric information, divergent interest between policy authorizers and implementers) to analyse the interest, information and incentives of the implementers and authorizers (Page, 2013).

Sociological institutionalism believes that the institution and the individuals are related to each other and studies those relationships with the organizational rules and regulations. It deals with the networks between the actors with the purpose of authorization or implementation of policies. Policy networks study the relationship among the actors that influences policy problem or programme (Page, 2013).

Implementation networks study the association and information flow between institutions that are involved in the delivery of organizational goods and/or services. These organizations collaborate to deliver because of policy mandates, collaborative problem solving opportunities, gains in power, legitimacy or resource dependence (Page, 2013).

Kantner's (1993) theory of structure power forms the foundation of shared governance. Kantner stated that six conditions are necessary for organizational empowerment. These are opportunity for advancement, access to information, support, resources, formal and informal power. Formal and informal power give the nurse access to structures (resources, information, opportunity and support) to be empowered in order to produce results (Anthony, 2004; Belcourt et al., 2017).

6.7.4 Context to Advanced Practice Nursing

The shared governance model encourages major healthcare decisions taking at the point of delivery, and this demands government and other regulatory stakeholders of nursing and healthcare to expand the scope of practice to give APNs the autonomy to take such decisions. At the Advanced Practice Nursing level, a nurse is given autonomy to take most decisions

concerning care and administration. The implementation of Advanced Practice Nursing in sub-Saharan Africa is expected to face opposition by the medical profession, and face barriers caused by the weaknesses of nursing regulatory bodies and the apathy of governments towards APN programmes. Advanced Practice Nurses need to take advantage of the authority bestowed on them at the practice level to build a good image for the speciality.

6.7.5 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Governance are:

- Financial audit
- Clinical audit
- Universal coverage

6.7.6 Interrelated concepts

The interrelated concepts for Governance are:

- Systems thinking
- Transformational leadership

6.8 HEALTH SYSTEMS THINKING

Systems thinking is a quality improvement process in which the understanding of the relationships and interaction between the components of a system is engineered to generate synergy in the system (World Health Organization, 2009).

6.8.1 Scope

The purpose of a health system is to “improve health and health equity in ways that are responsive, financially fair, and make the best, or most efficient, use of available resources” (World Health Organization, 2009). The World Health Organization (2009) stated that a health system “consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health”. The scope of health systems thinking covers inputs, processes, output, outcomes, impact, feedback, flow, control and context.

6.8.2 Attributes and criteria

Seven characteristics of systems are outlined by the World Health Organization (2009). These are self-organizing, constantly changing, tightly-linking, governing by feedback, non-linearity, counter-intuitiveness and resistance to change.

Systems thinking has four elements:

- Systems organization: leadership and governance
- Systems network: to understand and manage stakeholders, web of all stakeholders and actors, individuals, institutions
- Systems dynamics
- Systems knowledge: managing content and infrastructure.

System level interventions are targetted at seven system building blocks, namely: governance, financing, human resource, information, medical products, vaccines and technologies, service delivery and multiple building block (World Health Organization, 2009). The health system consists of leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, and health information systems and people (World Health Organization, 2009).

6.8.3 Context to Advanced Practice Nursing

The Child Health Nurse Practitioner and other Advance Practice Nurses act in an expanded role that offers them the opportunity to manage health facilities and programmes. To be able to expand access to quality healthcare at an affordable cost, there is need for an understanding of the health system and strategies that work across the system. Health systems thinking provides a process to aid the formulation of strategies that produce the best outcomes at all levels in the health system.

6.8.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Health Systems Thinking are:

- Quality improvement project
- Memorandum of understanding
- Development of a Community outreach programme

6.8.5 Interrelated concepts

The interrelated concepts for Health Systems Thinking are:

- Influencing curriculum
- Clinical assessment
- Quality of care

6.9 QUALITY OF CARE

Quality is defined as meeting or exceeding the expectations of the population served (Armstrong, Geyer, et al., 2013). Quality practice is the extent to which healthcare services

achieve desired outcomes and is consistent with current evidence (Hughes 2008). It can also be defined as conforming to specified standards of a product or service (Armstrong, Geyer, et al., 2013).

6.9.1 Scope

The World Health Organization (2006) defined quality of care in six dimensions. These are effectively delivering evidence-based healthcare that responds to the needs of the client (individual, family or community); delivering healthcare in an effective way to maximize the use of resources and prevent wastage; healthcare delivery that is accessible, timely, geographically reasonable and in settings where the human and other resource are appropriate for the needs of the clients; the delivery of patient-centred care, delivery of culturally acceptable healthcare that considers the health aspirations of the clients; delivering healthcare which is equitable and not discriminatory against gender, race, location or socioeconomic status; and delivery of care that is safe, thus minimizing the risks to healthcare users.

The Royal College of Nursing (2017) stated five key themes that are frequently mentioned in policy documents regarding quality healthcare. These are patient centeredness and meeting patient needs; information use in healthcare; keeping standards up-to-date; developing staff; and leadership. These five themes are interconnected. Together they provide a framework to look more closely at those things that make the difference to quality of care.

The scope of quality practice in nursing then includes: patient safety, evidence-based practice, ethical practice, equity, appropriateness and timeliness, accessibility, resource management and client centeredness (World Health Organization 2006).

6.9.2 Attributes and criteria

Aside from the six dimensions that define quality, there are three major roles that characterise quality. These roles are policy and strategic development, healthcare provision and communities and services.

Healthcare policy and strategic development deals with national or provincial levels, where decisions that affect the standards of care are made. At this level, the aim of the government is to keep the whole healthcare system under constant review, in order to develop responsive strategies to improve quality across the healthcare system.

Armstrong *et al.* (2013) classified quality into seven dimensions. These are fitness for purpose (producing the product the system is made to produce), exclusivity (gaining access to what is not common), zero effect (flawless product), reliability (the product can perform when it needs to), efficiency (producing the best result with the minimum possible inputs), and satisfying the needs of customers, and conformance to standards (Armstrong, Geyer, et al., 2013).

6.9.3 Context to Advanced Practice Nursing

Quality is very important to nursing. Armstrong *et al.* (2013) stated that every nursing institution is legally required to produce quality services. Quality is regulated by nursing councils, departments of higher education, national accreditation boards, departments of health and other bodies legally instituted to do so (Armstrong, Geyer, et al., 2013). Most of the money used to fund nursing education and practice arises from the taxpayer and as investors, the tax payers demand quality. Political leadership is also increasingly demanding quality, especially in the public healthcare institutions (Armstrong, Geyer, et al., 2013). Provision of quality service is inherent in every nurse or nursing organization by virtue of their training and values (Armstrong, Geyer, et al., 2013). Every institution is under pressure to produce quality so as to be credible in the local and international community (Armstrong, Geyer, et al., 2013).

Every successful organization has an ongoing quality improvement process. For Advanced Practice Nursing to have an impact on society, there is need for a sustained quality management system (Armstrong, Geyer, et al., 2013; International Organization for Standardization, 2015).

6.9.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Quality of Care are:

- Clinical audit
- NIMART
- Universal coverage

6.9.5 Interrelated concepts

The interrelated concepts for Quality of Care are:

- Research dissemination
- Teaching

- Influencing curriculum

6.10 CLINICAL ASSESSMENT

Clinical assessment is the process of gathering patient information through patient history taking, physical assessment, laboratory examination and imaging studies to guide the clinician's and patient's decision making processes, especially in the selection of treatment or referral for an appropriate treatment (Fernandez, Benito & Mintegi, in press; Mcalpine, 2002; Lata & Elliott, 2007; Waghel, Wilson & Salem, 2016). It is difficult to assess and diagnose children. The assessment of children demands special skills that are broader than those normally taught in general nursing or medical curricula. Being able to diagnose correctly, treat or timely refer a child for appropriate treatment produces good outcomes and reduces child mortality as found by Cootes (2010).

6.10.1 Scope

Clinical assessment, as defined above, encompasses head to toe assessment, laboratory examination and imaging studies. Clinical assessment is very important in patient care, as the decision making about the patient's problem and the treatment selection depends on it (Mcalpine, 2002; Mulaudzi, 2015; Waghel, Wilson & Salem, 2016; Rosylyn Rescue, 2017). If patient assessment is missed, the patient may deteriorate or die if the condition is life threatening (Cootes, 2010; Mulaudzi, 2015). A continuum of assessment could place accurate problem finding at the one end and missed diagnosis at the other end along the continuum. Consultation skills are needed by the practitioner to be able to conduct assessment and make decisions (Greveson, 2013).

6.10.2 Attributes and Criteria

Complete assessment includes the collection of information on the biopsychosocial and spiritual aspects of a patient. The practitioner consults with the child on the initial visit. In the case of an emergency, assessment skills are particularly important in managing children, as the situation itself creates anxiety for the caregiver and the family (Cootes, 2010). Using a validated assessment checklist can help in accurately diagnosing the child's problem (Cootes, 2010). Various local guidelines such as the Integrated Management of Childhood Illness (IMCI) and the ABCDENTTT checklists are available to assess and classify unwell children. Other tools for assessing the sick child can be found at the Spotting the Sick Child website <https://www.spottingthesickchild.com/> (Cootes, 2010).

The ABCDENTTT checklist states what to look for in an emergency child assessment. This is a three minutes checklist, including the child's behaviours and colour; assessment of the airway, breathing and circulation; looking for any disability; assessment of the ear, nose and throat; taking temperature and abdominal examination (Cootes, 2010). Fernandez et al. (2017) reported a paediatric triage which is made of three components, i.e. circulation, breathing and appearance. South Africa uses the Emergency Triage Assessment and Treatment (ETAT), the IMCI, Emergency Triage Assessment and Treatment – South Africa (ETAT-SA), South African Triage Scale (SATS), Revised Paediatric SATS (P-SATS) and the Paediatric South African Triage Scale Assessment and Treatment (P-SATSAT) (Cheema, Stephen & Westwood, 2013).

Laboratory studies include blood, tissue, excreta and fluid assays that are examined using various methods in the laboratory to arrive at the root cause of a particular illness or disease, and finding the most effective treatment /medication to such aetiology (Miles et al., 2006; Donaldson et al., 2008; Van den Bruel et al., 2011). Imaging studies are the various type of scanning machinery that are used to visualize body tissues to find abnormality or confirm normality (Rejeswari & Jaganath, 2017; Sodervic et al., 2017).

6.10.3 Context to Advanced Practice Nursing

Advanced Practice Nurses have an extended role to diagnose and manage medical conditions (Greveson, 2013). Accurate diagnoses can only be realised through a knowledge and skills of assessment (Mutea & Cullen, 2012; Mulaudzi, 2015; Sodervic et al., 2017). A wrong diagnosis increases the cost of care and exposes the client to risks of deterioration or death and possible medical litigation (Greveson, 2013; Zalts et al., 2017). Competent clinical assessment, clinical decision making and treatment selection are, therefore, inseparable. An error in one aspect creates the opportunity for error in the subsequent stage. The Advanced Practice Nurse's training, therefore, must be based on sound clinical assessment, decision making and treatment selection skills to overcome the doubt about the credibility of the APN by the medical profession and the society as large.

6.10.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Clinical Assessment are:

- Assessing critically ill children
- Assessing for diarrhoeal diseases
- Assessing for child abuse

6.10.5 Interrelated concepts

The interrelated concepts for Clinical Assessment are:

- Teaching
- Quality of care
- Clinical decision making

6.11 CLINICAL DECISION MAKING

Clinical decision making, synonymous with clinical diagnosis, is the process of deciding on the health status of the client, in order to select the best treatment that responds to the client's condition, with the primary purpose of improving the health of the client and community (Panagiotou, 2013; Bordini, Stephany & Kliegman, 2017; Nursing and Midwifery Board of Ireland, 2017; Zalts et al., 2017). This decision is made based on the information gathered from the clinical assessment. Clinical decision making, therefore, is the process of making a choice or choices out of many healthcare options with the complete involvement of the patient in order to provide quality and acceptable care for the client (Smith, Higgs & Ellis, 2008; Greveson, 2013)

6.11.1 Scope

The Royal College of Nursing redefined nursing as “the use of clinical judgement in the provision of care to enable people to improve, maintain, or recover health to cope with health problems, and to achieve the best possible quality of life whatever their disease or disability, until death”. This definition emphasises the importance of clinical decision making in nursing, and left the boundaries of nursing open for expansion of scope of practice for new categories (Standing, 2010). The decisions nurses make have the potential to influence healthcare to a large extent, as they are the majority in every health system (Thompson et al., 2013). Not all decisions can be classified as correct, and simultaneously the care preferences of patients differ largely, leaving healthcare treatments varied (Greveson, 2013; Thompson et al., 2013). Clinical decisions must be based on current evidence, clinical expertise and patient preferences (Ackley et al., 2008; Greveson, 2013). Decision making involves making action-related choices and sometimes doing nothing (Smith, Higgs & Ellis, 2008). The continuum of decision making could then be described as having error to one extreme, accurate decision to the far positive, with doing nothing at the middle of the continuum.

6.11.2 Attributes and Criteria

Attributes that define decision-making include:

- Uniqueness: the decision-making process is unique in that even though there might be similarities in patients' conditions, the individuals are different hence decision is made on the unique nature of the problem and the patient.
- Certainty: this refers to the assessment data available and the guidelines in using that data to arrive at an accurate decision on the client.
- Criticalness: this is the value of the decision with regards to the outcome of the problem and the consequences of wrong decision making.
- Stability: this defines the extent to which the patient's problem is changing during the process of decision making. A changing situation means the data is being collected while decision making is ongoing, meaning previous data may not be relevant for decision making in a short while, making the decision making a dynamic process.
- Urgency: the extent to which the decision needs to be made quickly or can be delayed.
- Similarity: this is the extent to which the decision being made now resembles decisions made previously.
- Congruence/conflict: this defines the process in which the factors needed to make the decision correspond or conflict with each other.
- Number of variables: the factors or variables that are considered in the decision making process.
- Relevance of variables: this describes the extent to which the data collected gives direction to a particular decision or otherwise. It also defines which of the variables are important for a particular diagnosis.
- Risk: the probability of negative outcomes due to the decision made (Smith, Higgs & Ellis, 2008).

6.11.3 Context to Advanced Practice Nursing

The APN is to demonstrate timely use of clinical diagnostic investigations and competence in therapeutic APN interventions (pharmacologic and non-pharmacologic) (Nursing and Midwifery Board of Ireland, 2017). The role of the APN is an extended one and the demand for accurate diagnosis is essential as the APN's roles are new in many countries and the population will be observing the capabilities of the APNs in order to decide whether to trust them (APNs) with their healthcare (Greveson, 2013).

6.11.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Clinical Decision Making are:

- Critically ill child
- Use of clinical guidelines
- Clinical audit

6.11.5 Interrelated concepts

The interrelated concepts for Clinical Decision Making are:

- Quality of care
- Teaching

6.12 TREATMENT SELECTION

Treatment selection is the selection of appropriate and cost-effective treatment that responds to patients' needs for a requisite period of time (Greveson, 2013; Management Sciences for Health, 2017). The World Health Organization used the term 'rational use of medicines' to mean the selection of appropriate medicine with the right dose and schedule that responds to the patient's problem at a cost that the patient can easily afford (Management Sciences for Health, 2017). It is important for the practitioner to empower the care giver and give undistorted information on treatment options for the care giver to make an informed choice (Greveson, 2013).

6.12.1 Scope

Treatment selection comprises pharmacological and non-pharmacological interventions, both psychological and alternative (Catalá-López et al., 2015, 2017; Collins-Bride et al., 2016). Non pharmacological treatments comprise psychological interventions and complementary and alternative treatments such as dietary interventions, supplemented with fatty acids, vitamins, minerals, amino acids, herbal treatment, homeopathy and mind-body interventions, including massage, chiropractic, and acupuncture (Catalá-López et al., 2015, 2017; Collins-Bride et al., 2016).

A continuum of treatment selection could include accurate cost-effective treatment selection at the far one end of the continuum and the irrational medication at the other side. Informed patient decision making is important in treatment selection to prevent medico-legal litigations (Greveson, 2013).

6.12.2 Attributes and Criteria

Robles et al. (2012) stated that four things that affect treatment selection are the patient's preferences, beliefs of the patient's parents and family, the effectiveness of the treatment and the side effects of such treatment. Alternative treatments exist for many medical conditions: parental education, affordability, reimbursement mechanism, availability of treatment (Patten et al., 2013). Romvarski et al. (2007) stated that patient characteristics, the availability of alternatives and the framing of the alternatives to the patient by the practitioner influence their choices. When the option is framed as gain, patients overlook adverse effects and vice versa (Romvarski, Murray & Proctor, 2007; Greveson, 2013). Herbal and other forms of medicine are being inculcated into the orthodox medical systems in sub-Saharan Africa (Asase & Kadera, 2014; Aziato & Antwi, 2016; Aziato & Odai, 2016), increasing the alternatives for the clients and the healthcare practitioner.

Clinical guidelines and pathways are essential in selecting treatment for patients, especially those with multiple conditions (Hewelt et al., 2015).

In South Africa, Primary Health Care Nurses are given standard treatment guidelines and essential medicine list to guide them in practice. It was discovered that the guidelines were effective in selection of treatment for the citizens that used the services (Sooruth, Sibiya & Sokhela, 2015).

6.12.3 Context to Advanced Practice Nursing

The APN roles are new in many countries and the population will be observing the capabilities of the APNs in order to trust them (APN) with their healthcare (Greveson, 2013). Opposition from the medical profession and medical doctors, and the lack of interest from some stakeholders, requires the APN to be competent in empowering the patient to select the appropriate treatment, in order to win the trust of the population (Greveson, 2013).

6.12.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Treatment Selection are:

- Critically ill child
- Clinical pathways
- Diarrhoeal diseases

6.12.5 Interrelated concepts

The interrelated concepts for Treatment Selection are:

- Quality of care
- Clinical assessment
- Clinical decision making
- Nursing case management

6.13 NURSING CASE MANAGEMENT

Case management refers to the actions taking by the Advanced Practice Nurse in coordinating ongoing comprehensive medical services (assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of healthcare) that responds to the needs of the patient, family and community (Zeng et al., 2016). It is defined, by the Commission for Case Manager Certification (2017), as the process in which the practitioner collaborates with the patient and other healthcare professionals in the assessment, planning, implementation, monitoring and evaluation of healthcare services.

6.13.1 Scope

Case management encompasses patient assessment, diagnosis, treatment selection, monitoring of progress, referrals, healthcare and resource management. Every stakeholder in case management gains when the case manager efficiently executes the case management process (Commission for Case Manager Certification, 2012). Which means that stakeholders may experience negative consequences from poorly executed case management processes.

6.13.2 Attributes and criteria

Case management requires advocacy, effective communication, health resource management, promotion of quality healthcare at affordable cost (Commission for Case Manager Certification, 2012). Case management is not a profession on its own, but a cross-disciplinary and an interdependent practice, that could be headed by a nurse, doctor, social worker, counsellor or other capable allied healthcare professionals (Commission for Case Manager Certification, 2012). Case managers owe their clients the coordination of safe, timely, effective, efficient, cost-effective, equitable and patient-cantered care. The optimal benefits of case management are derived from an organizational climate that promotes direct, open, honest collaboration and communication among the manager, all support care providers, the funder/payer and the primary carer.

6.13.3 Context to Advanced Practice Nursing

The Advanced Practice nurse is more likely to be the most qualified and knowledgeable person in a Primary Health Care setting. He or she will automatically become the case manager and has the responsibility for managing the process of care. He or she will probably play the dual role of primary care provider and case manager. It is important for the APNs to be competent in the case management process.

6.13.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Nursing Case Management are:

- Inter-level patient referral
- Use of clinical guidelines
- Clinical audit

6.13.5 Interrelated concepts

The interrelated concepts for Nursing Case Management are:

- Quality of care
- Clinical assessment
- Clinical decision making
- Treatment selection

6.14 CHILD MORBIDITY

Child morbidity is the percentage of children who contracted a disease, fell ill or were injured within a specific period of time in a defined population. Child mortality is the number of child deaths per 1000 live births in a specified geographical or political location (Nutor, 2012; Mulaudzi, 2015; USAID, 2015; Hendricks, McKerrow & Hendricks, 2016; Masuku & Owaga, 2016; Lange & Klasen, 2017).

6.14.1 Scope

The World Health Organization (2011) defined health as “the state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”. Child morbidity can then be described along the health-illness continuum: having high level of health (10) to the right of the continuum and premature death (0) at the far left of the continuum, with neutral/no disease state at the middle (5) (kalenaspire.com, 2017). A sick child is then defined as a child who is classified at level 4 or less on the continuum.



Figure 6.29: Scope of Child Mortality

Source: (kalenaspire.com, 2017).

6.14.2 Attributes and criteria

Diarrhoeal disease is the second leading cause of child mortality in the world, i.e. 2195 deaths per day worldwide (Centers for Disease Control and Prevention, 2015). For a child with HIV/AIDS, the rate of death is 11 times greater. Severe malnutrition and poverty are major predictors of child death (Hendricks, McKerrow & Hendricks, 2016). Child displacement during wars and other sources of disaster contribute to child morbidity and mortality (Avogo, 2010). Communicable diseases, upper respiratory infections (mainly pneumonia), diarrhoeal diseases, malaria, HIV, severe malnutrition and neonatal sepsis are major contributory factors to child mortality in sub-Saharan Africa (African Leadership for Child Survival, 2015; USAID, 2015; Kassebaum et al., 2017).

The African Leadership for Child Survival (2015) stated that having skilled birth attendants, engaging in new-born care, integrated community case management, stunting, immunization, family planning, PMTCT, and social behavioural change will improve child mortality rates in sub-Saharan Africa. The researcher is convinced that the initiatives stated by the African Leadership for Child Survival (2015) will be better implemented or driven by Child health Nurse Practitioners in sub-Saharan Africa.

6.14.3 Risk factors

The WHO has identified several risk factors to child morbidity and mortality. Risk factors include: country of birth, poverty, neonatal age, weight-for-age, preterm birth, gender, place of residence (rural, slum or urban). Some countries expose the child to morbidity and mortality more than others. Socioeconomic status of the child and family also have an influence on child morbidity and mortality (World Health Organization, 2006c). Babies who are less than 24 hours old are at the highest risk of death (World Health Organization, 2006c). Small babies are at higher risk of death. Preterm babies are at higher risk to diseases and death compared to term babies. Boys have higher morbidity rate compared to girls. Living in rural

areas and urban slums puts the child at higher risk of diseases and death compared to those in urban centres (Kandala et al., n.d.; Kimani-Murage et al., 2014).

6.14.4 Assessment

It is difficult to assess and diagnose children; it is a frightening situation to the medical professional and all those involved in the child care process, including the child's family (Cootes, 2010). The assessment of children demands more specialized skills than those of general nursing or medical skills. Being able to correctly diagnose, treat or timely refer a child for appropriate treatment produces good outcomes and reduces child mortality (Cootes, 2010). Various guidelines are available in assessing and classifying unwell children, for example, the IMCI case management checklist (World Health Organization, 2006c) and the ABCDENTTTT checklist (Cootes, 2010). These guidelines give the practitioner direction in child assessment and timely decision taking.

6.14.5 Clinical management

Timely management of childhood illness is very important as children are very vulnerable and their conditions deteriorate quicker than adults (Cootes, 2010). The management is divided into three main domains:

Primary prevention: this involves prevention of disease and improving health status. This involves conducting child, family and community assessments to educate them on how to prevent illnesses and live in good health, through health promotion activities.

Secondary prevention: In the event of a child falling ill, or contracting a disease, the practitioner conducts a quick assessment, diagnoses the disease or illness and then engages in curative management to restore health to the child.

Tertiary prevention: The child who suffers a chronic disease or disability, due to a disease process or injury, is managed and rehabilitated respectively by the practitioner.

6.14.6 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Child Morbidity are:

- Managing adverse events
- Managing critically ill children
- Managing pneumonia

6.14.7 Interrelated concepts

The interrelated concepts for Child Morbidity are:

- Quality of care
- Clinical assessment
- Clinical decision making

6.15 MEDICAL RECORD MANAGEMENT

A record is an account of an event, either written or in other formats, tangible or intangible, set down to preserve its content. In a formal organization, it is a document created to preserve evidence of phenomena for evidential, legal, confidential and safety purposes (University of Adelaide, 2009). A medical record includes accurate information on a client's past and present illnesses and the services by the professional providing such services. An accurate medical record contains adequate data describing the patient, the diagnosis, the reason why the patient attended the identified hospital, the treatment provided and the practitioner responsible for the services (World Health Organization, 2006d). A multifunctional document that communicates critical information on clients medical care within healthcare stakeholders is termed a medical record (Wong & Bradley, 2009). A medical record identifies who the patient is, who provided care for the patient and the prognosis of the patient 's condition (World Health Organization, 2006d).

Medical record management refers to the organizational policies, regulations and procedures governing the collating, handling, storage and use of patient medical records (World Health Organization, 2006d; Bali et al., 2011; Jefferson Lab, 2017).

6.15.1 Scope

An accurate medical record is important for continuity of care, legal litigations, and research purposes and quality improvement activities. Quality improvement of every health system depends on its health record keeping. If the data kept is incorrect or incomplete, the quality improvement systems based on such data will be ineffective (Wong & Bradley, 2009; Katuu & van der Walt, 2016). The increasing volume of patient information and the demand for research lead to various innovations of data capture. Electronic data capturing methods are very efficient and easily retrievable (Brit, 2009).

6.15.2 Attributes and criteria

There are four major sections of a medical records:

- Administrative: patients' demographic and socioeconomic data
- Legal: signed consent forms for a specific health service or treatment

- Financial: the records on payments and the costs of health services provided to the patient
- Clinical: the information on care provided for the patient, whether on admission or at the out-patient department.

Medical records are used to: document the process of illness and treatment; communicate between healthcare professionals providing care for the same patient; provide continuity of care; conduct research; and collect health data. Bali *et al.* (2011) stated six objectives of keeping medical records: to monitor the patient; for medical research; for medical education; for insurance, criminal, personal injury, workmen's compensation and will cases; for malpractice suits; and for medical audits.

Medical records are kept for a specified period and then destroyed, but some information on clients (full name, admission and discharge dates, name of attending physician, disease and surgical operations done, and discharge summary for each admission) are kept (World Health Organization, 2006d). Bali *et al.* (2011) stated that adult medical records are kept, ideally, for three years. Records on neonates are kept for 21 years, up to age 21 for children and forever for mentally retarded patients and seven years for the purpose of income tax. In South Africa, most health records are kept up to six years after dormancy. For children (less than 18 years) records are kept till 21 years old, for a lifetime for mentally retarded individuals, for 20 years for patients receiving occupation health services and 25 years for clients exposed to asbestos (Katu & van der Walt, 2016).

6.15.3 Context to Advanced Practice Nursing

Medical records are essential to the nurse. It is essential for the APN to keep accurate health records for quality improvement, research, continuity of care, and for legal purposes. For the Child Health Nurse Practitioner, it is extra important because such records are to be kept over a long period of time (Bali *et al.*, 2011; Katu & van der Walt, 2016).

6.15.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Medical Record Management are:

- Patient kardex
- Inter-level patient referral
- Clinical audit

6.15.5 Interrelated concepts

The interrelated concepts for Medical Record Management are:

- Nursing research
- Quality of care

6.16 TEACHING

Teaching is a critical element of Advanced Practice Nurses' professional role (Link, 2009). Teaching is the process in which learners are assisted to acquire knowledge, skills and attitudes through their participation. Learner-centred teaching is advocated over teacher-centred approaches as it stimulates changes in the learner through an intentionally planned curriculum (Sequeira, 2012). Teaching is therefore the process by which the teacher (lecturer, facilitator etc.) guides the learner to acquire certain knowledge, skills and attitudes that are intentionally planned through an institutional curriculum. The teaching and learning encounter can be planned or abrupt but guided by the purpose of the educational programme.

6.16.1 Scope

Teaching and learning are inextricably linked. The concept of teaching in Advanced Practice Nursing covers clinical teaching, patient education and classroom teaching. The CHNP is expected to teach students when they are on clinical or community placement. Clinical teaching should follow concept-based or problem-based approaches, which are able to develop the students' critical thinking (Potgieter, 2012). The complexity of the healthcare system demands more than the mastery of technical skills by the learner - they need critical thinking abilities to cope with the demand of practice. These skills can be acquired through case studies, clinical post-conferences, nursing care planning, and dialectical critique, concept-mapping, interruptions and peer coaching.

Client and family education is the process in which the practitioner empowers the client and the family for them to manage their condition towards a healthier life. Health promotion activities within the community are also the responsibility of the practitioner. The client, in this case, either has the right to take certain decisions or rely on the parents for decision making. It is important for an APN to understand how children learn to be able to educate the child. Understanding the family system and cultures will enable the APN to educate the child and family well.

Teaching in the classroom setting also requires knowledge on educational philosophy, epistemological orientation of the institution and the students' characteristics (World Health Organization, 2016c). Building a good relationship with the university faculty is important for student learning. Evidence shows that nurse education and educator inefficiencies result in inadequate preparation of nurses in the developing world (World Health Organization, 2016c).

6.16.2 Attributes and Characteristics

Nursing education is part of post-compulsory education that is based on adult education principles. In this type of education, the curriculum is instrumental, preparing the student towards specific roles that are relevant to the health workforce (Hughes & Quinn, 2013). This type of education occurs within a National Health Service and higher education contexts (Hughes & Quinn, 2013). Teaching in nursing requires delivery of curricula that bridge the higher educational setting and the clinical setting. The clinical setting is a complex environment that juxtaposes its primary function (patient care) with student teaching. The Advanced Practice Nurse needs to acquire skills that will enable him/her to teach students effectively within the clinical setting, without compromising patient care (Link, 2009; DeNisco & Barker, 2015).

The practitioner needs to be competent in planning the learning programmes for the students, using effective teaching strategies to deliver the lesson, supporting students in their learning, and evaluating students and learning experiences for quality learning improvement (Australian Nurse Teacher Association, 2010; DeNisco & Barker, 2015).

The major component of Advanced Practice Nurses teaching will be clinical teaching and patient and family education.

Ernstze and Bitzer (2012) discovered seven roles and attributes of a clinical teacher:

- Role modelling: conducting oneself professionally with patients and students, caring for patients effectively and holistically, being knowledgeable and expert in one's field of work.
- Facilitating learning: avoiding dominating learning sessions, providing the students the opportunity to explore, guiding students' thinking, providing positive affirmation, and facilitating healthy group dynamics.

- Facilitating and Assessing: providing students with a clear expectation of what the facilitator expects - sometimes this can lead to student anxiety.
- Being approachable: providing the atmosphere for the students to approach and ask questions, running an open-door policy, making time for students, treating students individually and showing willingness to help students.
- Individualisation: determining the learning needs of individual students, planning with students individually and supporting students who are struggling.
- Organization: orientating students to the learning environment and diagnosing the strengths and weaknesses of each student, then clarifying the learning expectations for the students.
- Self-motivation: the clinical educator must be enthusiastic and articulate.

Patient education is essential for the Advanced Practice Nurse, especially those practicing at community level. Patients that are well-educated better understand their condition and manage themselves for a life time (Marcus, 2014). Good communication skills are very important in providing an accurate, timely, complete and, above all, an unambiguous information to the patient.

Marcus (2004) outlined six dimensions of knowledge, four communication competencies and two suites of tools in a verbal communication model of patient education. The knowledge dimensions are: biopsychosocial, functional, experiential, ethical, social and financial. The competencies are: interpersonal communication, non-verbal communication, professional values and counselling skills. The tools are health information seeking and health information behaviours.

6.16.3 Theoretical links

The adult education theory (andragogy) developed by Malcolm Shepherd Knowles (1913-1997) guides teaching in nursing education. Knowles propounded that the student will understand new knowledge better only if it can be connected to prior knowledge acquired. Adult education principles demand that students should be respected, their contribution and prior experiences valued and used to deliver the content. Adults are internally motivated and learn if they find the information can be applied (Hughes & Quinn, 2013).

The EDUCATE model of verbal clinical teaching/education is characterised clinical reaching into five stages(Marcus, 2014):

- Use questioning to enhance patients understanding and information retention ability
- Give patient-centred education-teach to the patient and not to the group of people
- Assess the patient's knowledge about the topic or the condition
- Communicate the information to the patient clearly and effectively for patient understanding
- Address any issues of health literacy and cultural issues related to patient learning.

6.16.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Teaching are:

- Patient education
- Clinical nursing education
- Health promotion

6.16.5 Interrelated concepts

The interrelated concepts for Teaching are:

- Influencing curriculum
- Quality of care
- Transformational leadership

6.17 INFLUENCING CURRICULUM

Curriculum is an intentionally designed learning opportunity provided by an institution to students as an interactive event integrated with learning experiences throughout the programme of study (Hall, 2014). According to Beigi, Keramati and Ahmadi (2011), it is the why, what, when, where, how and the who of teaching and learning.

Professional influence of curriculum occurs at the review and evaluation or pilot testing stage of the curriculum development process, where the practitioner's (stakeholder's) views are sorted on the effectiveness of the curriculum (Parsons & Beauchamp, 2012). Influencing curriculum, therefore, refers to advocating and positively determining the course of teaching and learning in nursing.

6.17.1 Scope

For a curriculum to be responsive and effective, there must be quality input into such a curriculum. The practitioners understand the context and the practice setting in which the nurses are being trained to practice (Caldwell, 1997). The inputs from the practitioners are very important as the nurse is trained to practice in the clinical setting. Quality input will produce a quality curriculum that will produce responsive graduates for the health service. Poor feedback will lead to ineffective graduates in the health system, leading to ineffective practice and poor healthcare outcomes in the population (Haden et al., 2010; O'Donoghue, Doody & Cusack, 2011).

6.17.2 Attributes and criteria

National Academic Press (2002) stated six forces that influence curriculum:

- Intrinsic influences: institutional culture and the curricula time and educational priorities.
- Accreditation, licensure and certification requirements.
- Individual issues, professional and personal factors: the Advanced Practice Nurse is very important in influencing the curriculum as he or she forms part of the professional body and his or her views are essential in the review of the curriculum.
- Professional organizations and stakeholders: these are major stakeholders in the educational curriculum. The Advanced Practice Nurse is a member of the professional organization and can influence curriculum through it.
- Educational laws: legal backings of education systems.
- Resource issues: issues related to funding and human resource for education.

The World Health Organization (2016) stated that the curriculum and implementation competencies of an educator involves the designing of curriculum, developing courses, facilitating clinical reasoning, integrating evidence-based teaching and learning processes. The APN requires understanding of needs assessment, national health priorities, teaching and assessment strategies, evidence-based practice, teacher-student relationship and cognitive, psychomotor and affective development in order to be able to influence curricula (World Health Organization, 2016c).

6.17.3 Context to Advanced Practice Nursing

The APN is a teacher and a practitioner and therefore needs to influence what he or she teaches and practices for quality purposes.

6.17.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Influencing Curriculum are:

- Clinical nursing education
- Curriculum change
- Child health advocacy

6.17.5 Interrelated concepts

The interrelated concepts for Influencing Curriculum are:

- Nursing research
- Teaching
- Transformational leadership

6.18 NURSING RESEARCH

Research is the study or exploration of a defined phenomenon. It is defines as a “diligent and systematic enquiry to validate and refine an existing knowledge and generate new knowledge” (Grove, Gray & Burns, 2014). Research can be qualitative or quantitative.

6.18.1 Scope

Conducting research starts with developing the research proposal that defines and outlines the research process. It involves the adherence to ethical principles, which are regulated by institutional ethical review boards. There is the need to seek approval for the research protocol from the institution and the institutional review board before initiating data collection. It is of utmost priority not to do harm to any animal involved in the research, or damage the reputation of any institution or nation in the study. Privacy, anonymity and confidentiality are essential to the human subjects involved in nursing research. Data collection, handling, analysis and interpretation form the major and material aspect of all research. It is essential to avoid bias and error at these stages in order to arrive at valid and reliable results. Not conducting research means nursing policies and practice will be based on tradition and common sense. The procedures will be static and lack improvement, leading to inefficiency and increased cost of healthcare.

6.18.2 Attributes and criteria

The research process is characterised in four phases:

- Conceptual phase: where the problem is defined and the research process is designed to address the problem. It is also called the planning or the thinking phase.

- Empirical phase: involves conducting data collection and analysis?
- Interpretive phase: where the results of the study are interpreted for meaning.
- Communicative phase: dissemination of the findings in the study.

To conduct research, one needs to understand the research process. Clinical research problems could be identified through the practitioners day-to-day practice issues, clinical audits or conflicting treatment choices. The research could be conducted as part of an institutional research policy or in fulfilment of the requirement of a graduate degree.

This involves the development of the framework that guides the research project. It requires the definition of the research areas and problem, the formulation of the research question or hypothesis, the development of the research design and methods to answer the research question or to prove or reject the hypothesis, and the selection or the development of the data collection tool and the analysis procedure.

The data collection tool is then used to collect data accordingly. The proposed analytical method is used to analyse the data to produce results. Results are interpreted based on pre-defined criteria and then disseminated to the interest group or the general public for utilization.

6.18.3 Context to Advanced Practice Nursing

Nursing practice is evidence based. To continually improve the quality of nursing practice, there is need to engage in contextual nursing research that is practice focused. The APN is expected to provide quality healthcare at an affordable cost to underserved communities. To be able to do that with limited resources, there is need for continuous research to find the most effective way of providing quality and cost-effective care. The researcher needs nursing research skills to be able to synthesize and apply evidence in his or her practice.

For the nursing profession to develop, it needs to base its practice on sound scientific knowledge and theories. This will not be realised without conducting research. Evidence has shown that sub-Saharan Africa is lacking and behind the rest of the world in terms nursing of research (Sun & Larson, 2015). It is important for nurses trained at the advanced level to engage in continuous clinical research in sub-Saharan Africa (Sun & Larson, 2015).

6.18.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Nursing Research are:

- Research protocol
- Literature review
- Writing research report

6.18.5 Interrelated concepts

The interrelated concepts for Nursing Research are:

- Teaching
- Influencing curriculum
- Research dissemination

6.19 RESEARCH DISSEMINATION

Dissemination is a well-planned process in which research findings are exposed to a wider audience, through written and verbal means, for appropriate evaluation and inclusion into policy and healthcare practice to facilitate evidence-based practice (Wilson et al., 2010).

6.19.1 Scope

Research dissemination is essential for evidence to influence policy and practice (Wilson et al., 2010). Evidence shows that the optimum potential of healthcare practice and administration has not yet been realised, due to poor dissemination and inculcation of research evidence into practice (Wilson et al., 2010). Barriers to research dissemination have been identified by the World Health Organization (2014). These include:

- Practitioner perception of evidence: many competing influences and contradictory evidence creates ambiguity and confusion for the healthcare practitioner, who may probably not know where and how to access quality and tailored information to meet practice needs.
- Organizational culture: the way the organization arrives at and makes organizational decisions also influences the way research is valued. Whether the organization arrives at decisions using evidence or brainstorming also influences their interaction with research evidence.
- Unskilled professionals: if the professionals in the organization are not skilled in research appraisal and evidence synthesis, evidence-based practice will be difficult to implement in the organization.

- Research cost and time constraints: due to the short time available for practitioners to make decisions, conducting, synthesizing and inculcating evidence into decision making becomes difficult.
- Overload of information: when practitioners and policy makers have so much research available, in addition to competing interests from lobbyist and other interest groups, it is difficult to make decisions if there are no clear guidelines on decision making in an organization.

Factors facilitating the use of research evidence includes:

- Making research practice friendly, for example, producing practice guidelines through literature synthesis or reviews for clinicians.
- Capacitating the practitioners with the skills necessary to assess, appraise, synthesize and use evidence in practice.
- Collaboration with practitioners to undertake research projects in priority practice areas.
- The use of targeted research communications, such as policy briefs and press releases, to stress the role of research in quality practice.
- A good relationship between researchers and practitioners also creates trust among them which facilitates research uptake.

6.19.2 Attributes and criteria

There is the need for institutions to develop a dissemination strategy to aid in disseminating research findings (World Health Organization, 2014). Steps in developing a research dissemination strategy include: reviewing past strategies, developing the objectives for research dissemination, determining whom to disseminate research to, developing the research dissemination messages, deciding on the approaches to be used in disseminating research, selecting the channels of designation, reviewing the resources available, considering the timing and opportunities that are available, and evaluating the dissemination efforts made (World Health Organization, 2014). Yale Center for Clinical Investigation (2011) stated that good dissemination strategies should have these three features:

- Orientation towards the needs of the audience in terms of language and level of the information. Good language skills are essential for dissemination. The use of simple language, headings, etc. is important.
- Varied in dissemination formats such as written, illustrations, graphical, internet based, community meetings and scientific conferences.
- Capitalizing on the existing partnerships and resource.

6.19.3 Context to Advanced Practice Nursing

Advanced Practice Nursing practice is expected to be evidence-based in order to produce the best patient outcomes. For evidence to be available for use, it needs to be disseminated. Researchers need to build partnership with APNs to promote the utilization of disseminated research into practice, collaborate in clinical research and create an atmosphere for clinical data collection.

6.19.4 Exemplars (first 3 from concept analysis)

The three most important exemplars, by rank, for Research Dissemination are:

- Evidence-base poster development
- Writing a journal article
- Writing research report

6.19.5 Interrelated concepts

The interrelated concepts for Research Dissemination are:

- Nursing research
- Transformational leadership
- Influencing curriculum

6.20 CONCLUSION

The fourteen concepts developed and analysed were then embedded into the curriculum framework as the content of the curriculum.

The following chapter, Chapter 7, describes the Advanced Practice Nursing (Child Health Practitioner) curriculum framework for sub-Saharan Africa.

CHAPTER 7 : THE DEVELOPMENT OF THE CURRICULUM FRAMEWORK

7.1 INTRODUCTION

Curriculum framework in this study refers to a document that guides any academic or research institution to develop a responsive Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum within sub-Saharan Africa. Pennsylvania Department of Education (2017) defined curriculum framework to include “big ideas, concepts, competencies, and essential questions aligned to standards and assessment anchors and, where appropriate, eligible content”. A well-established principle of the use of a curriculum framework is to leave the formulation of the syllabi and lesson plans to the respective countries, if it is internationally based, or to local authorities, if it is national. This allows for flexibility and innovation at the lower level of curriculum implementation (Parsons & Beauchamp, 2012).

The Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework developed in this study for sub-Saharan Africa consists of current context of APN, educational policy statement on CHNP programme, statement of broad learning objectives, structure of the Child Health Nurse Practitioner programme, concepts for the Child Health Nurse Practitioner curriculum, resources required for the implementation of the Child Health Nurse practitioner programme, and teaching and assessment methods (Stabback, 2007).

7.2 CURRENT CONTEXT

Current context refers to the socioeconomic setting within which Advanced Practice Nursing (Child Health Nurse Practitioner) policy is made and the programme implemented (Stabback, 2007).

Sub-Saharan Africa is culturally diverse. The population of the region was 1,033,106,135 in 2017, with a population growth rate of 2.74% per annum. About 43% of the sub-Saharan African population are between the ages of 0-14 years, while 51% are children less than the age of 19. The majority (62%) are rural dwellers while 38% are in urban settlements (including urban slum dwellers). The under-five mortality rate is currently estimated at 81.35 per 1000 live births, while the rate of child (age 5-14years) deaths per 1000 children living at

age 5 was 19.00 in 2016. Neonatal mortality rate is 28.32 per 1000 live births. Life expectancy from birth was estimated at 59.90 in the year 2015.

The population of sub-Saharan Africa is very poor, for instance, about 70% of the sub-Saharan African population are living on less than \$2.00 (R 26.40) per day, while about 48% live on \$1.25 (R16.27) per day (Liu et al., 2016; ECOSOC, 2017). Millions of children (34,134,436; 21.23%) of school going age are not in primary school.

The majority of the healthcare services and resources (human, infrastructure and equipment) are in urban areas and serve the minority of the population. Poorly trained personnel and poorly resourced health services are found in rural areas and serve the (majority) rural population. The rural population is deprived of quality healthcare. Travel, accommodation and upkeep for the rural populace in seeking care in urban centres increases their cost of healthcare services compared to urban dwellers.

Sub-Saharan Africa is mainly battling preventable diseases. The poor nature of child health in sub-Saharan Africa has led to the devastating rates of preventable child morbidity and mortality in the region. The impact of disease not only affects the child at the younger age but can expose the child to many health challenges in adulthood. Primary Health Care is, therefore, an essential healthcare model for the reduction of child morbidity and mortality in sub-Saharan Africa, as required by the SDG 3.

Advanced Practice Nursing programmes that have proven to improve access to cost-effective quality healthcare for the rural, hard to reach, populations are resisted by the medical profession (Pulcini et al., 2010). Physicians prefer lower cadre medical officers whose training is of less quality than nurse practitioners (East et al., 2014). Governments show a lack of interest, and the nursing councils lack capacity and legislative instruments to develop the roles for the APN. There are resource challenges and the nursing labour organizations and education institutions do not advocate for the programme.

Even though some institutions and countries within sub-Saharan Africa have shown interest in APN programmes, they lack contextual benchmarks and role models to guide the development and implementation of ANP programmes. It is against this backdrop that this study developed the Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum

framework to guide institutions and countries in sub-Saharan Africa in the development and implementation of a responsive APN curriculum.

7.3 THE EDUCATIONAL POLICY STATEMENT

This describes the goals of governments and institutions for the Advanced Practice Nursing (Child Health Nurse Practitioner) programme (Stabback, 2007).

Educational policy is influenced by local health needs and international policy. Sustainable Development Goal 3 demands that preventable deaths to new-born babies and children under the age of 5 years should be ended (World Health Organization, 2016b). Countries all over the world are expected to end preventable deaths with at most 12 neonatal deaths and 25 under-5 deaths per 1000 live births by 2030. Sustainable Development Goal 3 also requires that there must be universal coverage of quality healthcare, medicine and vaccines, and vital health services at an affordable cost (World Health Organization, 2016b). The UN also expects all countries to continually increase the amount of money they input into healthcare, increase healthcare workers training and development, and promote recruitment and retention of healthcare in developing countries (World Health Organization, 2016b).

- The Child Health Nurse Practitioner programme shall provide adequate numbers (to be determined by institutions and governments) of quality trained practitioners who are willing to provide patient-centred, evidence-based healthcare for the rural population of sub-Saharan Africa.
- The APN (Child Health Nurse Practitioner) will assist countries in sub-Saharan Africa to meet Sustainable Development Goal 3, which seeks to “*end preventable deaths of new-borns and children under 5 years of age,... reduce under-5 mortality to at least as low as 25 per 1,000 live births*” and “*Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all by 2030*”.
- The Child Health Nurse Practitioner programme will respond to the healthcare challenges of sub-Saharan Africa, thus reducing the communicable disease burden, and by engaging in early detection and prevention of childhood illnesses will reduce the rate of admission to the acute care units.
- The expert team also believes that there must be at least one child health nurse practitioner at every district hospital and Primary Health Care clinic who is competent in the integrated management of childhood diseases (IMCI) and resuscitation of babies.

- The practitioner is expected to be knowledgeable in management and administration as he/she will lead Primary Health Care teams.

7.4 BROAD LEARNING OBJECTIVES AND OUTCOMES

The Broad learning objectives and outcomes stipulate what the Advanced Practice Nurse (Child Health Nurse Practitioner) should know and be able to do when he or she completes the programme (Stabback, 2007). The outcomes are expressed in a range of domains, including knowledge, understanding, skills, competencies, values and attitudes.

The Child Health Nurse practitioner should be knowledgeable and have competent skills and attitudes in the following knowledge domains:

Domain A: Nursing Leadership, Management and Administration

The key responsibilities of APNs in their setting is healthcare governance, leadership, management, advocacy and resource management (SANC & South African Nursing Council, 2005; Duma et al., 2012; East et al., 2014; Sastre-Fullana et al., 2014; Academy of Nursing of South Africa, 2015).

Domain B: Quality Practice

This domain covers issues of quality in healthcare delivery and continuous professional development. Advanced Practice Nurses should be able to identify child healthcare indicators, conduct quality audits and implement quality improvement practices in order to improve access, safety and effectiveness of PHC for children in the community they serve (SANC & South African Nursing Council, 2005; Reid et al., 2016).

Domain C: Ethico-legal Practice and Professionalism

This domain covers the ethos of professional practice. It refers to all the legal aspects of the Advanced Practice Nurse's practice. It comprises the boundaries, rules and regulations, and scope of practice and standards within which the Advanced Practice Nurse must operate.

The APN training must make her or him capable of utilizing ethical theories and principles in paediatric services, adhere to and enforce staff adherence to all relevant ethical codes of conduct set by the nursing profession and regulatory body (Madubuko, n.d.; INEPEA, 2008a; Duma et al., 2012; Lake, 2014). She or he must contribute to the resolution of ethical issues in practice.

Domain D: Education and Research

The CHNP should engage in teaching, mentoring, supervision and coaching, giving feedback into educational curriculum, provide school and community health education and screening (Madubuko, n.d.; SANC & South African Nursing Council, 2005; INEPEA, 2008b). He or she must be able to teach and mentor nursing students in clinical practice (Sastre-Fullana et al., 2014).

Domain E: Advanced Child Health Nursing Practice

Advanced Child Health Nurse Practitioners (CHNPs) are expected to conduct assessment (history taking, physical examination, request and interpret laboratory and imaging studies), diagnose children, prescribe treatment (pharmacological and non-pharmacological), admit, discharge or refer patients and manage cases comprehensively in their practice settings.

Domain F: Attitudes and Values

The CHNP should apply patient centred care principles in caring for the clients. He or she must respect and value the child and family. The CHNP must understand that the final decision on care lies with the child and family and respect their decisions after counselling. The CHNP must be culturally competent and should mostly be able to speak the language of the community served to facilitate communication, confidentiality and trust.

7.5 STRUCTURE OF THE EDUCATIONAL SYSTEM

The Structure of the educational system stipulates the general educational system within which the Advanced Practice Nursing programme will be implemented as outlined in Table 7.1 below. This section of the curriculum framework specifies the duration of the programme, number of school weeks in an academic year, notional hours and associated credits for the Advanced Practice Nursing (Child health Nurse practitioner) programme.

Table 7.1 Structure of the educational system

Variable	Description
Level	Master's level (SAQA exit level 9)
Ontological Orientation	Andragogy and experiential learning approaches
Epistemological orientation	Concept-based curriculum/learning
Total Credit	360 credits
Number of years	2-years full-time
Number of weeks	40 weeks a year
Number of Hours per week	40 hours a week
Total Clinical Hours	800-1000 hours
Internship	One-year post graduation internship

7.6 STRUCTURE OF THE CURRICULUM CONTENT

The structure of curriculum content defines the concepts for the Child Health Nurse Practitioner Programme. The concepts are presented with definition, scope, characteristic features, attributes, exemplars and interrelated concepts in Table 7.2. Table 7.2 is simplified for easy visualization on Figure 7.1 below.

Table 7.2 Module Credits for Child Health Nurse Practitioner Curriculum

MODULE (% OF TOTAL CREDITS)	CONCEPTS	CHARACTERISTIC FEATURES	DEFINITION	EXEMPLARS	References	INTERRELATED CONCEPTS
HEALTH SYSTEM (10%)	Transformational leadership	Execution, partnership, others, communication, self (to set personal example, Ideal impact, strong motivation, intellectual stimulation, and personal consideration	Transformational leadership is the process in which a leader inspires the followers in developing higher order goals and motivating them to reach such goals through the refinement of the followers' worldview and attitudes.	Scarce resource management; inter-level patient referral; changing curriculum	(Bass, 1995; Tracey & Hinkin, 1998; Mester, Roodt & Kellerman, 2003; Barbuto, 2005; Avolio & Bass, 2007; McLaggan, Bezuidenhout & Botha, 2013; Ahmad et al., 2014; Hughes, 2014; Cetin, Sehkar & Kinik, 2015; Giddens, 2017).	Nursing case management ; systems thinking; governance
	Governance	Accountable, transparent, responsive, rule of law, stable, equity, empowerment, inclusive, consensus orientation, effective and efficient	Governance refers to the legally recognised structures and procedures that are created to guarantee "accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation" in an organization, institution or society.	Financial audit; clinical audit; universal coverage	(Anthony, 2004; Bishop, 2009; Page, 2013; Santos et al., 2013; Sheng, 2017; UC Davis Nursing, 2017; UNESCO, 2017).	Systems thinking; transformational leadership
	Systems thinking	Leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, health information systems, systems organization, systems network, systems dynamics, systems knowledge	Systems thinking is a quality improvement process in which the understanding of the relationships and interaction between the components of a system is engineered to generate synergy in the system.	Quality improvement project; memorandum of understanding; development of community outreach	(World Health Organization, 2009).	Influencing curriculum; clinical assessment; quality of care
	Quality of care	Effective, efficient, accessible, acceptable and equitable	Quality is defined as conforming to specified standards of a product or service, i.e. meeting or exceeding the expectations of the population served.	Clinical audit; NIMART; universal coverage	(World Health Organization, 2006b)	Research dissemination; teaching; influencing curriculum

MODULE (% OF TOTAL CREDITS)	CONCEPTS	CHARACTERISTIC FEATURES	DEFINITION	EXEMPLARS	References	INTERRELATED CONCEPTS
GENERIC ADVANCED PRACTICE NURSING CONCEPTS (20)	Clinical assessment	History taking, physical assessment (biopsychosocial, spiritual, emergency) laboratory examination, imaging studies	Clinical assessment is the process of gathering patient information through patient history taking, physical assessment, laboratory examination and imaging studies to guide the clinician's and patient's decision making processes especially in the selection of treatment or referral for an appropriate treatment.	Assessment critically ill children; assessing for diarrhoeal diseases; assessing for child abuse	(Fernandez, Benito & Mintegi, in press; Miles et al., 2006; Donaldson et al., 2008; Cootes, 2010; Van den Bruel et al., 2011; Cheema, Stephen & Westwood, 2013)	Teaching; quality of care; clinical decision making
	Clinical decision making	Pathophysiology, clinical judgement, diagnosis, current-evidence, clinical expertise and patient preferences and characteristics (uniqueness, criticalness, urgency, stability, risks), variables (certainty, similarity, congruence/conflict)	Clinical decision making, synonymous with clinical diagnosis, is the process of deciding on the health status of the client in order to select the best treatment that responds to the client's condition with the primary purpose of improving the health of the client and community.	Critically ill child; use of clinical guidelines; clinical audit	(Ackley et al., 2008; Smith, Higgs & Ellis, 2008; Thompson, 2008; Standing, 2010; Greveson, 2013; Panagiotou, 2013; Thompson et al., 2013; Bordini, Stephany & Kliegman, 2017; Nursing and Midwifery Board of Ireland, 2017; Zalts et al., 2017)	Quality of care; teaching
	Treatment selection	Pharmacological, non-pharmacological (complementary and alternative medicine), pharmacovigilance, cost effectiveness	Treatment selection is the selection of appropriate and cost-effective treatment that responds to patients' needs for a requisite period of time.	Critically ill child; clinical pathways; diarrhoeal diseases	(Greveson, 2013; Catalá-López et al., 2015, 2017; Collins-Bride et al., 2016; Management Sciences for Health, 2017).	Quality of care; clinical assessment; clinical decision making; nursing case management
		Assessment, clinical decision making, treatment selection, referral services, follow-up care	Case management refers to the actions taken by the Advanced Practice Nurse in coordinating ongoing comprehensive medical services	Inter-level patient referral; use of clinical	(Phaneuf, 2008; Commission for Case Manager Certification,	Quality of care; clinical assessment;

MODULE (% OF TOTAL CREDITS)	CONCEPTS	CHARACTERISTIC FEATURES	DEFINITION	EXEMPLARS	References	INTERRELATED CONCEPTS
	Nursing case management	and costing of services, primary healthcare, family centred care, referral system, clinical progress, safe, timely, effective, efficient, cost-effective, equitable and patient-centred, payer, level of care, benefits	(assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of healthcare) that responds to the needs of the patient, family or community.	guidelines; clinical audit	2012, 2017; Zeng et al., 2016)	clinical decision making; treatment selection
CHILD HEALTH NURSE PRACTITIONER SPECIALITY CONCEPTS (30)	Child mortality	Pneumonia, Diarrhoeal disease, malaria, HIV, severe malnutrition and contributing factors (country of birth, preterm birth, poverty, gender, neonate, rural settlement, urban slum settlement, small for age, child abuse)	Child morbidity is the percentage of children who contracted a disease, fell ill or were injured within a specific period of time in a defined population. Child mortality is the number of child deaths per 1000 live births in a specified geographical or political location.	Managing advert events; managing critically ill children; managing pneumonia	(Kandala et al., n.d.; World Health Organization, 2006c, 2011; Avogo, 2010; Cootes, 2010; Nutor, 2012; Kimani-Murage et al., 2014; African Leadership for Child Survival, 2015; Mulaudzi, 2015; USAID, 2015; Centers for Disease Control and Prevention, 2015; Masuku & Owaga, 2016; Hendricks, McKerrow & Hendricks, 2016; kalenaspire.com, 2017; Kassebaum et al., 2017; Lange & Klasen, 2017).	Quality of care; clinical assessment; clinical decision making
	Medical record management	Principles (evidence, legal, confidential, safety, critical information, retention period); Uses (continuity of care, quality improvement, research, medicolegal); Types (paper-	Medical record management refers to the organizational policies, regulations and procedures governing the collating, handling, storage and use of patient medical records.	Patient kardex; inter-level patient referral; clinical audit	(World Health Organization, 2006d; Brit, 2009; University of Adelaide, 2009; Wong & Bradley, 2009; Bali et al., 2011; Katuu	Nursing research; quality of care

MODULE (% OF TOTAL CREDITS)	CONCEPTS	CHARACTERISTIC FEATURES	DEFINITION	EXEMPLARS	References	INTERRELATED CONCEPTS
		based, electronic); Content (demographic, consent, admission, management, discharge, financial)			& van der Walt, 2016; Jefferson Lab, 2017)	
NURSING EDUCATION (10%)	Teaching	Health promotion, health education, clinical teaching, patient education, curriculum, andragogy, learning, assessment, knowledge brokering	Teaching is the process by which the teacher (lecturer, facilitator etc.) guides the student to acquire certain knowledge, skills and attitudes that are intentionally planned through an institutional curriculum.	Patient education; clinical nursing education; health promotion	(Australian Nurse Teacher Association, 2010; Gerrish et al., 2011; Ernstze, Bitzer & Ed, 2012; Hughes & Quinn, 2013; Marcus, 2014; DeNisco & Barker, 2015).	Influencing curriculum; quality of care; transformational leadership
	Influencing curriculum	Advocacy, professional organization, needs analysis, Programme development, Programme evaluation, feedback	Influencing curriculum refers to advocating and positively determining the course of teaching and learning in nursing.	Clinical nursing education; curriculum change; child health advocacy.	(Caldwell, 1997; National Academic Press, 2002; Parsons & Beauchamp, 2012; World Health Organization, 2016c)	Nursing research; teaching; transformational leadership
NURSING RESEARCH (30)	Nursing Research	Research proposal, data collection, Data analysis, Interpretation, dissemination, principles (privacy, anonymity and confidentiality, ethical approval, institutional approval)	Nursing research is defined as a “diligent and systematic enquiry to validate and refine an existing knowledge and generate new knowledge”.	Research proposal development; literature review; writing research report	(Brink, Walt & Rensburg, 2013).	Teaching; influencing curriculum; research dissemination
	Research dissemination	Institutional factors (dissemination strategy, organizational culture, incentives); Values and skills (academic integrity, plagiarism, academic writing); Types (research report, journal papers, conferences presentation, research brief)	Dissemination is a well-planned process in which research findings are exposed to a wider audience through written and verbal means, for appropriate evaluation and inclusion into policy and healthcare practice to facilitate evidence-based practice.	Evidence-based poster development; writing journal article; writing research report;	(Wilson et al., 2010; Yale Center for Clinical Investigation, 2011; World Health Organization, 2014)	Nursing research; transformational leadership; influencing curriculum

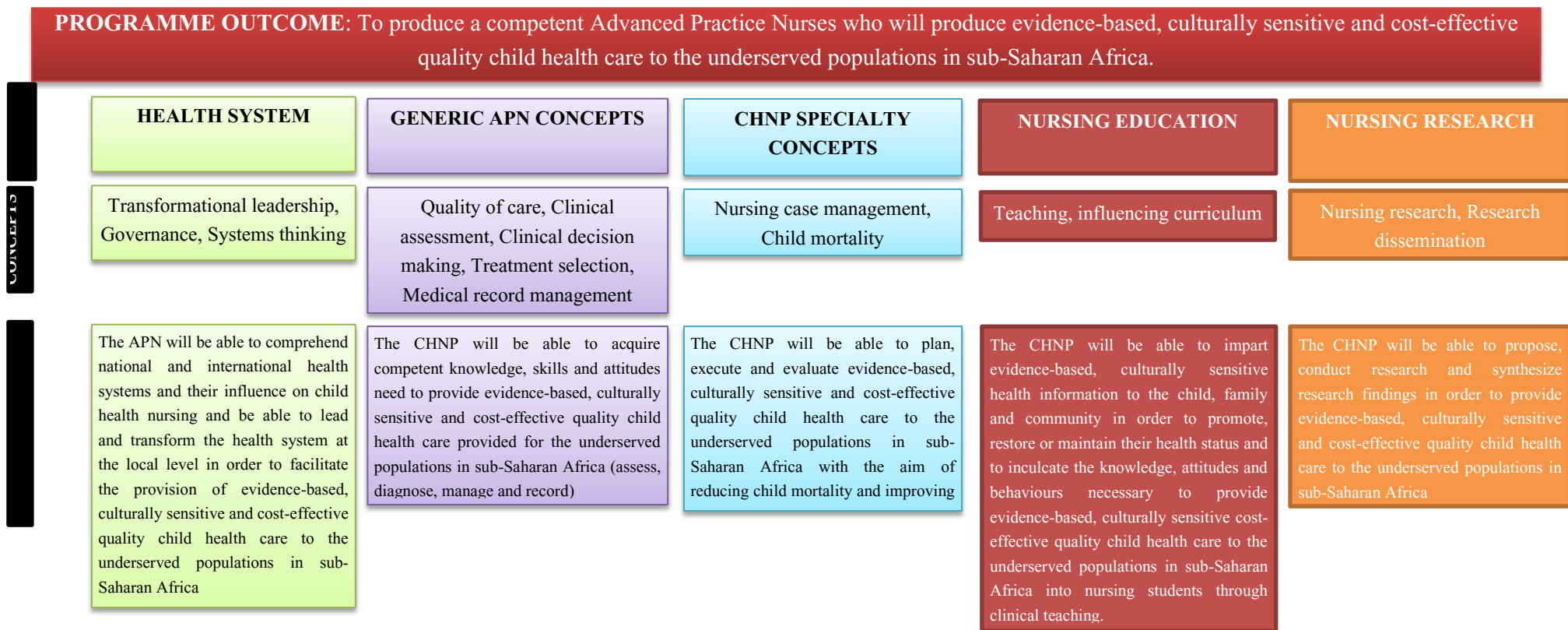


Figure 7.1Structure of the curriculum content

7.7 STANDARDS OF RESOURCES REQUIRED FOR IMPLEMENTATION

Standards of resources describe the level of lecturer qualifications, the workload per lecturer, student qualifications and number per class, materials (textbooks, computers and other equipment) and facilities (classrooms, furniture, fittings).

7.7.1 Lecturer qualifications

Nursing lecturers are expected to have a PhD in nursing is recommended. Consideration is given to a Master of nursing (coursework and research components). Non-nursing lecturer are also expected to have obtained PhD in specialist field is recommended. Consideration is given to a Master of Medicine and equivalent qualification if there are no PhD holders. All lecturers in the CHNP programme should have a teaching qualification.

7.7.2 Student resources

A 4-year degree in nursing with a minimum of 60% cumulative average mark is required for admission into the CHNP programme. Two years' minimum clinical practice after community/national/youth service or internship is the prerequisite clinical practice for gaining admission into the CHNP programme. Mathematics, Computing skills, and English/French Language skills are the required undergraduate skills necessary for gaining admission into the CHNP programme. Paediatric Nursing, Anatomy, Physiology, Psychology, Sociology, Pharmacology, Microbiology, Community Health Nursing, Family Health Nursing, Communicative Skills, Research Methods and Fundamentals of Nursing are the courses the candidate should have taken in undergraduate programme to qualify for the CHNP programme.

Students are expected to have personal materials such as laptop computer, prescribed textbooks, and Diagnostic set to promote effective learning.

7.7.3 Library resources

Textbooks, computers, internet services, online learning platform (e.g. Sakai), subscription to research database and online books.

7.7.4 Classroom resources needed

LCD projector, comfortable table and chairs for students, air conditioning/heater/fan per class, chalkboard and chalk, white/marker board and markers, good lighting, and good ventilation.

7.7.5 Teacher student ratio

A lecturer student ratio ranges of 1: 7 to 1:14.

7.8 TEACHING METHODS

Teaching Methods describes the range of teaching approaches that might be employed in the implementation of the framework. Experiential learning and problem-based learning, which is adult education oriented, is to be implemented to inculcate the level of critical thinking, problem solving and ability to apply concepts to general situations to the Child health Nurse Practitioner lecture. Small group sessions, self-study and blended learning methods were also proposed by the expert team.

7.9 ASSESSMENT AND REPORTING METHODS.

Assessment and reporting methods describes the modes of assessment, the pass marks and how the student achievements are awarded or certified. Assessment should seek to elicit the Child Health Nurse Practitioner's critical thinking, problem solving and ability to apply concepts to general situations in the healthcare setting and community served. OBSCE, written tests and examinations, viva voce and take home assessments were proposed by the expert team.

7.10 OTHER ELEMENTS

Other elements of this curriculum framework in addition to the 8 elements of a curriculum framework outlined by Stabback (2007) include: clinical practice, internship, licensure and continuous professional development (CPD), and adoption and adaptation instructions.

7.10.1 Clinical Training

Clinical training describes the mode of clinical training (clinical practice for learning and role taking) by the student enrolled in the Child Health Nurse Practitioner Programme.

Simulation laboratory, clinical placement facilities, anatomical models, clinical mentors, simulators, clinical supervisors, resuscitation equipment, diagnostic sets, personal protective equipment, and a qualified skills laboratory technician are materials and resources needed for a successful clinical training. Between 800-1000 hours of clinical placement for learning and role taking is prescribed for the 2-years training programme.

7.10.2 Internship

A one-year internship under the supervision of a paediatrician, if available, is recommended.

7.10.3 Licensure and CPD

Licensing of the Advanced Practice Nurse should be done on the discretion of the nursing council under which he or she is registered.

7.10.4 Adoption and Adaptation of the Child Health Nurse Practitioner Curriculum Framework

The framework should be adopted and adapted to suit each country in sub-Saharan Africa. Changes to this curriculum framework could affect the context, aim, knowledge domains, resources and concepts. Due to the expectations of the Advanced Practice Nurses and the aim of having the Advanced Practice Nursing programme locally relevant and internationally competitive, changes to the level of training and number of years of training are not advised.

7.11 CONCLUSION

This chapter presented the concept-based Child Health Nurse Practitioner curriculum framework. The curriculum framework consist of eight elements, thus current SSA context, educational policy statement on the CHNP programme, the broad learning objectives of the CHNP programme, the structure of the CHNP educational system, the structure of the CHNP curriculum content, the standards resources needed to implement the CHNP programme, teaching and assessment methods for the CHNP programme and other elements such as clinical training, internship, licensure, Continuous Professional Development and the process of adoption and adaptation of this framework.

The following chapter presents confirmation and evaluation of the curriculum framework developed.

CHAPTER 8 : CONFIRMATION AND EVALUATION OF THE CHILD HEALTH NURSE PRACTITIONER CURRICULUM FRAMEWORK FOR SUB-SAHARAN AFRICA

8.1 INTRODUCTION

This chapter presents the confirmation of the curriculum framework by the multinational, multidisciplinary experts (Table 5.1) for its true representation of the inputs and information they provided during the four phases of the Delphi Survey.

The chapter also presents the evaluation of the curriculum framework, by nursing faculty from 15 universities across sub-Saharan Africa, for its applicability in the sub-Saharan African context and its ability to be adapted to other Advanced Practice Nursing speciality areas.

8.2 CONFIRMATION

As attached in Annexure H, the 27 international multidisciplinary health experts who took part in the last phase of the Delphi study were given the draft curriculum framework to review and state any deviations they identified in the framework from the data they provided.

Nineteen (19) of the 27 participants responded to the confirmation questionnaire. They all stated that the curriculum framework accurately represented the data they provided for the study. The key words from their responses are presented in a word cloud in Figure 8.1 below. The confirmation responses were anonymous to the researcher therefore the codes used in the Delphi (Table 5.1) could not be used as participant identifiers in this section.



Figure 8.1: Word cloud of responses from respondents on any deviations of the curriculum framework from the findings in the Delphi study.

8.3 EVALUATION

8.3.1 Participants

Faculty from 15 universities across sub-Saharan Africa were to be selected through simple random sampling for the evaluation of the curriculum framework. The random sampling was not feasible at the time of evaluation as many university websites did not have information on their departments of nursing. Some had pages for the department of nursing but lacked information on the nursing faculty on their websites. The researcher then used available information on the universities that had enough information on their departments and schools of nursing, and the department affiliation of faculty that presented research at the 5th Quadrennial General Meeting and 11th Scientific Conference (ECSACON, 2014) and the 7th Child Health Priorities Conference in Cape Town 2016.

The participants were included if they were faculty of a department or school of nursing in sub-Saharan Africa and had research or practice experience in child health, Primary Health Care or nursing education. Child health, PHC or nursing education practitioners were chosen as a result of the focus of the curriculum framework. Some of the faculty who were contacted to participate also recommended other faculty from other universities who were also contacted to participate.

8.3.2 Results

Fifty faculty from 38 institutions from 15 sub-Saharan African countries (Botswana, Ethiopia, Ghana, Kenya, Liberia, Malawi, Nigeria, Lesotho, South Africa, Rwanda, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe) were invited to participate.

Seventeen faculty from fifteen nursing education institutions in ten sub-Saharan African countries (Ghana 2, Botswana 1, Swaziland 2, South Africa 1, Nigeria 2, Rwanda 2, Uganda 1, Kenya 2, Malawi 1 and Zambia 1) responded to the evaluation questionnaire before the close of the study. One response was incomplete and was excluded from the study, leaving 16. The results are described in the tables and figures below.

8.3.2.1 Question 1: Please rank (from ‘Excellent’ to ‘Very bad’) the Child Health Nurse Practitioner curriculum framework for its applicability within your institution and country

From Figure 8.2 below, all the participants stated the framework was applicable in sub-Saharan Africa with rankings: excellent (5), very good (4), good (3), poor (0), bad (0) and very bad (0).

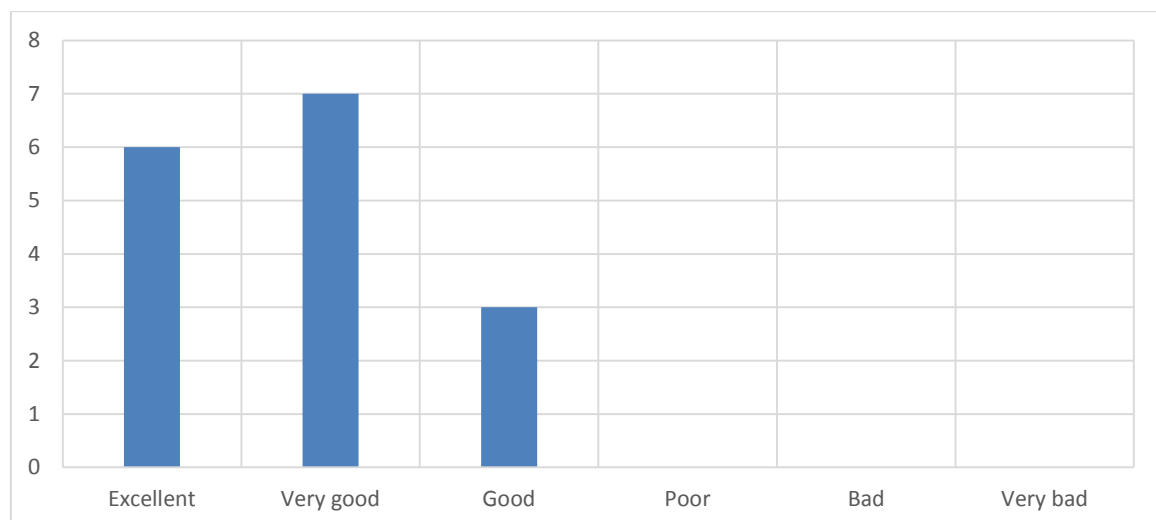


Figure 8.2: Ranking of the curriculum framework

8.3.2.2 Question 2: Please explain your choice above (in question1)

The responses from the faculty are presented as direct quotes, with researcher’s remarks in the third column in Table 8.1 below. Key words from the comments were developed into a word cloud as presented in Figure 8.3.

Table 8.1: Explanation of the choice of ranking in question 1

Code	Rank	Explanation of ranking (choice)	Remarks from researcher
Ghana 1	Excellent	<i>“This curriculum would make child health care speciality a regular and available program”</i>	No review recommended
Botswana 1	Excellent	<i>“An excellent initiative”</i>	No review recommended
Rwanda 2	Excellent	<i>“It is applicable because the framework responds to the needs of the country. However, it will require a change in policy especially in regard to the scope of nurses.”</i>	No review recommended
Nigeria 1	Excellent	<i>“There is adequate, easy-to-understand description of the current context, educational policy statement, statement of broad learning objectives, structure of the Child Health Nurse Practitioner programme.”</i>	No review recommended
Swaziland 2	Excellent	<i>“It is evidence-based and issues discussed affect us as a country. The issues of high neonatal, infant and child mortality-SDG 3. There is a need for our country to train nurses who will provide quality care to the children as paediatricians do not spend a long time with the children. Our country has 79% of the population residing in the rural areas.”</i>	No review recommended
Malawi	Excellent	<i>“the information provided in comprehensive”</i>	
Swaziland 1	Very Good	<i>“It clearly breaks down what needs to be attained per domain”</i>	No review recommended
Uganda	Very Good	<i>“In Uganda, there are no paediatric nurse practitioners, yet some find themselves playing practitioner roles. Having such a program will help improve quality of child health in Uganda.”</i>	No review recommended
Rwanda 3	Very Good	<i>“This curriculum framework will decrease the under-five mortality rate in low income countries which has been prevalent for many years.”</i>	No review recommended
Botswana 2	Very Good	<i>“Relevant to Sub-Sahara region”</i>	No review recommended
South Africa 2	Very Good	<i>“It is contextual and covers the necessary skills expected from an Advanced Practitioner”</i>	No review recommended
Zambia	Very Good	<i>“Structures are available for its applicability”</i>	No review recommended
Kenya 2	Very Good	<i>“It is simply written yet precise and concise”</i>	No review recommended
Ghana 2	Good	<i>“The framework is comprehensive, simple and very necessary for improving the health of children. Few aspects regarding qualification of lecturers appear to be difficult to achieve considering the fact that this is a new programme. Also, requirement of 4years”</i>	PhD is preferred but Master of Science with both coursework and research are acceptable lecturer qualifications. This is the minimum requirement for a master’s level programme globally. An honours (4 years bachelor of nursing)

Code	Rank	Explanation of ranking (choice)	Remarks from researcher
			degree is the recommendation for a master of nursing
Rwanda 1	Good	<i>“The curriculum is very new in our context Rwanda”</i>	No review recommended
Kenya 1	Good	<i>“Can be improved: especially paediatric speciality areas”</i>	The paediatrics (child health) speciality areas comprises 50% of the concepts included in the framework. The recommendation is not specific hence the researcher did not make any reviews.



Figure 8.3: Word cloud of keywords from evaluation comments

8.3.2.3 Question 3: Can this curriculum framework be adapted for other speciality areas in Advanced Practice Nursing?

All the participants stated that the Child Health Nurse Practitioner curriculum framework can be adapted for other Advanced Nursing Practice Speciality areas in sub-Saharan Africa. The reasons given for its adaptability (in response to question 4) are presented in Table 8.2 below.

Table 8.2: Adaptation of the CHNP curriculum framework for other APN specialties

Code	Question 3	Question 4: Please explain your choice above (in question 3)
Ghana 1	Yes	<i>“It can also be used for geriatric with some few modifications to the framework”</i>
Ghana 2	Yes	<i>“The framework appears to be in line with the SDGs and so will be easily receptive health and political authorities.”</i>
Botswana 1	Yes	<i>“Yes, it can. If you get the chance, could you contact the Nursing and Midwifery Council of Botswana. The FNP programme has been running in the country for decades. They might offer a better critique of the proposed curriculum. Also the University of Botswana School of Nursing offers a Masters in Family Nurse Practitioner (sp), with subspecialties in Child health NP, and Adult Health NP, you might want to contact one of the lecturers there.”</i>
Swaziland 1	Yes	<i>“If for example a Framework for Geriatric Nursing in Communities would be drawn, this APN curriculum framework seems like a good starting point with slight adaptations to align with the elderly.”</i>
South Africa 1	Yes	<i>“Well elaborated”</i>
Nigeria 1	Yes	<i>“It can be adapted for APN in critical care nursing, and APN in Adult Mental Health Nursing.”</i>
Rwanda 1	Yes	<i>“The adaptability is possible for other specialties if scope of practice is changed. There is a need for advocacy and nurses' understanding about the healthcare delivery especially in primary health care settings.”</i>
Uganda	Yes	<i>“Nurse practitioners are needed in all health service areas especially in settings where doctors or clinical officers are too few. Nurses who perform as practitioners in our upcountry settings can be empowered to increase access to better care.”</i>
Swaziland 2	Yes	<i>“It can be used in other specialties because the framework is detailed. It is a matter of adapting it to the programme you want to introduce, and the methodology used was detailed in this document.”</i>
Kenya 1	Yes	<i>“Its broad enough”</i>
Rwanda 2	Yes	<i>“This curriculum can be adapted because it is focused on Child health with broad objectives that can be adapted”</i>
Botswana 2	Yes	<i>“Can be adapted in the Family Nurse Practitioner child care area children are part of the clientele”</i>
South Africa 2	Yes	<i>“As long as it stays context specific”</i>
Malawi	Yes	<i>“it provides a guide which can easily suit other areas”</i>
Zambia	Yes	<i>“The modules are generic allowing for adaptability to other specialties”</i>
Kenya 2	Yes	<i>“It is comprehensive enough, covering major practice areas and can be easily adapted for other areas”</i>

8.3.2.4 Question 5: Suggestion for making the framework applicable to faculty's institution and country

The faculty were asked to recommend how the curriculum framework could be made applicable in their institutions and countries. There were 11 responses. The recommendations for the curriculum framework to be adopted and adapted for a country and institution are as follows.

Four of the faculty recommended that the framework be disseminated to the national institutions such as the Nursing Councils, Ministries of Health and the national Colleges of Nursing and Midwifery. For instance:

“Currently, Ghana has established Ghana College for Nurses and Midwives (a professional training institution) to train nurses to the fellowship level. This program may be tailored to meet the requirement of the college” (Ghana 2).

“Disseminate it to Ministry of Health and Nursing Council” (Rwanda 1)

*“The framework can also be applicable in **policy making positions** at high level or central level”* (Rwanda 2)

“Through collaboration with the National Council of Nurses and Midwives” (Rwanda 3)

These institutions are major gatekeepers for nursing education programmes in every country. The ability of this programme to make any impact in sub-Saharan Africa will depend, largely, on their approval. Other recommendations include disseminating the framework on compact disks and other electronic formats to make it accessible to the stakeholders of nursing in sub-Saharan Africa. A faculty stated that the guidelines provided for adoption and adaptation of the curriculum framework will be very helpful for her institution and country. Three faculty indicated that the curriculum framework will be easily adopted if it is adapted using country specific burden of diseases.

8.4 CONCLUSION

The results from the evaluation support the importance of the CHNP curriculum framework and the essence of the Child Health Nurse Practitioner in the health systems of sub-Saharan Africa. The faculty from the universities across sub-Saharan Africa agreed that the Child Health Nurse Practitioner curriculum framework can be adapted for other APN programmes in sub-Saharan Africa, where APN programmes are most needed. For adoption and adaptation, the faculty recommend that the framework should be communicated to the major stakeholders and decision makers in the healthcare systems of sub-Saharan Africa, such as the Ministries or Departments of Health, the Nursing and Midwifery Councils and the national colleges of nursing and midwifery.

The following chapter presents the discussion of major findings in this study, the conclusion and the recommendations from this study.

CHAPTER 9 : DISCUSSION, CONCLUSION AND RECOMMENDATIONS

9.1 INTRODUCTION

This chapter consists of a discussion of the key findings in this study. The discussion covers the findings from the scoping review, Delphi study, concept development, the development, confirmation, evaluation of the Child Health Nurse Practitioner curriculum framework and plans for the dissemination of the framework.

9.2 DISCUSSION

9.2.1 Demographic Issues

The review outlined the sub-Saharan African context with regard to the significance of child healthcare and the need for a child health specific healthcare workforce (Child Health Nurse Practitioner) and the opportunities and challenges that sub-Saharan African countries will face in the development of a CHNP programme.

The sub-Saharan African context as described in the studies included in the scoping review exposes the lives of children living within the context to the dangers of poor healthcare. The African population increase is greatest compared to all other regions of the world, with children below the age of 19 years constituting more than 50% of the total population.

About 70-90% of the population of sub-Saharan African countries live in rural and hard to reach areas, the highest rural population in the world. The rural population suffers the consequences of poverty, such as poor housing and lack of access to vital social amenities, for example, electricity, hygienic water, good schools, roads and health services (Shumbusho et al., 2009; Msuya et al., 2017). Contrary to sub-Saharan Africa, only 19.3% of the population of the United States of America live in rural settings (US Census Bureau, 2016) and are most likely to own their own houses and have a lower rate of poverty (18.9%).

9.2.2 Child Health Issues

Sub-Saharan African governments do not prioritise child healthcare in with respect to the population dynamics. Children are the majority of the population and are mostly at risk of preventable communicable diseases. For instance, the United Nations reported that one in every twelve children in sub-Saharan Africa will die before the age of twelve years, and the

World Bank stated that about 17.6 million children in sub-Saharan Africa are malnourished (SOS Children's Villages, 2016). Children in Sub-Saharan Africa are 14 times more likely to die before the age of 5, compared to their counterparts in developed countries (SOS Children's Villages, 2016).

Pneumonia, diarrhoea and malaria account for 40% (1.3million) of child mortality cases in sub-Saharan Africa (SOS Children's Villages, 2016). About 95% of malaria deaths in children under the age of 5 years occur in sub-Saharan Africa. These statistics show how the governments of sub-Saharan Africa have neglected the children who suffer at the mercy of preventable conditions.

9.2.3 Need for Child Health Nurse Practitioners

With the dominance of preventable communicable disease in sub-Saharan Africa, the population distribution (more rural than urban) and poor access to quality healthcare services by the rural communities, the Advanced Practice Nursing programmes will be most appropriate to the healthcare needs of the region. Since children are the majority of the population and are the population at the highest risk of disease and death, the Child Health Nurse Practitioner is essential to the region.

Research shown that the consequences of diseases suffered by children in early life have devastating effects on their adult life, indicating the importance of quality and timely child healthcare (Delaney & Smith, 2012). Cootes (2010) stated that children's condition deteriorates faster than adults, hence the need for timely healthcare. Unfortunately, healthcare services for children in sub-Saharan Africa are not of good quality and timely enough, as studies (Nannan et al., 2012; Coetzee, 2014; Mulaudzi, 2015) reported that poor and untimely healthcare lead to about 50% of children attending child welfare clinics dying on arrival or within 24 hours of hospitalization. This is partly due to the fact that the healthcare facilities are located in cities and towns, depriving the majority of the population, who live in rural areas, of quality and timely healthcare (Garcia *et al.*, 2008).

Sheer and Wong (2008) posited that the training and placement of Advanced Practice Nurses should be guided by the context in which they function. Coetzee (2014) questioned the appropriateness of the clinical orientation of paediatric trained nurses in sub-Saharan Africa, as the needed Primary Health Care is prevention oriented (Swingler et al., 2012).

9.2.4 Threats to the Introduction of the Child Health Nurse Practitioner Curriculum in Sub-Saharan Africa

The challenges are universal to the implementation of Advanced Practice Nursing and can always be surmounted with advocacy and exemplary practice as shown by the history of Advanced Practice Nursing globally (Sheer, Wong & Wong, 2008; Duffield et al., 2009; Fitzgerald et al., 2012; Kleinpell et al., 2014; Fougère et al., 2016). The challenges posed by lack of political will may be because of the dwindling image of nursing as reported in many news media. Nurses will have to do more to promote a good image of the profession (Oware-Gyekye, 2015).

9.2.5 Opportunities for the Introduction of the Child Health Nurse Practitioner Curriculum in Sub-Saharan Africa

- Nurses in sub-Saharan Africa have produced good results in terms of task shifting services they render to communities when needed. The increase in access to antiretroviral services and the improvement of life for the people living with HIV/AIDS have been widely reported.
- The human resource base of South Africa, and the collaborative work of some Universities in the western world towards universities in sub-Saharan Africa could yield sufficient human resources to train faculty in sub-Saharan Africa towards the implementation of the Advanced Practice Nursing programmes.
- The conditions that necessitated the introduction of Advanced Practice Nursing globally are overwhelming in sub-Saharan Africa, making the introduction of APN programmes in the region urgent.
- There are enough graduate nurses who would be willing to take the opportunity of becoming Advanced Practice Nurses.

9.2.6 Issues that Proved Difficult for Consensus by Expert in the Delphi

The majority of the Delphi statements were agreed upon by the experts in the Delphi Survey. Consensus was not reached on some major issues, including the autonomous practice of the CHNP, level of the healthcare system where they should practice, level of paediatrician supervision, funding of the CHNP training, and remuneration and licensing of the CHNP to practice in private. Other key issues focusing on the level of education, provision of Primary Health Care, prescription of medications and assisting in resolving major child healthcare challenges that confront sub-Saharan Africa were easily agreed upon.

The disagreement on the autonomous practice had to do with the level of autonomy. Experts who disagreed on the CHNP being completely autonomous held the view that as long as the CHNP works in teams, she or he cannot be autonomous as he or she will need to collaborate with other healthcare professionals. Others were of the view that if the CHNP was deployed to a higher level of care where a paediatrician is the head of the child healthcare team, the CHNP could not be autonomous. Consensus was reached on the issue of autonomy with the clarification that autonomy involved being able to assess, diagnose, prescribe treatment and monitor therapeutic regimen of the child without the involvement from the paediatrician. The CHNP however should refer to the paediatrician in a timely manner if he or she lacks the necessary skills and resources to provide quality care for a particular child. The expert group also agreed that the CHNP should be supervised by the paediatrician during training and internship period. Petersen and Way (2017) found out that both facilitative and restrictive oversight of APNs by physicians, coupled with increasing collaboration and interaction between the two groups of prescribers, helps in empowering APNs to be autonomous. Rudner Lugo (2016), however, stated that the push for a physician to oversee the work of APNs is as a result of undermining women in society. Weiland (2015) sided with Rudner Lugo (2016), stating that gender marginalization was involved in deciding APN's autonomy. She concluded that genuine autonomy is when the APN builds relationships with the client, is self-reliant, empowers self and is able to defend his or her role (Rudner Lugo, 2016).

In agreement with the findings in this study, a study conducted by Msuya et al. (2017), describing the scope of practice of nurses in sub-Saharan Africa, found that 94% of nurses working in small rural communities, and 54% of nurses in district hospitals, prescribed medication as a result of lack of licensed prescribers. Contrary to the recommendation for APN programmes to be implemented at the masters level, Msuya et al. (2017) stated that only 2% of the nurses stated that the APN should be at the masters level, with the majority recommending post-registration certificate level.

The CHNP should be trained to practice at all levels with an emphasis on Primary Health Care settings. Corresponding to the practice setting for the CHNP prescribed by the experts, the American Nurses Association (2011) stated that "At least 66% of NPs practice in primary-care settings, many in major metropolitan areas as well as rural and inner-city settings delivering vital care to underserved populations". Fitzgerald et al. (2012) found that

when the government funding was available, more APN were enrolled for training to fill in the shortage gaps in the USA, but currently, the prioritization of medical education and residency funding has created funding shortages for APN programmes. She recommended that government should provide funding to support APN programmes as APNs are essential in the healthcare system.

On funding of the APN programme, the government should provide the funding with the support of other non-governmental organizations. Institute of Medicine (2011) also reaffirms the finding of Fitzgerald et al. (2012) that there is no funding for APN programmes, despite the need to train and supply APNs for Federal Health centres.

APNs should be culturally competent and able to speak the language of the community they serve. Culture and language are important in consultation, management, education and referral. Patients are likely to feel comfortable and protected with a practitioner who understands their culture and speaks their language. Ferguson and Candib (2002) conducted a review to explore the influence of race, ethnicity and language on physician-patient relationship. Their findings supported the recommendation in this study that the CHNP should be culturally competent and speak the language of the community he or she serves. They recommended that the training of CHNPs should be diverse in a way to have graduates from all ethnic groups, especially the minority rural communities. Schyve (2007) supported this finding, stating that differences in culture and language are barriers to evidence-based practice.

9.2.7 Concepts for Child Health Nurse Practitioner Curriculum Framework

Twenty-two (22) concepts were proposed by the curriculum committee in this study. As it was the first postgraduate level concept-based curriculum framework to be developed, it was laborious trying to determine how many concepts were enough and which ones to include. The committee was divided into two groups: a group of three and the other of four. The first group (of three members) agreed on merging some of the 22 concepts due to similarities and excluding some, resulting in 14 concepts included in this curriculum framework.

The curriculum team was purposively formed to include nursing educators and administrators from across sub-Saharan Africa. Among the members of the team were a professor (C), who headed the departments of nursing for two different universities in West Africa and served as

a professor of nursing for one university in Uganda (East Africa) and Swaziland (Southern Africa). Her diverse and transcultural experiences were essential for the development of this curriculum framework. Another member (G) who is a paediatrician from Mozambique (Southern Africa), trained and practiced as a general practitioner in Mozambique and specialized as a paediatrician in South Africa. One member (E), the head of an interprofessional education simulation laboratory trained as a nurse educator. Another member (D) is the provincial head of nursing services, who trained as a nurse educator at PhD level, and was once the Chief Executive Officer of the South African Council of Nursing. Another member (A), who is the head of the nursing education unit of a school of nursing, a consultant to the Department of Health, had served on the Board of the South African Nursing Council and was a leading member of a concept-based curriculum committee of a university in sub-Saharan Africa. Another committee member (F) is a lecturer in a department of nursing of a university in Africa and is the team leader for the first concept-based undergraduate nursing curriculum in sub-Saharan Africa. The variability among the committee members regarding concept-based curriculum was important in the selection of the concepts. The difficulty in determining how many concepts to be included in the curriculum was also reported by Giddens, Wright & Gray, (2012) in their state-wide undergraduate concept-based curriculum development.

Fifty percent of the concepts covered the Advance Nursing Practice speciality area. The rest of the included concepts covered research, education and health systems, which harbour vital knowledge, skills and attitudes needed by the Advanced Practice Nurse to function effectively.

The APN will be expected to provide expanded roles that involve comprehensive assessment and diagnosing, managing of illness and diseases, which require extensive knowledge and skills in the disease process to function effectively. The concepts for Advance Nursing Practice were carefully selected to equip the APN with the needed skills in clinical management.

For the APNs to be competent in evidence-based practice, they need to understand how evidence is generated, be able to generate evidence themselves and be competent in utilizing such evidence.

The APN will be expected to do clinical teaching for nursing programmes and to educate the patient in the clinical setting. To do that, the concepts on nursing education are necessary. The APN will acquire enough knowledge, skills and attitudes to teach students and clients effectively in hospital settings.

The health system is the larger context within which the APN will practice. To be able to function within their confines of terms of law and to produce positive effects in practice, the APN needs to understand the health system, the players in it and their demands. Three concepts were included under health systems to guide the APN to understand the health systems. He or she is envisaged as the leader at the community healthcare level, therefore, leadership and governance skills are important for the APN's practice.

9.2.8 CHNP Curriculum Framework

The framework developed consists of the eight common elements of a curriculum framework outlined by Stabback (2007): current context, educational policy statement, broad learning objectives and outcomes, structure of the educational system, structure of the curriculum content, standards of resources required for implementation, teaching methods and assessment and reporting methods.

The sub-Saharan African context was described from the scoping review and was confirmed by the interdisciplinary health expert team as a true representation of sub-Saharan Africa. The educational policy statement, essentially, seeks to produce enough competent CHNPs, who are willing to accept posting to the rural and underserved community, to help combat the devastating effects of preventable child deaths in sub-Saharan Africa, and to improve the healthcare indices of the region toward meeting international standards, such as the sustainable development goals. Historically, APN programmes are developed based on governments' goal of preventing diseases and improving the life of the population through primary healthcare. Three main reasons form the foundation of all APN programmes. These include making "quality healthcare" "universally accessible" at a cost that the population can afford, without burdening them with the negative consequences of the high cost of healthcare (Madubuko, n.d.; Duffield et al., 2009; Donelan et al., 2013; Swan et al., 2015; Nursing and Midwifery Board of Ireland, 2017).

The statement of broad learning objectives reported in this study are in six knowledge domains. The knowledge domains defined in this study are not that different from the competences of advanced practice nursing prescribed by the Nursing and Midwifery Board of Ireland (2017): “Professional Values and Conduct of the Registered Advanced Nurse Practitioner; Clinical-Decision Making; Knowledge and Cognitive Competences; Communication and Interpersonal Competences; Management and Team Competences; Leadership and Professional Scholarship Competences.” They are also in concordance with the course structure of the Nurse Practitioner programme implemented by the University of British Columbia (2017), with the exception that the University of British Columbia’s programme lays emphasis on pathophysiology and pharmacology. The Royal College of Nursing (2012) also emphasised pathophysiology and pharmacology. All other components are the same, with the exception that this curriculum is a concept-based and does not encourage the emphasis on content, rather concepts such as decision making and treatment selection, which includes pathophysiology and pharmacology.

In a study to explore the fundamental aspects of Advanced Practice Nursing in aesthetic medicine, Greveson (2013) reported “developing a nurse-led service; patient assessment and decision making; consultation skills; treatment selection; non-medical prescribing; insurance and record keeping; audit and research and Continuous Professional Development” as the components of aesthetic medicine Advanced Practice Nursing. These components are consistent with the concepts reported in this study, with a few nomenclature differences.

The concepts developed in this study are of higher thinking and problem solving than those developed for undergraduate nursing by Giddens, as the Advanced Practice Nurses are expected to practice at a higher level than the graduate nurses - advanced assessment, diagnosing, prescribing and management of care (Lee & Fitzgerald, 2008).

The structure of the education system reported in this study is supported by the Advanced Practice Nursing programmes implemented in the United States of America, United Kingdom, Canada and other parts of the world. The differences are the number of credits for the programme, type of the curriculum and context in which the programme is being implemented. Differences in credits are a result of the different credit systems used in different jurisdictions (Duffield et al., 2009; University of British Columbia, 2017).

The structure of the curriculum content has been organized into modules, which are made up of concepts. This is a unique way of curriculum content organization, as the concept-based curricula reported by other authors (Giddens, 2013; Caputi, 2014; Ignatavicius, 2017) were organized into courses. The modular structure of curriculum best suits postgraduate education and reformed higher education from its traditional subject, course, semester nature (French, 2015). Modularization of the curriculum allows for:

- the curriculum to cater for the needs of the diverse student population
- the opportunity for the students to make choices and manage their own learning, which is important for adult education
- the opportunity for students to combine academic and vocational qualifications, which is important for nursing
- encouragement of interdisciplinary learning
- reduction in cost and maximises the use of institutional resources (French, 2015).

The standards of resources for the CHNP programme has been described, with focus on the resource limitations of sub-Saharan Africa (French, 2015).

The concept-based epistemological perspective of this curriculum is essential in reducing the content of the Advanced Practice Nursing curriculum, while giving the Child Health Nurse Practitioner the opportunity to acquire the knowledge, skills and attitudes needed to function at a competent level of critical thinking, problem solving. Less content will also give the CHNPs enough time for clinical practice and to reflect on their practice.

The experts in the Delphi Survey, who responded to the confirmation, stated that the curriculum framework is an exact representation of the findings from the scoping review and the extra information they provided during the four phases of the Delphi. The confirmation was necessary to keep the curriculum framework context specific, responsive and relevant.

The faculty from various Nursing Education Institutions in sub-Saharan African countries, who evaluated the curriculum framework, rated the curriculum framework from good to excellent, with very good being the highest, followed by excellent and good. No faculty has rated the curriculum framework as either poor, bad or very bad. No part of the curriculum framework was revised after the evaluation because the responses were all in the affirmative.

The faculty stated that the CHNP curriculum framework can easily be adapted to other Advanced Practice Nursing specialities because the framework is comprehensive, easily understandable, generic, context-specific and innovative. They also stated that for the curriculum framework to be adopted and adapted for each country in sub-Saharan Africa, it is necessary for it to be disseminated to the key stakeholders of nursing education and practice within the countries.

9.3 LIMITATIONS OF THE STUDY

The initial study designed was to conduct a scoping review on Advanced Practice Nursing in sub-Saharan Africa, review the master of nursing (child health speciality) curriculum of three Departments/Schools of Nursing of highly rated universities in Africa (one each from East, West and Southern Africa), interview the lecturers or facilitators of masters of nursing programmes in those institutions on how best an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum could be developed to respond to the needs of the children in sub-Saharan Africa and then triangulate the results from the three sources to develop the CHNP curriculum framework. The researcher could not access curricula from the proposed institutions leading to the revision of the study.

- A Delphi was used to collect data from the respondents. The online platform used in the Delphi could have excluded some experts who could have provided some key information or recommendations for this study due to the resource poor nature of SSA. Delphi only permits a selected group of people to be included. This does not allow for the inclusion of a vast majority of stakeholders of the nursing education and practice in sub-Saharan Africa.
- The researcher could not include the Delphi Survey, concept development and the faculty involved in the evaluation of the curriculum framework from all the individual countries of sub-Saharan Africa. Even though all the four sub-regions of the SSA are fairly represented; involving participants from all countries would have been better.
- There were more nurses than other health professionals included in the Delphi study. The findings in this study might be biased towards the views of nurses as opposed to other healthcare professions.

- The researcher included studies from published works in English between January 2007 and December 2016 in the scoping review, from five databases. There could be other studies published outside the time frame, in other languages and in other databases that the researcher could have missed. Those potentially missed studies might have had an impact on the findings in this study.
- The curriculum framework was not implemented. Even though it was evaluated, the researcher could not confirm that there would not be limitations in application in SSA.

9.4 RECOMMENDATIONS

Recommendations for education, practice and research are outlined below.

9.4.1 Education

- Nursing Education Institutions that will use this curriculum framework should endeavour to train their faculty in concept-based curriculum issues, as it is complex and confusing to beginners.
- Nursing Education Institutions that will apply this framework should endeavour to adapt it to fit their local healthcare needs and resources available to them to make it context specific and responsive.
- Nursing Education Institutions across sub-Saharan Africa should collaborate with each other to enable them to share their resources to complement each other's resources in order to implement the CHNP programme successfully.
- Governments and Ministries of Health should increase funding to Nursing Education Institutions to enable them to prepare and enrol students for CHNP programmes.
- Nursing educators should advocate for CHNP programmes to be introduced in their countries to make training responsive to the country's needs.
- Nursing Councils should be encouraged, through evidence and professional advocacy, to create the APN category and provide schools with practice and standards for their training.
- Nursing Education Institutions should put pressure on Ministers of Health to adopt the training of CHNP in their respective countries.
- Training of the CHNP should be structured in a way to encourage CHNPs to accept postings to rural communities with ease.

- The nursing leadership should lobby and professional advocacy for funding and introduction of CHNP programme as a collaborative process between government, clinical services, the public and educational institutions, and propose how this can be done.

9.4.2 Practice

- Trained APN should be willing to be posted to the underserved communities.
- The ACHNP should be culturally sensitive and competent in evidence-based practice to produce effective results.
- Leaders of nursing services should advocate for the training of the CHNP with evidence, to help them reduce child mortality and also reduce the workload on their staff.

9.4.3 Research

- There should be more studies conducted on the feasibility of the Child Health Nurse Practitioner and other Advanced Practice Nursing specialities in sub-Saharan Africa.
- More studies should be conducted on the responsiveness of this curriculum framework in sub-Saharan Africa, and other resource poor countries globally.
- Studies should be conducted on how to overcome the threats to the introduction of the CHNP programme in sub-Saharan Africa.
- Further research should be conducted to develop scopes of practice and standards or education and practice for the CHNP in sub-Saharan Africa.
- Faculty and institutions in sub-Saharan Africa should be receptive to research that is aimed at improving nursing education and practice in sub-Saharan Africa.

9.5 CONCLUSION

Sub-Saharan African healthcare systems are discriminatory against those who live in deep rural areas. While those in cities and towns only have to walk for short distances to access healthcare, those in rural areas have to travel long distances to reach clinics only to be demanded service fees to be treated (Kong et al., 2013; Sambo, 2014; Brinkerhoff, Wetterberg & Wibbels, 2017).

Canada, USA, the United Kingdom and many other nations and states have recognised the APN as the best category in the healthcare workforce to respond to the poor access to quality and cost-effective healthcare, especially in deprived areas where medical doctors are either

resistant to going or are not enough to cover (Canadian Nurses Association, 2008; Sheer, Wong & Wong, 2008; Duffield et al., 2009; Currie, Chiarella & Currie, 2013; East et al., 2014; Swan et al., 2015).

Globally, Advanced Practice Nurses provide care for the underserved communities such as rural sub-Saharan Africa at the same or higher level of quality and patient satisfaction than general practitioners (Seale, Anderson & Kinnersley, 2005; Hutt et al., 2013; Pirret, Neville & La Grow, 2015; Swan et al., 2015).

The SSA environment is ready for Advanced Practice Nursing investment. The population dynamics, inequality, inaccessible healthcare systems, and proportion of rural dwellers compared to that of urban creates the opportunity for the APN programme to be introduced. ACHNP programme will be very important in responding to the large and increasing number of children with poor access to timely quality healthcare in SSA.

Shortage of medical doctors or refusal of medical doctors due to the lack of capacity to produce and outbound immigration coupled with the refusal of medical doctors to accept posting to rural settings is no news to SSA (Soucat, Scheffler & Ghebrey, 2013).

The nursing workforce has shown time and again that it is capable to fill the gap in healthcare if their roles are expanded to practice advanced skills to provide quality care for the underserved children in SSA. This has been demonstrated by their ability to improve early diagnoses and management of HIV/AIDs through nurse initiated management of antiretroviral therapy, wound care, PHC and community healthcare programmes across SSA (Shumbusho et al., 2009; Collaghan, Ford & Schneider, 2010; Ngángá & Woods, 2012; Terry et al., 2012).

Opposition from the medical profession has been recorded in the history of APN programmes globally. The determination of nursing professional organisations, the will and support from government and the need to shift healthcare focus from curative to preventative in Primary Healthcare have been the greatest tools in legitimizing APN programmes (Sheer, Wong & Wong, 2008; Duffield et al., 2009). Unfortunately, governments in sub-Saharan Africa only talk about the significance of nurses in Primary Health Care but policies and legislations do not corroborate their talk, leaving the general population to suffer the consequences (Ugochukwu et al., 2013). Nursing Councils in sub-Saharan Africa are being advised by the

ministries/departments of health as to what to do instead of the reverse. This gives stronger power to the opposition as the heads of ministries of health in SSA are mostly medical doctors (Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Fineberg, Garcia, Ke, Kelley, Kistnasamy, Meleis, Naylor, Pablos-Mendez, Reddy, Scrimshaw, Sepulveda, Serwadda, Zurayk, et al., 2010).

Opportunities exist. There are enough four-year degree registered nurses who would like to develop a career in APN. There is enough collaboration between the well-resourced universities and the resource limited institutions in SSA to implement the APN programme (INEPEA, 2010; Bell et al., 2014; Coetzee et al., 2016; Regan et al., 2016).

Advanced Practice Nursing legislation was established about seven decades ago in developed countries, at a time when they had milder forms of inequality in healthcare, especially against the rural underserved and vulnerable population of sub-Saharan Africa (Sheer, Wong & Wong, 2008; Duffield et al., 2009). At the same time in Africa, it was still being questioned if degreed nurses were needed to carry bedpans (Aziato, Kwashie & Korsah, 2014).

The roles of the CHNP programme are viable in SSA considering the need, level of opposition, opportunities and resources available. There is, therefore, the need for nurses to take advantage of their numbers and use their labour organizations to advocate for governments to adopt CHNP programmes, and for Nursing Councils to develop roles for the CHNP as required.

The additional roles of the CHNP to that of the general nurse will include: thorough head-to-toe assessment, differential medical diagnosis, requesting and interpreting laboratory medical diagnostic tests, prescription of medication and monitoring therapeutic effects, referral of clients to a higher level of healthcare, admitting and discharging of children, managing the healthcare resources and conducting clinical research.

The Child Health Nursing Practitioner curriculum framework is comprehensive, context-specific, has the potential to respond to the special child healthcare needs of sub-Saharan Africa and is adaptable for other Advanced Practice Nursing speciality programmes in sub-Saharan Africa.

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ANNEXURES

ANNEXURE A: DATA MATRIX

SESSION 1: ADVANCED PRACTICE NURSING IN SSA				
No	(Study, Year), Setting “Title”	PURPOSE	Research Design	Contribution to APN Curriculum
1.	(Academy of Nursing of South Africa, 2015), South Africa “Summary Report: Academy of Nursing of South Africa Colloquium 2015”	To obtain an overview of status of specialist nursing, discuss issues around generic competency framework, education and training, and matters relating to specialist training on South Africa.	Discussion paper	The specialist nurse is expected to help in improving the indicators of life expectancy, maternal mortality, HIV/AIDs burden, Tuberculosis burden in order to strengthen the health system. Minister of Health created categories of specialist nurses and Nursing Council developed competencies for the specialist categories Nursing Council have control over: conceptual clarification, scope of practice, competency framework, standard of practice, code of conduct, continuing professional education. ICN’s definition of Advanced Practice Nursing was adopted and adapted to the South African context, “An advanced Practice Nurse is a leader in clinical field, makes clinical judgement, develops or advices regarding policy development in clinical area, is an interdisciplinary consultant, initiates and places premium on research in the clinical area”.
2.	(Adjapon-Yamoah, 2015), Nigeria “Possibilities for advanced practice nursing through the eyes of physicians: a descriptive qualitative study”	To discuss how physician’s views about the introduction of Advanced Practice Nursing in Nigeria.	Qualitative descriptive study. Data were thematically analysed.	The Advanced Practice Nursing programme is in high demand due to the physician shortage in Nigeria. Currently there is no APN in Ghana but nurses are deployed through task shifting to practice without proper documentation. APN is necessary for the upscaling of primary healthcare in Nigeria. If nurses could prove themselves worthy of the expanded roles, there will be physician support.

3.	(Ahmed et al., 2011), SSA <i>“Medical education: meeting the challenge of implementing primary health care in Sub-Saharan Africa”</i>	Supporting Primary Health Care as a means of meeting SSA health needs	Position paper	Medical education must be focused on the needs of the people served. Primary healthcare is best suited for the special health needs of Africa. Population is largely rural, healthcare facilities allocated at city and towns, access to health care difficult due to bad transport system, fastest growing world region with 2.4% growth rate, population expected to double in 30 years (2040), more than 40% of population earn less than \$1 daily, half the population is less than 18yrs, rapid urbanization. Estimated 67% may city and town dwellers by 2050, Controlled HIV leading to high chronic disease burden, Maternal and neonatal mortality are on the rise despite worldwide decrease. Primary Health Care is very important in responding to the population health needs of Sub-Saharan Africa.
4.	(Currie, Chiarella & Currie, 2013), International <i>“An investigation of the international literature on nurse practitioner private practice models”</i>	To review literature on models used by APN in private practice	Literature review. Thematic content analysis was used to synthesize information from the studies identified in 2012	Only a few nurse practitioners are in private practice. The main location of private practice is clinic settings. There is difficulty with nurse practitioner private practice, : laws permitting NP private practice, acceptability by patients as care provider, and financial reimbursement.
5.	(Doodhnath, 2013), South Africa <i>“Experiences of advanced psychiatric nurses on their practice in an Occupational Specific Dispensation hospital setting”</i>	To describe how the experiences of psychiatric nurses practicing at an OSD clinic was used to develop guidelines to support nurses practicing in OSD wards	Qualitative, exploratory, descriptive and contextual design. In-depth interviews were conducted	The guideline recommends the APN practice according to their scope of practice and enable the adoption of advanced practice nurse roles to allow the APN to practice advanced nursing skills.
6.	(Duma et al., 2012), South Africa <i>“Specialist and advanced specialist nursing and midwifery practice”</i>	To differentiate between the two levels of Advanced Practice Nursing in South Africa in line with ICN perspectives		There is much ambiguity in terms of roles and practice across the world. This ambiguity needs clarification in order to delineate scopes of practice. In South Africa, a “nurse/midwife specialist” is trained at the Advanced diploma level and is authorised to practice in a specialist field. Their roles including: teaching, administration and research. The second specialist group (Advanced nurse/midwife specialist) is trained at the master’s level with a broader autonomy in practice and can function in primary care. She or he needs enough knowledge attitudes and skills to assess, diagnose manage therapeutic regimen in a specialised area and in private practice The practices of this entire category must be founded on the context in which they are licenced to practice.

				The programme entails 180 credits a year with much of it being in clinical multidisciplinary team roles. The roles of the advanced nurse specialist should include: autonomy in assessment, medical diagnosis, management of caseloads, education, consultancy, primary care, development of best-practice guidelines and research Topics to be studied include: ethics, professionalism, primary health care, literature reviews, statistics, interprofessional skills, literature review, evidence-based practice The programme should have core courses taking 42% of the credits and the rest assigned to speciality courses and practice. It is proposed that for every 1-credit, three should be 4 clinical hours practice, making 480 clinical practice hours for a 120-credit year. About 50% of the advanced practice nursing training should be research based. But the research should be clinical/practice based. The programme should be less classroom based and tailored towards the acquisition of clinical expertise and competencies. Final examination should be practical in nature. FUNDISA recommended that registrars' posts be created to enable the Advanced specialist nurses to focus on service delivery during their training.
7.	(East et al., 2014) Kenya <i>"Exploring the potential for advanced nursing practice role development in Kenya: A qualitative study"</i>.	To determine whether Advanced Nursing Practice existed or the potential to implement APN in Kenya	Exploratory qualitative design	Lower cadre of nurses have more autonomy in practice than highly qualified ones. Higher categories of nurses are either in managerial position or in education practice. There is a pressing need for ANP in Kenya. The existence of lower cadre physician 'clinical officer' threatens the APN programme. Private hospital nurses are more autonomous than those in public facilities. Perceived ANP roles taken by the participants are: providing specialist care, leading evidence-based practice, collecting data, leading units, Consultancy, Advocacy, autonomous case management, teaching nursing students, nursing research. The law does not permit nurses acting in these roles to prescribe so they take the action and wait for the physician to document. There however is an allowance for Private Practice Nurses (PPNs with minimum of 5 years' experience and license from the Department of Health) who had the least requirements for APN by ICN standards.
8.	(Essa, 2011) South Africa <i>"Reflecting on some of the challenges facing postgraduate nursing education in South Africa"</i>	To examine reasons why postgraduate students did not complete their degrees	Qualitative interpretive	All students are working: Part-time programme. Students are all adults: Students have family responsibilities. Students lack knowledge of teaching methods, examination policies, and programme structure. Many students realised they should have registered for a different programme. Some students do not have the necessary prerequisites to take on the programme. Students lack computer skills. Students lack resources: computer, transport, internet. Students believe postgraduate programmes demand time management, hard work and sacrifices. Student felt lecturers are unapproachable and unavailable. Students were new to the telematic broadcasts and felt uncomfortable and distanced from lecturers. Network interruptions during online tests made students anxious. Students do not have enough information on the programme. Students receive study materials late
9.	(Heale, Rieck Buckley & Heale, 2015), International	To review Advanced Nursing Practice status globally	An online survey Data were analysed through descriptive	Responses from the 4 African countries involved-Angola, Batswana, Sierra Leone and Togo. The barriers detected are that of resistive legislation and unwelcoming organizational environment.

	<i>“An international perspective of advanced practice nursing regulation”</i>		statistics and thematic analysis	25 of the programmes reviewed are at the master’s level. In many of the programmes, there are roles but here is no regulation. The roles existing are “nurse practitioner; clinical nurse specialist; advanced practice nurse; nurse specialist.
10.	(INEPEA, 2008a), East Africa <i>“Advanced Nursing Practice competence/ capability in East Africa”</i>	To describe Advanced Practice Nursing competency framework for east Africa	Synthesis competency framework	An advanced practice nurse must be registered and acquire complex decision-making skills and be competent clinically in his or her speciality field and the context in which he/she practices. AAPN is a master’s level programme. There is the need for the APN to be experienced in clinical practice, be a critical thinking leader, and clinically competent. Levels of nursing in Africa can be classified as: “Support worker, Enrolled nurse, Registered nurse, Specialist nurse and Advanced practice nurse”. The lower cadre of recognised prescribers (clinical officers, medical assistants, physician assistants) stalls the expansion of roles for nurses for APN. In addition to ICT, there must be: ICT use, knowledge management, Research, innovation and change, Education and mentoring, Budget management and value for money, Human resource management, Biostatistics and other epidemiology, Report writing and presentation, working with international partners, Evidence based practice, Empowerment of staff and healthy communities, Patient and staff safety and infection control The domains of knowledge to studied by the APN include: Leadership and management, research and knowledge management, education and monitoring, empowerment and healthy communities, professional and ethics practice The programme should focus on maternal and child health among others The roles of Advanced Practice nursing should be distinguished from other levels of nursing.
11.	(Kleinpell et al., 2014), International <i>“Addressing issues impacting Advanced Nursing Practice worldwide”</i>	To describe the barriers to the APN roles worldwide	Discussion paper	APN include “certified nurse midwife, certified registered nurse anaesthetist, clinical nurse specialist, and nurse practitioner”. APN is a minimum of a master’s level programme. The Institute of Medicine (IOM) stated that nurses need to be equipped and allowed to practice to their full potential in order to provide quality and cost-effectives services. Confusing scope of practice, role confusion, too many advanced practice nursing titles, inconsistent educational level of training, variable processes of training the APN are major challenges facing APN globally Global characteristics of APN is to diagnose, prescribe medications and treatments, referral of clients, admission of patients, legislation regarding APN and the legal use of the Advanced Practice Nurse title, Difficulties encountered by the APN is the lack of education programmes, inability to understand the APN roles and disrespect to the nursing profession Because countries are different in their level of health and healthcare capacity, the IOM stated that country specific regulations put restriction on the APN roles. Medical practitioner by-laws put restriction on APN. Authoritative medical leadership also inhibits interprofessional collaboration

				To remove the barriers, it is important to communicate the APN roles, use of media campaigns, lobbying with stakeholders, publish and proclaim the achievements of APN, demonstration of the roles for the public to have confidence in the programme. There is the need to ask patients receiving care from APN to advocate for the programme
12.	(Kolars et al., 2012), USA and SSA <i>“Partnering for medical education in Sub-Saharan Africa: Seeking the evidence for effective collaborations”</i>	To present the perspectives of collaborations between universities in the USA and Sub-Saharan Africa	Discussion paper	Good staff from SSA may be lured with inflated salaries. SSA cultures are influenced by colonial powers. SSA has 24% disease burden with 3% world health care personnel. Meagre financial support to produce health care workers in SSA. Most SSA schools suffer infrastructure, ICT, faculty and curricula issues. Curriculum is not developed to produce students with needed competencies in SSA. Curricula is not responsive to societal healthcare need. Some professions make it difficult for the roles of APN to be created. Some partnerships with USA undermine the needs of SSA healthcare system: another form of neo-colonialism.
13.	(Mccarthy, 2012), South Africa <i>“Description of nursing regulation and nursing regulatory bodies in east, central, and southern Africa”</i>	To survey the practices of nursing councils in East, Central and Southern Africa’s regulations especially task shifting.	Nursing council registers and stakeholders were reviewed and interviewed respectively	Task shifting existed in all the countries but the regulation and scope of practice have not been reviewed to confer the legal right on nurses to take on the roles they already being performing. The nursing councils have major role to play in making nursing regulation to march up with the advancing roles of nurses. Only Tanzania have updated its regulation to cater for nurses managing HIV cases. There is need for nursing council to play their roles for the development of the nursing profession.
14.	(Madubuko, n.d.), West Africa <i>“Nurse Practitioner/Advanced Nursing Practice development in West Africa: A proposal”</i>	To propose that defines the roles, education and scope of practice of Advanced Practice Nurses in West Africa	Position paper	There is no advanced practice nurse in west African nursing registers. There is need for lobbying, advocacy for the practice to be recognised. All registered nurses in West Africa have one or more specialist training. There are about a 1000 registered nurse with a master’s degree in West Africa. The nurse practitioner role already exists but not registered. The nurse practitioners work in PHC, assessment, medical diagnosis and Management of minor medical conditions, treatment of chronic illnesses. The programme for the APN should be at the Masters Level. The APN programmes should be developed in collaboration with universities, push the nursing councils to prepare registers for the category and motivate nurses to enrol in the programme. The broad learning objectives proposed by the West African Council of Nurses include: assessment, diagnosis, counselling, referral services, admission and discharge, evidence based practice. The shortage of medical profession creates a burden and a gap that the APN can easily fill and provide quality care for the neglected communities. The demand in PHC means there is the need to retrain nurses to take on the medical practice roles in PHC centres where the number of medical doctors cannot reach. The APN should be able to correctly request and interpret medical laboratory examination and results, give nutritional advice, promote health, involve in public screening services such as breast, cervical and prostate cancer screening.

15.	(Martel et al., 2014), Ghana <i>“The development of sustainable emergency care in Ghana: Physician, nursing and prehospital care training initiatives”</i>	To describe the process and initiative taken in the development of emergency care in Ghana	Discussion paper	Need assessment was conducted in 2010: nurses have interest in the emergency programme. 12 months emergency programme initiated: didactic, clinical and simulation based learning. South African emergency programme adapted for Ghana. South African experts were used to mentor Ghanaian. More emphasis on multi-disciplinary education.
16.	(Mutea & Cullen, 2012) Kenya <i>“Kenya and distance education: A model to advance graduate nursing”</i>	Developing a distance education model for advanced continuing nursing education	Discussion paper	Collaboration between four major stakeholders: health services, the community, the higher education institutions and the international partners Lessons: Distance education is economical, distance education increases access, advances in technology supports distance education, distance education has been successfully implemented in South Africa, Zimbabwe and china.
17.	(Mwangi, 2017), Africa <i>“How International Council of Nurses can export Advanced Registered Nurse Practitioner Policies in Africa”.</i>	To discuss how the Advanced Practice Nursing Policies can be exported to Africa	Discussion paper	Disease burden and health worker mismatch is profound in Africa. While the 25% of the world’s disease burden is being treated by the meagre 3% of the world’s health workforce with 3% of the healthcare resources, 30% of the worlds healthcare workforce uses 25% of the resources to treat only 3% of the disease burden in North America. The healthcare worker per population ratio in Africa is 2.3/1000. The majority of this being nurses. Nurses have played major roles in reducing the malaria endemic in west Africa and can do same for the general healthcare system if APN programmes are implemented. With Non-communicable disease burden rising despite the overwhelming communicable disease burden, it is important to implement health promotion services to respond to the healthcare needs of the population. This could easily be done by the APN. While more than ¾ of the medical doctors in SSA are concentrated in the cities, the majority of the population are rural dwellers. The ICN should implement projects in which nurses provide care for communities in order to use the successes of those projects to advocate for ANP programmes.
18.	(Mwangi, 2016), Kenya <i>“Why we need independent certified nurse practitioners /ARNP in Africa”</i>	A memorandum from Kenya Nurses to Kenyan parliament on the need for independent certified nurse practitioners /ARNP in Africa.	Position paper	ARNP shall be a 2 years masters level programme. Advance Registered Nurse Practitioner, Certified Nurse Midwife, registered Nurses Anaesthetic. The curriculum content shall consist of: “Interpreting Laboratory findings, Pharmacothraapeutics, Nutrition and dietetics, Emergency treatment, Assessment of community resources and referral systems, Role re-alignment, Legal issues in ARPN, Health Care Systems, Management of selected diseases, Differential diagnosis related to speciality problems, and 500 hours clinical education”. Nursing council shall regulate the practice of the ARPN. AARNP shall use a standard protocol in her practice. ARPN shall be supervised by a physician or dentist.

19.	(Pulcini et al., 2010), International <i>“An international survey on advanced practice nursing education, practice, and regulation”</i>	To provide an overview of the development of APN worldwide with respect to naming, education, where they practice, their scope of practice, the laws and political environment within which it is practiced.	A web-based survey of APN was conducted. 91 nurses from 31 countries responded.	There were 13 different names/titles given to APN discovered in this study. 71% of the 32 countries have APN education programmes. 50 % of these programmes are at the Masters level. 23 of these countries had the role of APN officially recognised. 48 % of these recognition and maintenance of registration status comes through licensure examinations. The programme is supported by local nursing organizations, nurses and the government whereas the greatest opposition came from the medical doctors and their organizations. The APN programmes are gaining grounds all over the world as it has the potential to provide quality healthcare to the world, especially, the underserved communities.
20.	(Regan et al., 2016) Rwanda <i>“Curriculum Development for Maternal, Newborn, Child Health: International Collaboration to Enhance Nursing Education in Rwanda”</i>	To describe the collaboration between Rwanda and Canada to develop maternal, new-born, and child health curriculum for Rwanda	The development of the first bachelors in nursing curriculum in Rwanda	There was an extensive collaboration between the stakeholders of nursing education and practice. Needs assessment was done to set the foundation for the curriculum development. Then there was the revision of the curricula, the development of the programme, training of the lecturers in the paediatrics programme, The developed curriculum was also reviewed by international experts. Burundi has learned from Rwanda to also develop a similar type of curriculum in nursing.
21.	(SANC & South African Nursing Council, 2005) South Africa <i>“Competencies for Paediatric Nurse Specialist</i>	Competencies of the paediatric nurse specialist (PNS)	Nursing Regulation	The focus is primary healthcare but can practice at all healthcare levels. The PNS screens, assesses, diagnose, plan care, implement care, evaluate care provided and or refers client to the appropriate healthcare setting for specific care. A child is anyone less than 19 years. The competencies are in five domains: Professional, ethical & legal practice; Clinical practice; Quality of practice; management and leadership; and research.
22.	(Sastre-Fullana et al., 2014), International <i>“Competency frameworks for advanced nursing practice: a literature review”</i>	To review literature of ANP worldwide	Literature review	There were six roles identified throughout the world. These include: “nurse practitioner, clinical nurse specialist, nurse midwife, nurse anaesthetist, consultant nurse and nurse case manager”. The APN role is the most common in all the countries included in the review. There were controversies surrounding the introduction of the programme as the medical doctors are not willing to allow nurses to take on diagnosis and prescription roles. More and more countries are turning to APN as the right category of health workers to respond to the inequality in the healthcare system. The APN are expected to be competent in leadership, interprofessional collaboration, clinical judgement, Ethico-legal practice, teaching, evidence-based practice, health promotion, cultural sensitivity, advocacy and change management. There are much commonalities in competencies in APN across the world.

				There is need for policy makers to develop tools to compare APN in different jurisdictions.
23.	(Seboni et al., 2013) SSA <i>“Shaping the role of Sub-Saharan African Nurses and Midwives: stakeholder’s perceptions of the Nurses’ and Midwives’ tasks and roles”</i>	To describe the roles of nurses in Sub-Saharan Africa to help policy on future nursing education	Qualitative descriptive study. 253 participants from 8 countries were involved in focus group discussions	The common nursing roles in Sub-Saharan Africa are: patient care, health education, care environment management, patient advocacy, involving in policy making, emergency care, stakeholder consultation and collaboration, midwifery services and child healthcare The stakeholders could not reach agreement on the diagnosis and prescription as roles of nurses. There need for the roles to be made explicit for the benefit of our societies we serve.
24.	(Sheer & Wong, 2008), International <i>“The development of advanced nursing practice globally”</i>	Examining how Advanced Practice Nursing has developed worldwide	Literature review. Documents available to ICN on 14 countries and 3 regions were analysed.	Nurses in Botswana and South Africa are evolving into the advanced practice role. Swaziland had an NP pro- gram that was discontinued, but efforts are being made to re-establish the program at the post baccalaureate level Africa is experiencing significant health issues including limited resources, extreme poverty, overwhelming chronic diseases such as HIV/AIDS, and a shortage of healthcare providers. In an opening address for the ICN NP/APN conference in Sandton, South Africa, Hlongwa (2006), a member of the Executive Council for Health, Gauteng, South Africa, acknowledged the contribution of nursing in health care, improving the quality of care with little resources. World Health Organization officials estimate that in some nations, over 80% of the healthcare needs are met by nurses (Hancock, 2005). Botswana is moving from a health system where care was provided by missionaries to a system of primary, district, and hospital care. In Botswana, the programme is confronted with lack of role model and reimbursement
25.	(Sietio, 2000), Botswana <i>“The Family Nurse Practitioner in Botswana: Issues and Challenges”</i>	To describes the issues and challenges faced by the Family Health Practitioner programme in Botswana	Discussion paper	Nurses form about 70% of the healthcare workforce and therefore serve as the first contact to patients entering the health system. Achieving success in Primary Health Care, therefore, is highly dependent on nurses. The curriculum of the Family Health Nurse places emphasis on skills such as assessment, medical diagnosis, management of common illnesses, preventive health and health promotion. The skills are acquired through theoretical nursing training, courses in social and medical sciences, public health courses, and an intensive clinical practice. The one-year programme was extended to 18months to better train the family health nurses to meet the needs of the population. A master’s level has been proposed for this programme. There is lack of faculty to deliver the programme. The courses taken include: “Family Nurse Practice 1/Health Assessment; Communication in Health Intervention; Family Nursing; Maternal and Child Health; Pharmacology; Public Health Sciences (Epidemiology, Research, Statistics); Clinical Nutrition; Mental Health Intervention; Dental Health Intervention; Laboratory Intervention; Maternal and Child health; Family Nurse Practice 11/Disease Diagnosis and management; Role Development; Practicum 11” The nurse practitioners mostly practice in the underserved community where they are the most qualified and therefore lead the PHC team. They also work in the OPD of higher level hospitals,

				in industries, rehabilitation clinics a and in private care. Private practice is difficult due to lack of reimbursement policies. The National Standing Drug Committee rated the family health practitioners high with regards to their assessment, diagnosis and appropriateness of prescriptions in comparison to medical doctors in Botswana. The challenges faced by the family nurse practitioners include lack of clarity in their roles, no pathway for career progression, and ambiguity in legislation regarding their practice. The scope of practice is silent on prescription by the family health practitioners
26.	(So et al., 2016), International <i>“Enhancement of oncology nursing education in low- and middle-income countries: Challenges and strategies”</i>	To discuss challenges and recommend strategies to enhance oncology nursing education in developing countries	Discussion paper	Challenges: Lack of educational specialization in oncology, lack of legal framework for oncology specialization education, limited opportunities of continuous education, difficulty in recruiting general nurses to oncology nursing. Strategies: Incorporate basic cancer care into preregistration programme, develop nursing faculty, establish programme sharing collaborations, involve international organizations, emphasises best practices, sustain oncology nursing programme by local involvement
27.	(Terry et al., 2012), SSA <i>“Task shifting: Meeting the human resources needs for acute and emergency care in Africa”</i>	To describe the effect of task shifting on emergency nursing care.	Literature review	Task shifting has been successful in the management of many conditions where there are less prepared health professionals. It is the potential solution in meeting limited access emergency care in Sub-Saharan Africa.
28.	(Uys et al., 2013) SSA <i>“Role analysis of the nurse/midwives in the health services in Sub-Saharan Africa”</i>	To describe the roles that nurses play in the healthcare system of Sub-Saharan Africa.	A survey was conducted with 734 nurses from 9 SSA countries	Nurses are mostly functioning in general nursing services and less in maternal and child health care services. Those in French countries have lesser scopes of practice compared to English speaking countries. It is important for the regulatory bodies to develop roles beyond that of general nursing practice. There is also need for the nursing profession in French speaking countries to be assisted to develop.
29.	(Wolf et al., 2012), Africa <i>“Developing a framework for emergency nursing practice in Africa”</i>	To discuss how an emergency nursing practice framework was developed for Africa	Discussion paper	Challenges facing emergency nursing: Nursing and physician shortage leading to understaffing and heavy workloads and task shifting, nurses are practicing outside their scope of practice, high occupational hazards. critical thinking is insufficiently taught in training, poor pre-registration emergency nursing training, no scope of practice, inconsistency in terminology across Africa, nurses are disrespected by some members of the multi-disciplinary team, nurses are poorly remunerated, only one emergency nursing professional body in Africa. Using Banner’s framework, the framework for emergency nursing was described in various phases: Novice, advanced-beginner, competent, proficient and expert nurse levels. The roles and responsibilities must be assigned according to the level of the nurse within the framework.
SESSION 2: CHILD HEALTH IN SSA				
No.	STUDY	AIM	RESEARCH DESIGN	FINDING/RECOMMENDATION

30.	(Ansong et al., 2016), Ghana <i>“Epidemiology of paediatric poisoning reporting to a tertiary hospital in Ghana”</i>	To record the incidence and prevalence of home poisoning in a city in Ghana	Retrospective record review	Paediatric poisoning a threat to the children in Ghana due to lack of parental supervision and poor storage of harmful substances at home. Comprehensive education of the population will help prevent such poisonings
31.	(Avogo, 2010), Angola <i>“Forced migration and child health and mortality in Angola”</i>	To study how forced migration affected the survival of children in Angola	Quantitative descriptive study. Data from a survey conducted 2 years after the civil war in Angola	Delivery at clinical facility, use of child healthcare services and child immunization status were affected by war and non-war migrants. War migrants being the most affected There is need to make evidence-based policies to cater for war migrants in Sub-Saharan Africa.
32.	(Breen, Daniels & Tomlinson, 2015) South Africa <i>“Children's experiences of corporal punishment: A qualitative study in an urban township of South Africa”</i>	To discuss children's experiences of corporal punishment in South Africa	Qualitative descriptive study, 24 qualitative interviews using children aged 8 to 12	Children experienced corporal punishment daily. This has negative emotional and behavioural effects on them. Information provided by the significant others differ from those of children, leading to gaps in evidence that hump the development of policies that address the menace in resource poor countries.
33.	(Burke, Heft-neal & Bendavid, 2016) SSA <i>“Sources of variation in under-5 mortality across Sub-Saharan Africa: a spatial analysis”</i>	To describe -mortality rate in Africa from 1980 to 2010	82 demographic survey data from 28 countries involving 393685 deaths were used in the study.	The mortality rate differs from country to country significantly. Local authority interventions compared to the national interventions is only found in 8-15 % of the population. 23% of the children in SSA lives in mortality prone areas. It will be difficult to reach the sustainable development goals if the mortality rate is not responded to. The local temperature, the burden of malaria and conflict within a country all affected child mortality rate. Policies should be put in place to respond to under-5 mortality in mortality prone zones in Africa.
34.	(Cheema, Stephen & Westwood, 2013) South Africa <i>“Paediatric triage in South Africa”</i>	To explain the key paediatric triage tools being used in South Africa.	Discussion paper	Reducing Child mortality and morbidity is essential in Sub-Saharan Africa. One of the triage tools (Emergency Triage Assessment and treatment-South Africa or South African Triage Scale should be used at all level of care in prioritizing emergency cases.
35.	(Children's Hospital Trust, 2015) South Africa The importance of	The importance of paediatric nurse training in Africa.	Web Publication	Approximately half of the total population of Southern Africa is made up of children and infant. Mortality is high across Africa. This is due to many factors not least the lack of expert healthcare specialists. South Africa helped Malawi to start specialist child health nursing training. The need for Paediatric nurses in Africa is a need we can no longer ignore

	paediatric nursing in Africa			
36.	(Claassen et al., 2016) South Africa <i>“Risks for communication delays and disorders in infants in an urban primary healthcare clinic”</i>	To describe the related factors to the delay in communication among children 0 to 12 months in South Africa	Qualitative descriptive study. A structured interview was used to collect data.	Maternal flu infection during pregnancy, previous miscarriage, smoking antepartum, low literacy level and poor economic status are the major factors that affect the children’s communication. There is need for early communication interventions in PHC
37.	(Cluver & Orkin, 2009), SSA <i>“Cumulative risk and AIDS-orphanhood: Interactions of stigma, bullying and poverty on child mental health in South Africa”</i>	To assess the effects of food insecurity, bullying and AIDS related stigma on AIDs orphans in acquiring diseases	Survey. 1025 adolescents as sample.	Stigma and bullying were most associated factors to AIDs orphanhood. There is the need to provide psychosocial counselling services to these orphans.
38.	(Coetzee, 2014) South Africa <i>“Re-envisioning paediatric nurse training in a re-engineered health care system”</i>	To investigate South Africa’s paediatric nurse training and develop ways to improve postgraduate paediatric nurse training	Colloquium	Curricula must be linked with national needs. Nurses form the foundation of child health care at clinics and hospitals. 50% of dead children die before arrival to the hospital Nurses learn how to recognise severity of disease, early detection and prevention, developmental delays and malnutrition, IMCI, history taking, clinical assessment and resuscitation, empowering parents to care for their children at home. Explore ways of developing a responsive and more flexible curriculum. Make educators take on dual clinical-lecturer roles, ensure nursing research is linked to child health issues The stakeholders of child healthcare in South Africa are the department of Health, the Department of Higher Education, the Nursing Education Institutions and the South African Nursing Council Paediatric nursing training must focus on PHC but graduates should remain clinically competent. Both taught curricula and nursing practice must be evidence-based. Paediatric nursing curricula redesign is eminent to inculcate clinical specialist views. Community placement is essential for paediatric nurse training
39.	(Coetzee et al., 2016) Africa <i>“Building paediatric nurse training capacity for Africa, in Africa”</i>	Developing, evaluating and refining a sustainable and contextual paediatric nurse training programme in Malawi and A South Africa	Discussion paper	Paediatric nurse training need to be strengthened to reduce child mortality in Sub-Saharan Africa. Training must be aligned with SSA population health needs. Nursing training in Africa had been benchmarked on western materials and philosophy Curriculum is at the centre of sustainable paediatric nursing workforce. There is an acute paediatric nurse shortage in many African countries Start with community engagement (Nursing Council, Ministry of Health) Blended programme between UCT and KCN. Contextual child issues are one module. Dialogue between university, ministry of health and ministry of education were necessary for the

				recognition and registration of the nursing graduates. There is the need to develop SSA specific nursing programme for child health. The training should be responsive to the context, population characteristic and the healthcare system.
40.	(Davis et al., 2014) South Africa <i>“Journal club: Integrating research awareness into postgraduate nurse training”</i>	To describe the importance of curriculum evaluation and refinement	Action research. “assess-plan-act-observe” design	Postgraduate paediatric nursing programme included foundations of child health and was built around the six major systems affected in childhood critical illness in Africa. The curriculum is refined regularly to meet the needs of Sub-Saharan Africa. The journal club helped in teaching evidence-based practice
41.	(Ebuehi, 2010) Nigeria <i>“Using community-based interventions to improve disease prevention practices of caregivers of under-5s in Ile-Ife, south-western Nigeria”</i>	To compare the knowledge and practices of caregiver practicing IMCI at community level	Cross-sectional design. Setting.	Implementation of IMCI produces positive child health outcomes than not introducing it. There is a gap to be filled in the caregiver’s skills and knowledge in caring for the under-5 children
42.	(Fairall et al., 2012) South Africa <i>“Task shifting of antiretroviral treatment from doctors to primary-care nurses in South Africa (STRETCH): A pragmatic, parallel, cluster-randomised trial”</i>	To determine whether non-physician can effectively and safely identify patients eligible for ART, prescribe and dispense ART to the edified clients at PHC level.	Pragmatic, parallel, cluster-randomised trial	Task shifting of ART from Doctors to Nurses is essential for ART expansion in Africa due to the acute shortage of medical doctors.
43.	(Feucht et al., 2012) South Africa <i>Incorrectly diagnosing children as HIV-infected: Experiences from a large paediatric antiretroviral therapy site in South Africa</i>	To evaluate the degree to which children are falsely diagnosed with HIV	A retrospective record reviews.	About 1 526 patient files were reviewed with the proportion of 1.01: 1 male to female ration. About 51 children were wrongly diagnosed as HIV positive. This created psychological problems for children and limits their life goals and expectations.

44.	(Foster & Brooks-Gunn, 2015) South Africa, Sierra Leone, Gambia and Rwanda <i>“Children's exposure to community and war violence and mental health in four African countries”</i>	To review the results of exposure to war on children's mental health	Literature review. Review of 24 qualitative studies from African countries	Regions of Africa present important macro-contexts for understanding children's various types of violence exposure amidst war and economic disadvantage. Findings of the review across 20 quantitative studies from 2004 to 2015 indicate consistent associations between exposure to war and community violence and children's symptoms of Post-Traumatic Stress disorder (PTSD), depression, and aggression. School climate and family support mitigate these ETV influences upon children: however, more research is needed on the buffering effects of such resources. The effects of war violence are mediated by perceived discrimination in communities, post-conflict. We integrate findings across studies to synthesize knowledge on children's ETV in Africa around a model of its correlates, mediators, and moderators in relation to mental health. Emerging research points to avenues for prevention and future inquiry.
45.	(Fowler et al., 2015) International <i>“Ready for practice: What child and family health nurses say about education”</i>	Assessing the readiness of Child and family health practitioners after education	Qualitative survey	Child and family health nurses play an important role in individual and family care. Child and family nursing is complex and requires prior-knowledge to cope with it. Clinical placement has the greatest impact on students.
46.	(Gilmore & McAuliffe, 2013), Middle-Income Countries <i>“Effectiveness of community health workers delivering preventive interventions for maternal and child health in low- and middle-income countries: a systematic review”</i>	To analyse the effectiveness of the community health workers maternal and child health care in resource poor countries	Literature review. 17 studies, out of the 10281 studies identifies, were included	The studies included came from ten countries. The quality of the studies was moderate. The main areas of preventive services rendered by the community health nurses were: prevention of malaria, health education, promotion of breastfeeding, new-born care and counselling. The community health workers were much effective in mother related strategies of prevention of under-five mortality such as exclusive breastfeeding and skin to skin kangaroo care.
47.	(Hendricks, McKerrow & Hendricks, 2016) Sub-Saharan Africa <i>“Factors present on admission associated with increased mortality in children admitted to a paediatric intensive care unit (PICU)”</i>	Determining the sociodemographic factors and paediatric assessment tool to use in maximizing benefits to children on admission	Retrospective review	Malnutrition resulted in about 16.6% child mortality rate. “Paediatric Risk of mortality, paediatric Logistic Organ Dysfunction and Paediatric Index of Mortality 3 all under predicted the mortality rate in children”.
48.	(Khalil, 2006), SSA	To define, explore and describe girl child abuse in Sub-Saharan	Discussion paper	Africa is huge with diverse sociocultural activities. Girl children are counted secondary children in many patriarchal societies in Africa. Many of the children are abuses through avoidance of

	<i>“Abuses of the girl child in some African societies: implications for nurse practitioners”</i>	Africa		education, female genital mutilation, arranged marriages, neglect, child prostitution, and child labour.
49.	(Kidman et al., 2010), Malawi <i>“AIDS in the family and community: The impact on child health in Malawi”</i>	To determine which HIV related phenomenon exposes children to high risk of poor health	Survey data were analysed using logistic multi-level modelling	The study found that the children whose parents have HIV-related illnesses carry a higher burden of chronic diseases. These children who have little parental care due to parent’s disease status are exposed to many dangerous situations. Children living with diseased parents are at high risk of cross infection. There is need for community based programmes to identify and manage children living with mother who are suffering from HIV-related illnesses. African countries must give enough attention to protection of children against HIV/AIDs and its related sicknesses.
50.	(Kruger et al., 2016) South Africa <i>“Outcome of children admitted to a general high-care unit in a regional hospital in the Western Cape, South Africa”</i>	To determine the prognosis of children admitted to a general healthcare unit in Cape Town South Africa	Retrospective descriptive	Main causes of death are Lower respiratory tract infections, acute gastroenteritis, asphyxia, and prematurity. 70% of the children admitted were treated and discharged.
51.	(Lake, 2014), South Africa <i>‘Children’s rights education: An imperative for health professionals’</i>	To describe the lessons learned from a short course on children’s right and child law for health in cape town, South Africa.	Discussion paper	The course creates the opportunity for healthcare workers to reflect on their child care practices. The course advocates for the inclusion of children’s right to health in education curricula. The course serves as a framework developing child rights into curricula regarding the competencies that the healthcare professionals must acquire for effective child healthcare.
52.	(Liu et al., 2016), International <i>“Global, regional, and national causes of under-5 mortality in 2000 – 15: an updated systematic analysis with implications for the Sustainable Development Goals”</i>	To update the estimates of child mortality from 200 to 2015 with regards to the MDG targets	Retrospective study	About 2.7million neonates die compared to the 5.9million under-5 deaths. The major causes of death include: preterm birth, pneumonia, intrapartum causes. In Sub-Saharan Africa, the most cause of under-5 mortality is pneumonia. The reduction of malaria, measles, diarrhoea, pneumonia, intrapartum related cases of death lead to about 35% reduction in under-5 mortality rate. Child survival interventions must be based on the causes of death in each MDG country. There is the need for continuous quality improvement in such strategies to meet the MDG targets.
53.	(Martyn et al., 2013),	To discuss the importance of paediatric nurse practitioners on	Discussion paper	Paediatric nurse practitioners can help meet the needs of underserved children. Children healthcare needs vary according to their growth and development

	International <i>“The paediatric nurse practitioner workforce: Meeting the health care needs of children”</i>	children’s health		Access to quality paediatric health care is essential for the children There is the need to increase paediatric nurse practitioners substantially Paediatric nurse education must address: access to the training, appropriate clinical experiences and efficiencies in length of time spent on degree
54.	(Masuku & Owaga, 2016) Swaziland <i>“Child malnutrition and mortality in Swaziland: situation analysis of the immediate, underlying and basic causes”</i>	To reinforce the need for collaboration among stakeholder for the sustainability of child nutrition strategies.	Position paper in-depth analysis of the causal factors of childhood malnutrition and mortality in Swaziland	Inadequate feeding, diarrhoeal diseases, HIV/AIDS, poverty, inadequate production of food, poor care of children and women, poor access to healthcare services, unhealthy living environments, inadequate maternal education, insufficient child healthcare workforce, poor distribution of resources and ineffective policy making are major causes of child malnutrition in Swaziland.
55.	(Minoiu & Shemyakina, 2014), Ivory Coast <i>“Armed conflict, household victimization, and child health in Cote d’Ivoire”</i>	To evaluate the effect of civil war on children’s health in Ivory Coast	Household survey data collected before, during and after the 2002-2007 conflict was analysed.	Children from areas much affected by the conflict had various healthcare deficits compared to those in areas with no conflict. The economic losses made by the households during the conflict had the most impact on the health of children
56.	(Mokomane et al., 2017) South Africa, <i>“Availability and accessibility of public health services for adolescents and young people in South Africa”</i>	To explore the accessibility of public health facilities to children and youth in South Africa.	Mixed method study	There are structure and systemic issues that hamper accessibility of the healthcare services to the adolescents and children. The cost of transportation to the clinics is a major barrier. The poverty level of the young in society is high but there is no social protection programme for such group except the disabled. This increases the financial burden on the adolescents and the young people to access health. The adolescent and the young people then remain vulnerable hence adopts dangerous behaviours which affect their health.
57.	(Mulaudzi, 2015) South Africa <i>“Adherence to case management guidelines of Integrated Management of Childhood Illness (IMCI) by healthcare workers in Tshwane, South Africa”</i>	To evaluate the adherence to IMCI guidelines at Primary Health Care settings in a city in South Africa	Retrospective data analysis	IMCI guidelines were not followed before referring children to hospitals. Seriously ill patients were given wrong IMCI classifications Prioritization of patients was poor due to wrong classification Expected primary healthcare was not given before referral Health care workers at primary healthcare clinics should be retrained in IMCI

58.	(Mulumba & Wilson, 2015), Africa “Sickle cell disease among children in Africa: An integrative literature review and global recommendations”	This paper presents an integrative review of 63 references related to SCD among children less than 18 years of age in Africa, published between 2000 and 2015	This review describes the prevalence, incidence and morbidity and current practices regarding sickle cell disease in Africa	There is the need to implement early diagnosis and treatment of new-borns with sickle cell disease as such practices have proved to reduce the morbidity and mortality in the developed world. Collaboration with the high resourced countries can help improve sickle cell disease care and indices in Africa.
59.	(Nannan et al., 2012) South Africa “Under-5 mortality statistics in South Africa: Shedding some light on the trend and causes 1997-200”	Summary of child mortality in South African hospitals from 2005-2009	Retrospective study	Five conditions accounting for 77% of child deaths include: acute respiratory infections, diarrhoea, septicaemia (bacterial), tuberculosis and meningitis. 3% of children die on arrival to hospital. 35% of children who died were malnourished and 30 % underweight. 31% of deaths occur within 24hours. 26 of deaths were considered avoidable. Delay in seeking care and inability of care givers to identify the severity of the conditions are modifiable factors. Clinical personnel are responsible for 55% of modifiable factors contributing to death. Empower care givers to recognise danger signs. Ensure all health workers dealing with children are competent. Ensure curricula are relevant for the health needs of the country
60.	(Nutor, 2012), Ghana “Household resources as determinants of child mortality in Ghana”	To investigate the contribution of household resources on under-5 mortality in Ghana	Maternal reports of child death were compared with household resources using survey-weighted logistic regression	Possession of refrigerator was highly associated with child mortality. Other associated factors are: lower level of education, older maternal age, rural dwelling, and multi-parity.
61.	(O'Malley et al., 2014), Africa “Africa's child demographics and the world's future”	To discuss the demography of Africa compared to the world.	Discussion paper	Africa's population doubled in 50 years and the population will double again by 2050. Based on the current population trends, there will be half of the population of the children in the world living in Africa by the end of this century. The increasing fertility rate and decreasing child mortality in Africa are the two main forces driving the population explosion. There is the need to invest in the health and wellbeing of children in Africa through PHC services and principles so as to respond to the expanding population. Paying attention to the demographics of Africa can inform policies and strategies to avoid losing another generation of children
62.	(Petrocchi-Bartal & Khoza-Shangase, 2014) South Africa “Hearing screening	To explore the adherence to PHC hearing assessment guidelines in South Africa	Qualitative descriptive study	There is lack of adherence to South African hearing screening guidelines at PHC clinics due to lack of equipment, budgetary constraints and lack of human resources.

	<i>procedures and protocols in use at immunisation clinics in South Africa”</i>			
63.	(Reddy, Patrick & Stephen, 2016) South Africa <i>“Management of acute diarrhoeal disease at Edendale hospital: Are standard treatment guidelines followed?”</i>	To determine the adherence of medical doctors to standard treatment guidelines in treating acute diarrhoeal diseases	Retrospective clinical audit	Diarrhoea diseases are a significant cause of under-five mortality. More work to be done to prevent preventable deaths. There is a significant non-adherence by doctors to standard treatment guidelines in managing children with diarrhoea diseases by doctors.
64.	(Reid et al., 2016) South Africa <i>“Where do children die and what are the causes? Under-5 deaths in the Metro West geographical service area of the Western Cape, South Africa, 201”</i>	To review the under-5 mortality rate in a province in South Africa	Retrospective study of under-5 deaths mortality using the hospital data capture platforms	There was under-5 mortality death rate of 18 per 1000 live births. The major causes of death include: pneumonia, gastroenteritis, prematurity and injuries. Alarming, was the 55% out of hospital deaths and the 65% deaths caused by pneumonia and gastroenteritis.
65.	(Solomons et al., 2008), South Africa <i>“An overview of hepatitis A at Tygerberg Children's Hospital”</i>	To discuss collaboration between University of Rwanda and Western University and other stakeholders in a project to enhance child health resources in Rwanda	Retrospective record review	There are gaps in Advanced Paediatric Nurse training regarding the need for the advanced practice nursing in paediatric nursing and the capacity of lecturers to teach in such programme. Nurse educators were trained by the Canadian collaborating institution on distance education basis. The lessons learned from Rwanda are being used to develop same programmes in Burundi.
66.	(Thandrayen et al., 2010) South Africa <i>“Quality of care offered to children attending primary health care clinics in Johannesburg”</i>	To assess the quality of child health care services, provide at the PHC in South African city.	Observational study	There was long waiting time a at the PHC. Identification and attention to danger signs were poorly done. Unwarranted antibiotics were prescribed in almos33% 0 of cases Growth monitoring and nutritional counselling was inadequate. Food supplements were not giving to deserved children. A deliberate and pragmatic restructuring of the PHC for children is required to improve quality of care for the children
67.	(Tong, 2015) Kenya <i>“Describing the health care needs of school-age children in Sub-Saharan Africa in order to develop a model of a nurse-run school-based health</i>	To determine the lapses in health care for school going children in order to propose a model to address it.	A systematic review was triangulated with stakeholder interviews	Physical, human and financial resource limitations affected the healthcare of children in Kenya. A nurse run-school based clinic is proposed to address the healthcare delivery deficit in for school children

	<i>clinic”</i>			
68.	(Vaaltein & Schiller, 2017), South Africa <i>“Addressing multi-dimensional child poverty: The experiences of caregivers in the Eastern Cape, South Africa”</i>	This paper explores the experiences of caregivers in the Eastern Cape Province regarding the alleviation of child poverty, and presents a case for the expansion of monetary support to effectively address the multi-dimensional focus of child poverty in South Africa.	Phenomenological research design was followed by conducting semi-structured interviews and a focus group discussion with 20 participants who were purposively drawn from four urban and rural areas in the Eastern Cape	The employment level is such that most of the caregivers depend on the child support grant given to the children. The findings concur with the view that the Child Support Grant (CSG) ³ monetary support should be increased to better accommodate the multi-dimensional child poverty needs of the CSG recipients. The findings illustrate that most of these children were not experiencing any chronic illnesses but challenges to accessing quality health care services against the backdrop of using the CSG to alleviate child poverty. When children experience common illnesses, caregivers indicated a preference to access health care services from private facilities rather than from public facilities. This is due to challenges with distance and mobility, as well as the caregiver's perceived poor-quality services received when in public health centres. They did indicate, however, that they have to find other means to pay for the medical costs as the CSG cannot be stretched that far. Participants reported experiencing challenges with lack of support from the children's fathers who are either unable to support children because they have passed away or they neglect their responsibilities for their children. This then leaves the participants to care for the children on their own.
69.	(van As, 2010) South Africa <i>“The health of our children should be the measure of our progress”</i>	Opinion titled ‘The health of our children should be the measure of our progress	Expert Opinion	Approximately half of South African population are children. A child is anyone less than 19years of age University of Cape Town’s department of surgery contribute to child health in liver transplantation, paediatric trauma care and child accident prevention Unintentional injuries kill about 6500 children yearly in South Africa.
70.	(Westwood, Levin & Hageman, 2012) South Africa <i>“Paediatric admissions to hospitals in the Cape Town Metro district: A survey”</i>	To determine the level of care requirement of children in Cape Town.	A point prevalence survey	10 % of children hospitalized do not need to be in hospital. 77% of children hospitalised are under five years of age. Respiratory and gastro-intestinal conditions dominated at level one and 2 units. Only 28% of level 1 patients were in level one hospital as more than whereas 200% of clients requiring level one care are in level 2 hospitals than in level 1. Services too sophisticated for patient needs. Level 1 cases are predominantly infectious and nutritional problems. There is shortage of level 1 beds.
71.	(Whitworth, Sewankambo & Snewin, 2010), Africa <i>Improving Implementation: Building Research Capacity in Maternal, Neonatal, and Child Health in Africa</i>	To discuss the failure to implement evidence-based maternal and child health services in Sub-Saharan Africa.	Discussion paper on maternal and child health	There is the need for African governments to support and fund research in child health. The high numbers of child mortality in Africa needs urgent solutions. There is the need for the government to support institutions and researchers to investigate the cause and formulate interventions to deal with the issues relating child mortality in Africa. The evaluation of West African child survival programme shows that there was no improvement in child survival in the region. Most of the well-meaning interventions are developed in Washington, Geneva, or London with little or no consultation with the Sub-Saharan Africa grassroot. International organizations are important but they must come and listen to the people on the grounds in SSA.

72.	(Witternberg, 2010) South Africa <i>“Early intervention in child health in South Africa”</i>	Early intervention in Child Health in Africa	Expert opinion	Early detection and intervention is the right of every individual in community according to the Batho Pele principles. Early detection and prevention of childhood hearing loss is of primary focus.
73.	(Wittenberg, 2013) South Africa <i>“Qou Vadis Child health in South Africa”</i>	Child health in South Africa	Expert opinion	Many of the interventions that have positive impact on child healthcare in Africa is Primary Health care. These interventions are cost-effective
74.	(World Health Organization, 2016b) International <i>“Sustainable Development Goals (SDGs) SDG 3: Ensure Healthy Lives and Promote Wellbeing for All at All Ages”</i>	To present the Sustainable development goals to health	Working document on healthcare	Under-5 mortality rate must be at 25 per 1000 live births and neonatal mortality to 12 per 1000 live births by 2030. All preventable child deaths must be ended by 2030. In the same period, AIDS, tuberculosis, malaria and neglected tropical diseases epidemics must be ended and also fight against hepatitis, water-borne diseases and other communicable diseases.
75.	(World Bank Group, 2015), Africa <i>Africa's Demographic Transition; Dividend or Disaster?</i>	To discuss whether the population growth of Africa will help improve or hamper healthcare delivery	Discussion paper	Countries in Sub-Saharan Africa have both higher fertility <i>and</i> higher under-five mortality than elsewhere in the world. The importance of lower child mortality in fertility decline suggests that African countries with high child mortality rates should focus first on improving child health and then on reducing fertility. The responsiveness of fertility to a decline in mortality also means that health interventions that save children’s lives cause an increase in population; however, this period of population growth is temporary and counterbalanced by falling fertility in the long run.

ANNEXURE B: DELPHI PHASE 1 QUESTIONNAIRE

Confidential

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DELPHI PHASE 1: Development of an Advanced Practice Nursing (Child Health Nurse Practitioner) Curriculum Framework for Sub-Saharan Africa

The purpose of this study is to develop a curriculum framework to guide the development of an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum that will meet the healthcare needs of Sub-Saharan Africa. A scoping review has been conducted to develop the first phase questionnaire of the Delphi. A subsequent questionnaire will be derived from the results of phase one of the Delphi to which you are being invited to participate. The questionnaire should take approximately 20-25 minutes to complete. There is space provided at the end of each session for any additional comments/suggestions. It is expected that the documents will reach you by the middle of February 2017. It is anticipated that the Delphi will progress through a minimum of three phases. If the expert group has not reached consensus on the 3rd phase, a fourth phase and subsequent phases will be included. You are kindly requested to complete the questionnaire within ten (10) working days so as to enable the study to progress according to schedule. Depending on the results of each round's questionnaire, an adapted questionnaire will be compiled for the subsequent round of the Delphi technique. The results of a previous phase of the Delphi will be communicated to you along with the questionnaire for the subsequent phase.

The questionnaire is in three sessions. Session one covers the socioeconomic environment and the healthcare context within which the Advanced Practice Nurse is expected to be trained and function. Session two covers the international and national expectations of the Child health Nurse Practitioner (CHNP).

The last session describes who the CHNP is and what knowledge, skills and attitudes she/he must acquire. Consensus on these three phases will enable us to decide on what must be taught and learned in the Child health Nurse practitioner programme.

Please select the option from strongly disagree (1)- strongly agree (5) to each statement as follows.

SESSION 1: CURRENT CONTEXT

This section describes the social and economic environment in which educational policy is made and in which teaching and learning occur.

Please select the option from strongly disagree (1)- strongly agree (5) to each statement as follows.

- | | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1) Healthcare in Sub-Saharan Africa should be oriented more to preventative than curative care | ☒ | ☐ | ☐ | ☐ | ☐ |
| 2) The Child Health Nurse Practitioner (CHNP) is relevant to the healthcare needs of children in Sub-Saharan Africa. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3) | | | | | |

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The CHNP programme should be at a masters level (NQF level 9 of South Africa) of nursing education. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4) The CHNP should practice autonomously | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5) The CHNP should prescribe medications for children | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6) The CHNP should practice only at Primary Health Care and District hospital settings | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7) The CHNP should practice under the supervision of a paediatrician at all levels of care | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8) The CHNP training programme should be fully funded by the national governments. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9) A "child" is anyone less than 19 years of age. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10) The CHNP practising at PHC level should be remunerated with additional salary compensation. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 11) The CHNP's should be posted to areas where they can speak the local language of the community. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 12) The CHNP should be licensed to provide private care (set up a private clinic). | ☐ | ☐ | ☐ | ☐ | ☐ |
| 13) Please comment on session one: | | | | | |

SESSION 2: EDUCATIONAL POLICY STATEMENT

Describes the government's goals for education, such as the development of skills needed for economic prosperity and the creation of a stable and tolerant society.

Sustainable Development Goal 3 is essential for Child Health Care and PHC in Sub-Saharan Africa.

To achieve the Sustainable Development Goal 3 targets relating to Child mortality and access to health: 1. "By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births" 2. "Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all"

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
14) By the 10th year of implementation of the CHNP programme, there should be a Child Health Nurse Practitioner at every Primary Health Care clinic.	☒	☐	☐	☐	☐
15) By 2030 under-five mortality rate should be 12 per 1000 or below.	☐	☐	☐	☐	☐
16) By 2030 there should be at least one(1) CHNP per 1000 children in Sub-Saharan Africa	☐	☐	☐	☐	☐
17) In the 20th year of implementing the CHNP programme, there should be at least two (2) Child Health Nurse Practitioner in every children's ward in all district hospitals	☐	☐	☐	☐	☐
18) The CHNP should be a district and community IMCI (Integrated management of Childhood illnesses) coordinator.	☐	☐	☐	☐	☐
19) The CHNP should be an expert in the resuscitation of babies	☐	☐	☐	☐	☐
20) The CHNP programme should aim at decreasing the rate of admission of children into acute wards	☐	☐	☐	☐	☐
21) Please comment on session two					

SESSION 3: STATEMENT OF BROAD LEARNING OBJECTIVES

Describes what students should know and be able to do when they complete their school education. Outcomes should be expressed in a range of domains, including knowledge, understanding, skills, and competencies, values and attitudes.

1. Domain A: Leadership and Management (22-30)

2. Domain B: Quality Practice (31-36)

3. Domain C: Ethico-legal and professionalism (37-47)

4. Domain D: Education and Research (48-54)

5. Domain E: Advance Nursing Practice (55-73)

6. Domain F: Attitudes and Values (74-83)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
22) The CHNP should be a mentor, coach, change agent and a consultant in child health nursing all of these things in one go?	☒	☐	☐	☐	☐
23) The CHNP should engage in setting standards for child health nursing practice in their country	☐	☐	☐	☐	☐
24) The CHNP should initiate programmes that will improve the lives of children in SSA	☐	☐	☐	☐	☐
25) The CHNP must be a team builder	☐	☐	☐	☐	☐
26) The CHNP should lead the management of clinical care of children at PHC level	☐	☐	☐	☐	☐
27) The CHNP should manage or assist in managing healthcare resources at their settings	☐	☐	☐	☐	☐
28) The CHNP must be a child advocate within their community and country	☐	☐	☐	☐	☐
29) The CHNP should contribute to research and professional engagements in the development and implementation of practice standards.	☐	☐	☐	☐	☐
30) The CHNP should use best practice in the management of children.	☐	☐	☐	☐	☐
31)					

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The CHNP should implement quality improvement practices in order to improve access, safety and effectiveness of PHC for children in the community they serve. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 32) The CHNP should keep up to date on current best child health practices and implement them in his/her practice. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 33) The CHNP must ensure her/his practices conform to professional practice standards. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 34) The CHNP should engage in lifelong learning within the practice area | ☐ | ☐ | ☐ | ☐ | ☐ |
| 35) The CHNP should ensure personal development to maintain competence in PHC (Primary Health Care). | ☐ | ☐ | ☐ | ☐ | ☐ |
| 36) The CHNP must engage the staff and community leadership in the development of short learning programmes for community healthcare staff. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 37) The CHNP should utilise ethical theories and principles in paediatric services | ☐ | ☐ | ☐ | ☐ | ☐ |
| 38) The CHNP must adhere to and enforce staff adherence to all relevant ethical codes of conduct set by the nursing profession and regulatory body. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 39) The CHNP must engage the community in ensuring children are protected from dangerous healthcare practices | ☐ | ☐ | ☐ | ☐ | ☐ |
| 40) The CHNP must contribute to the resolution of ethical issues in practice. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 41) The CHNP must ensure practice is within the boundaries of the law of the country. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 42) | | | | | |

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|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The CHNP must evaluate her/his own practice in relation to professional practice standards. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 43) The CHNP should be responsible and accountable for own decisions, actions or omissions in childcare. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 44) The CHNP should engage in performance appraisal on a regular basis | ☐ | ☐ | ☐ | ☐ | ☐ |
| 45) The CHNP must provide a rationale for decisions and actions in the care of the child | ☐ | ☐ | ☐ | ☐ | ☐ |
| 46) The CHNP should develop community- specific child healthcare programmes to improve community health outcomes | ☐ | ☐ | ☐ | ☐ | ☐ |
| 47) The CHNP should accurately document all clinical information related to child health care provided. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 48) The CHNP should engage in teaching, mentoring, supervision and coaching, giving feedback into educational curriculum, do school and community health education and screening | ☐ | ☐ | ☐ | ☐ | ☐ |
| 49) The CHNP should ensure research and clinical experience are inculcated into practice | ☐ | ☐ | ☐ | ☐ | ☐ |
| 50) The CHNP should critically evaluate paediatric nursing research in order to determine their clinical significance and application | ☐ | ☐ | ☐ | ☐ | ☐ |
| 51) The CHNP must use best practice evidence to guide practice | ☐ | ☐ | ☐ | ☐ | ☐ |
| 52) The CHNP should engage in clinical research problem identification | ☐ | ☐ | ☐ | ☐ | ☐ |
| 53) | | | | | |

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The CHNP must participate in clinical research projects to improve child health | ☐ | ☐ | ☐ | ☐ | ☐ |
| 54) The CHNP must develop policies, procedures, and guidelines based on research findings | ☐ | ☐ | ☐ | ☐ | ☐ |
| 55) The CHNP should provide family-centred care | ☐ | ☐ | ☐ | ☐ | ☐ |
| 56) The CHNP should conduct a needs assessment and provide health education that enhances risk reducing behaviours (safety), developmental needs and activities of daily living. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 57) The CHNP must develop child health promotion programmes for the community based on needs assessment. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 58) The CHNP must conduct a thorough head-to-toe physical examinations to diagnose and manage clients. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 59) The CHNP should apply critical inquiry skills and clinical reasoning to do differential diagnosis. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 60) The CHNP must document and share case management procedures and lessons learned with client, family and members of the health care team respecting clients' confidentiality and privacy. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 61) The CHNP should employ evidence based information to make clinical judgements on clients' overall health status. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 62) The CHNP must prioritise and manage emergencies, and life-threatening conditions accordingly. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 63) The CHNP should utilise expert knowledge to interpret results of screenings and diagnostic investigations conducted. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 64) | | | | | |

The CHNP should provide outcome criteria for diagnoses made	☐	☐	☐	☐	☐
65) The CHNP should develop a prioritised plan of care that includes interventions and alternatives	☐	☐	☐	☐	☐
66) The CHNP must prescribe appropriate medication for specific diagnosis.	☐	☐	☐	☐	☐
67) The CHNP must review the client management plan with other staff and family members.	☐	☐	☐	☐	☐
68) The CHNP must refer clients to an appropriate health care setting.	☐	☐	☐	☐	☐
69) The CHNP should collaborate with other staff and family to implement the management plan.	☐	☐	☐	☐	☐
70) The CHNP must manage side effects of medications successfully.	☐	☐	☐	☐	☐
71) The CHNP should monitor and evaluate the progress of the childcare plan	☐	☐	☐	☐	☐
72) The CHNP must provide follow-up care.	☐	☐	☐	☐	☐
73) The CHNP must involve the client, family and multidisciplinary team the evaluation of care provided.	☐	☐	☐	☐	☐
74) The CHNP must collaborate and communicate with the child, family, multidisciplinary team and community in providing health services	☐	☐	☐	☐	☐
75) The CHNP should make care patient-centered, family-centered or community centred.	☐	☐	☐	☐	☐
76) The CHNP should make family and community members responsible for health projects and life style changes.	☐	☐	☐	☐	☐
77)					

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The CHNP should be friendly and approachable to clients, family and community. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 78) The CHNP should engage community members in research and evaluation of care. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 79) The CHNP should have high level of autonomy in practice and responsible for actions taken. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 80) The CHNP must demonstrate critical thinking, and complex decision-making skills. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 81) The CHNP must be culturally sensitive to the needs of the community. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 82) The CHNP should strive to continually improve health care services | ☐ | ☐ | ☐ | ☐ | ☐ |
| 83) Please comment on session three. | | | | | |

ANNEXURE C: DELPHI PHASE 2 QUESTIONNAIRE

DELPHI PHASE 2 (FOLLOW UP ON PHASE 1): QUESTIONNAIRE DEVELOPMENT OF ADVANCED PRACTICE NURSING (CHILD HEALTH NURSE PRACTITIONER) CURRICULUM FRAMEWORK FOR SUB-SAHARAN AFRICA: A MULTI-METHODS STUDY

Out of the 80 Likert scale questions (1-12, 14-20, 22-82), consensus (80% and above) have been reached on seventy one (71). The expert group could not reach consensus on nine (9) Delphi statements which are all in session 1 (current context) i.e. questions 3, 4, 6, 7, 8, 9, 10, 11 and 12. These nine (9) questions have been modified for follow-up phase two as seen below. The comments made by some experts on the questions have also been provided with the questions below.

Q3. The CHNP programme should be at a master's level (NQF level 9 of South Africa) of nursing education.

Result: The expert group reached 78.9% agreement that the CHNP programme should be at the master's level. 5.8% disagreed and 15.8% were neutral. [**Comment:** *The CHNP programme should be at a minimum of bachelor's degree level*].

Please advise:

Q4. The CHNP should practice autonomously.

Result: 76.3 % of the expert group reached agreement that the CHNP should practice autonomously. 10.5% disagreed whereas 132 remained neutral. [**Comments:** *To be autonomous, the CHNP should have a pharmacy dispensing certificate. The CHNP should work under paediatrician for at least 3 years to be autonomous. It is time to have the CHNP practice autonomously. I am not sure what autonomous means' since CHNP's will work with multidisciplinary team. The CHNP and paediatrician should work collaboratively. The CHNP should work autonomously but refer client when need be.*]

Please advise:

Q6. The CHNP should practice only at Primary Health Care and District hospital settings.

Result: 44.7% of the expert group agreed that the CHNP should practice at PHC and district hospitals. 42.1% disagreed and 13.2% of the experts remained neutral. *[Comments: The CHNP should practice at all levels and in private practice. The essential skills of the CHNP should be at all levels. Looking at the health care system structure, it will be better for CHNP to practice at PHC and district hospitals.]*

Please advise:

Q7. The CHNP should practice under the supervision of a paediatrician at all levels of care.

Result: 63.2 % of the expert group disagreed to the fact that the CHNP should practice under the supervision of the paediatrician at all levels. 18.4 percent agreed and 18.4% remained neutral. *[Comments: The CHNP should only be supervised for 3 years. The CHNP should work at all levels. The CHNP should practice under paediatrician at all levels. The CHNP should collaborate with paediatrician at district hospitals]*

Please advise:

Q8. The CHNP training programme should be fully funded by the national governments.

Result: 60.5 % of the expert group agreed that the CHNP programme should be government funded. 13.5% disagreed whereas 26.3% of the experts remained neutral. *[Comments: Government can fund the CHNP programme depending on their economy and priorities. Full government funding will attract more nurses but individuals (students) should take part of the cost. Non-governmental and international organisation should assist governments in funding the CHNP programme. Funding training will be very useful to ensure more nurses get into the CHNP programmes.]*

Please advise:

Q9. A "child" is anyone less than 19 years of age.

Result: 47.4 % of the experts disagree that a child is anyone less than 19 years.36.8% agreed on the definition whereas 15.8% were neutral. **[Comments:** *Not all countries define a child to be less than 19 years. Other countries use less than 16 years. I think 18 years old person is not a child. A child is 5 years and younger. I believe anyone age 18 is no longer a child.]*

Please advise:

Q10. The CHNP practising at PHC level should be remunerated with additional salary compensation.

Result: 68.4% of the expert group believes that the CHNP practicing at the PHC level should be given extra remuneration, 21.1% disagreed whereas 10.5% remained neutral. **[Comments:** *Compensation should be changed to remuneration. CHNP's will not need any extra remuneration. Training should be funded by government and no additional remunerations should be given. It is very necessary to adequately remunerate CHNP's.]*

Please advise:

Q11. The CHNP's should be posted to areas where they can speak the local language of the community.

Result: 71.1% of the expert group have agreed that the CHNP should be able to speak the language of the community served, 21.1% of the group disagreed whereas 7.9% remained neutral. **[Comments:** *speaking the local language is important but it must not be adhered to*

strictly in posting as some areas may be disadvantaged due to lack of CHNP's not being posted to them. limiting posting based on language may not make work interesting and will create challenges like not learning from other cultures. I strongly believe HNP's should be posted to where they can speak the language of the people.]

Please advise:

Q12. The CHNP should be licensed to provide private care (set up a private clinic).

Result: 76.3% of the expert group agreed that the CHNP should be licensed to provide private healthcare. 10.5% of the experts disagreed whereas 13.2% remained neutral. [**Comments:** *The CHNP should be licensed to practice in private practice. I believe the CHNP should have the option to go into private practice.*]

ANNEXURE D: DELPHI PHASE 3 QUESTIONNAIRE

DELPHI PHASE 3: QUESTIONNAIRE

DEVELOPMENT OF ADVANCED PRACTICE NURSING (CHILD HEALTH NURSE PRACTITIONER) CURRICULUM FRAMEWORK FOR SUB-SAHARAN AFRICA: A MULTI-METHODS STUDY

SECTION 4: STRUCTURE OF EDUCATION SYSTEM

The structure of the educational system describes the organisational system in which the curriculum framework is to be implemented, specifying the number of years, the number of school weeks within the years and number of hours to be completed for school work within a school week. **Please respond to the following questions.**

TIP: To select the check box ☐, double click on the box ☒, Select checked under the option 'Default value' and click ok.

1. At what level of education should the Child Health Bachelors Nurse Practitioner programme be implemented?
 - a. Bachelors ☐
 - b. Postgraduate Diploma ☐
 - c. Master's ☐
2. What form of enrolment (Full-time or Part-time) will be effective for the implementation of the Advanced Child Health Nurse Practitioner Programme)
 - a. Full-time ☐
 - b. Part-time ☐
3. How many academic years should a full-time Advanced Child Health Nurse Practitioner programme be implemented?
 - a. One Year ☐
 - b. Two (2) Years ☐
 - c. Three Years ☐
4. How many weeks within the academic year should be covered in the Child Health Nurse Practitioner programme?
 - a. 44 weeks ☐
 - b. 42 weeks ☐
 - c. 40 weeks ☐
5. How many hours within the academic week should be covered in the Child Health Nurse Practitioner programme?
 - a. 100 hours ☐

- b. 80 hours ☐
 - c. 60 hours ☐
- 6. How many years of internship/preceptorship should a graduate Child Health Nurse Practitioner undergo?
 - a. No internship ☐
 - b. One (1) year ☐
 - c. Two(2) Years ☐
- 7. Which of the following learning systems should be implemented in the Child Health Nurse Practitioner programme?
 - a. Case-based learning ☐
 - b. Concept-based learning ☐
 - c. Problem-based Learning ☐
 - d. Community-based learning ☐
 - e. Outcome based ☐

Please comment on this session:

SESSIONS 5, 7 and 8: STRUCTURE OF CURRICULUM CONTENT, TEACHING AND ASSESSMENT METHODS

DOMAIN A: LEADERSHIP AND MANAGEMENT

Leadership and management aspect of the CHNP programme covers leading change, mentoring, initiation of programmes that improve the lives of children, resource management, child advocate, contribute to development of practice standards, policies and protocols and promote the use of best practices. **Please provide at least five key topics to be learned under this domain, how they should be learnt/taught and how learning could be verified (assessed).**

No.	Topic	Teaching methodology	Mode of assessment
1.			
2.			
3.			
4.			
5.			

DOMAIN B: QUALITY PRACTICE

The quality practice domain of the CHNP programme includes quality improvement and continuous professional development.

Please provide at least five key topics to be learned under this domain, how they should be learnt/taught and how learning could be verified (assessed).

No.	Topic	Teaching methodology	Mode of assessment
1.			
2.			
3.			
4.			
5.			

3

DOMAIN C: ETHICO-LEGAL PRACTICE AND PROFESSIONALISM

Ethico-legal practice and professionalism domain include the use of ethical theories and principles, adherence to ethical codes of conduct set by regulatory bodies, resolution of ethical issues in practice, ensure practice within the boundaries of the laws of the country served, engage in performance appraisal, utilise knowledge of child development in providing overall child care, develop community specific child healthcare programmes to improve community health outcomes and provide accurate documentation of all clinical information related to child health care provided. **Please provide at least five key topics to be learned under this domain, how they should be learnt/taught and how learning could be verified (assessed).**

No.	Topic	Teaching methodology	Mode of assessment
1.			
2.			
3.			
4.			
5.			

DOMAIN D: EDUCATION AND RESEARCH

Engagement in teaching, reviewing education curriculum, school and community health education, promote evidence based practice, participate and in research and utilize research in practice to improve child health. **Please provide at least five key topics to be learned under this domain, how they should be learnt/taught and how learning could be verified (assessed).**

No.	Topic	Teaching methodology	Mode of assessment
1.			
2.			
3.			
4.			
5.			

4

DOMAIN E: ADVANCED NURSING PRACTICE

The Advanced Practice Nursing domain includes provision of patient-centred care through holistic assessment (including requesting and interpreting laboratory tests), diagnosing (medical diagnosis), planning care (prescription of medications), evaluating care and promoting good therapeutic relationship with client, family and community.

Please provide at least five key topics to be learned under this domain, how they should be learnt/taught and how learning could be verified (assessed).

No.	Topic	Teaching methodology	Mode of assessment
1.			
2.			
3.			
4.			
5.			

DOMAIN F: ATTITUDES AND VALUES

This domain deals with the CHNP's attitudes towards the child, family and the community. She/he is expected to be friendly and approachable to clients, show high level of autonomy and take responsibility for actions, be culturally sensitive, show commitment in improving the healthcare of the community served, demonstrate critical thinking and complex decision making skills and make family and community responsible for health care projects and lifestyle changes within the community. **Please provide at least five key topics to be learned under this domain, how they should be learnt/taught and how learning could be verified (assessed).**

No.	Topic	Teaching methodology	Mode of assessment
1.			
2.			
3.			
4.			
5.			

Please comment on this session:

ANNEXURE E: DELPHI PHASE 4 QUESTIONNAIRE

Confidential

Page 1 of 2

Resources Needed for Advanced Practice Nursing (Child Health Nurse Practitioner) Programme in Sub-Saharan Africa

I am very grateful for your expert inputs into this project. it has been a very interesting journey with you.

Please complete this survey.

Thank you!

The Advanced Practice Nursing (Child health Nurse Practitioner Programme) is:

1. A 2-years full-time masters programme

2. 40weeks a year

3. 60 hours a week

4. One year post graduation internship

5.administered mostly by problem-based learning.

Please give your expert inputs on the resources needed to implement this programme successfully in SSA.

- | | |
|---|---|
| 1) What (minimum) nursing qualification should be accepted for this programme? | ☐ Three(3) years BSc/BN/BCur Nursing
☐ Four (4) years BSc/BN/BCur Nursing
☐ Advanced Diploma in Nursing |
| 2) What grade point average (minimum) should be considered for admission into the programme? | ☐ 50%
☐ 60%
☐ 70% |
| 3) How many years (minimum) should the student practice nursing (post community/national/youth service) to be qualified for this programme? | ☐ One(1) year
☐ Two (2) years
☐ Three(3) years
☐ Four(4) years |
| 4) Please indicate any prerequisite preregistration courses/subjects/modules the student should have taken before qualifying for this programme | _____ |
| 5) Please indicate any other student requirements for admission into the Advanced Practice Nursing (Child Health Nurse Practitioner) programme. | _____ |
| 6) What should be the minimum qualification of a nursing lecturer/facilitator in this programme? | ☐ MSc Nursing (Coursework + Research Report)
☐ MSc Nursing (Research)
☐ Ph.D. Nursing |
| 7) What should be the minimum qualification of a non-nursing lecturer/facilitator in this programme? | ☐ MBChB
☐ Masters(MMed, MPharm etc)
☐ PhD |

- 8) What specific qualifications should a lecturer/facilitator have to qualify him/her to teach Essential Skills in Nursing (Communication, Ethos, Therapeutic relationship, Scope of Practice and Critical thinking)?
- 9) What Library resources will you prefer an institution in SSA to have to be able to implement this programme?
- ☐ 1 textbook per 5 students
 - ☐ 1 textbook per 10 students
 - ☐ 1 computer per 3 students
 - ☐ 1 computer per 5 students
 - ☐ one computer per 10 students
 - ☐ Internet Services
 - ☐ At least one online learning platform (eg.Sakai)
 - ☐ Subscription to Research database
 - ☐ Online book
- 10) What classroom resources should a school have to be able to implement this programme?
- ☐ One LCD projector per class
 - ☐ Comfortable table and chairs for students
 - ☐ Air conditioning /heater/fan per class
 - ☐ Chalkboard
 - ☐ Marker board
 - ☐ Good lightening
 - ☐ good ventilation
- 11) How many students(maximum) should be in one class?
- ☐ 15
 - ☐ 20
 - ☐ 30
 - ☐ 45
 - ☐ 50
 - ☐ More than 50

ANNEXURE F: GUIDELINES FOR CONCEPT DEVELOPMENT



Figure 3.2: Instructions for concept development by an expert group.

ANNEXURE G: CONCEPT ANALYSIS QUESTIONNAIRE

Confidential

Page 1 of 12

Concept Analysis: The Development of a Concept-based Advanced Practice Nursing (Child Health Nurse Practitioner) Curriculum Framework for Sub-Saharan Africa.

Dear expert,

I am glad to invite you to participate in the review of the concepts for a Child Health Nurse Practitioner curriculum.

The committee is made up of 8 experts. Three of the experts have developed the draft concepts for the Child Health Nurse Practitioner curriculum.

Your expert inputs and comments will be very much appreciated.

Please see attached the review questionnaire.

Sincerely,

CD Christmals.

The Concept Development ProcessA scoping review was conducted followed by a multinational multidisciplinary expert Delphi to validate the scoping review results and provide information on to other essential portions of a curriculum framework. The results of the Delphi and the scoping review were then used to select concepts for the Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa by an expert curriculum committee. Please see attached the overview of the programme for your perusal.

[Attachment: "THE OVERVIEW OF THE PROGRAMME AND RESEARCH FOR THE CONCEPT.pdf"]

The results of the Delphi and the scoping review were then used to select concepts for the Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa by an expert curriculum committee. The first set of the committee members developed the concepts for review by the second set. Please see attached the overview of the developed concepts for your perusal.

[Attachment: "DRAFT CONCEPTS FOR CURRICULUM COMMITTEE REVIEW.pdf"]

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TRANSFORMATIONAL LEADERSHIP

CHARACTERISTIC FEATURES: Execution, partnership, others, communication, self (to set personal example, Ideal impact, strong motivation, intellectual stimulation, and personal consideration.

- 1) Transformational leadership is the process in which a leader inspires the followers in developing higher order goals and motivating them to reach such goals through the refinement of the followers' worldview and attitudes (Bass 1995; Giddens 2017). Transformational leaders help in the establishment of direction or purpose and creating the right conditions for the followers to work towards fulfilling the organization's purpose (Bass 1995; Avolio and Bass 2007; Giddens 2017). ☐ Include
☐ Revise and include
☐ Exclude
- 2) Please comment on the section above (stating why a concept needs to be modified or excluded). _____

Please rank the five exemplars of the concept of transformational leadership in the list below. [1st being the most important and 5th the least important]

- | | 1st | 2nd | 3rd | 4th | 5th |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 3) Changing curriculum | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4) 1.5.2.Inter-level patient referral | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5) Scarce resource management | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6) NIMART | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7) Clinical nursing education | ☐ | ☐ | ☐ | ☐ | ☐ |
- 8) Please state any more exemplars that need to be included under the concept. _____
- 9) Please identify other concepts from the attached list of concepts that are inter-related with this one (transformation leadership). _____

GOVERNANCE

CHARACTERISTIC FEATURES: Accountable, transparent, responsive, rule of law, stable, equity, empowerment, inclusive, consensus orientation, effective and efficient.

- 10) Governance refers to the legally recognised structures and procedures that are created to guarantee "accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation" in an organization, institution or society (Page 2013; UNESCO 2017). ☐ Include
☐ Revise and include
☐ Exclude
- 11) Please comment on the section above (stating why a concept needs to be modified or excluded). _____

Please rank the five exemplars of the concept of governance in the list below. [1st being the most important and 5th the least important]

- | | 1st | 2nd | 3rd | 4th | 5th |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12) Managing absenteeism | ☐ | ☐ | ☐ | ☐ | ☐ |
| 13) Universal access | ☐ | ☐ | ☐ | ☐ | ☐ |
| 14) NIMART | ☐ | ☐ | ☐ | ☐ | ☐ |
| 15) Clinical audit | ☐ | ☐ | ☐ | ☐ | ☐ |
| 16) Financial audit | ☐ | ☐ | ☐ | ☐ | ☐ |
| 17) Please state any more exemplars that need to be included under the concept | <hr/> | | | | |
| 18) Please identify other concepts from the attached list of concepts that are inter-related with this one (governance). | <hr/> | | | | |

HEALTH SYSTEMS THINKING

CHARACTERISTICS Leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, health information systems, systems organization, systems network, systems dynamics, systems knowledge

- 19) Systems thinking is a quality improvement process in which the understanding of the relationships and interaction between the components of a system is engineered to generate synergy in the system
- ☐ Include
☐ Revise and include
☐ Exclude
- 20) Please comment on the section above (stating why a concept needs to be modified or excluded).
-

Please rank the five exemplars of the concept of governance in the list below. [1st being the most important and 5th the least important]

- | | 1st | 2nd | 3rd | 4th | 5th |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 21) Vaccination | ☐ | ☐ | ☐ | ☐ | ☐ |
| 22) Memorandum of understanding | ☐ | ☐ | ☐ | ☐ | ☐ |
| 23) Quality improvement project | ☐ | ☐ | ☐ | ☐ | ☐ |
| 24) Managing adverse events | ☐ | ☐ | ☐ | ☐ | ☐ |
| 25) Development of a Community Outreach | ☐ | ☐ | ☐ | ☐ | ☐ |
| 26) Please identify other concepts from the attached list of concepts that are inter-related with this one (health systems thinking). | <hr/> | | | | |

QUALITY OF CARE

CHARACTERISTIC FEATURESEffective, efficient , accessible, acceptable and equitable

- 27) The World Health Organization (2006) defined quality of care in six dimensions. These include: effectively delivering evidence-based healthcare that responds to the needs of the client (individual, family or community); delivering healthcare in an effective way to maximize the use of resources and prevent wastage; healthcare delivery that is accessible, timely, geographically reasonable and in settings where the human and other resource are appropriate for the needs of the clients; the delivery of patient-centred care, delivery of culturally acceptable that considers the health aspirations of the clients; delivering healthcare which is equitable and not discriminatory against gender, race, location or socioeconomic status; delivery of care that is safe, thus minimizing the risks to healthcare users.
- ☐ Include
☐ Revise and include
☐ Exclude
- 28) Please comment on the section above (stating why a concept needs to be modified or excluded). _____
-

Please rank the five exemplars of the concept of quality practice in the list below. [1st being the most important and 5th the least important]

- | | 1st | 2nd | 3rd | 4th | 5th |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 29) Managing medical malpractice | ☐ | ☐ | ☐ | ☐ | ☐ |
| 30) Universal coverage | ☐ | ☐ | ☐ | ☐ | ☐ |
| 31) NIMART | ☐ | ☐ | ☐ | ☐ | ☐ |
| 32) Clinical audit | ☐ | ☐ | ☐ | ☐ | ☐ |
| 33) Financial audit | ☐ | ☐ | ☐ | ☐ | ☐ |
- 34) Please state any more exemplars that can be added under the concept _____
- 35) Please identify other concepts from the attached list of concepts that are inter-related with this one (quality of care). _____
-

CLINICAL ASSESSMENT

CHARACTERISTIC FEATURESHistory taking, Physical assessment (Biopsychosocial, spiritual, emergency), laboratory examination, imaging studies

- 36) Clinical assessment is the process of gathering patient information through patient history taking, physical assessment, laboratory examination and imaging studies to guide the clinician's and patient decision making processes especially in the selection of treatment or referral for an appropriate treatment (Mcalpine 2002; Lata and Elliott 2007; Waghel et al. 2016; Fernandez et al. 2017).
- 37) Please comment on the section above (stating why a concept needs to be modified or excluded).

- ☐ Include
☐ Revise and include
☐ Exclude

Please rank the five exemplars of the concept of clinical assessment in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
38) Diarrhoeal diseases	☐	☐	☐	☐	☐
39) Pneumonia	☐	☐	☐	☐	☐
40) Malaria	☐	☐	☐	☐	☐
41) Critically ill child	☐	☐	☐	☐	☐
42) Neglected child	☐	☐	☐	☐	☐

- 43) Please state any more exemplars that can be added under the concept
- 44) Please identify other concepts from the attached list of concepts that are inter-related with this one (clinical assessment).

CLINICAL DECISION MAKING

CHARACTERISTIC FEATURES Pathophysiology, clinical judgement, diagnosis, current-evidence, clinical expertise and patient preferences and characteristics (uniqueness, criticalness, urgency, stability, risks), variables (certainty, similarity, congruence/conflict).

- 45) Clinical decision making:-Clinical decision making, synonymous to clinical diagnosis, is the process of deciding on the health status of the client in order to select the best treatment that responds to the client's condition with the primary purpose of improving the health of the client and community (Panagiotou 2013; Bordini et al. 2017; Nursing and Midwifery Board of Ireland 2017; Zalts et al. 2017).
- 46) Please comment on the section above (stating why a concept needs to be modified or excluded).

- ☐ Include
☐ Revise and include
☐ Exclude

Please rank the five exemplars of the concept of clinical decision making in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
47) Managing medical malpractice	☐	☐	☐	☐	☐
48) Critically ill child	☐	☐	☐	☐	☐
49) NIMART	☐	☐	☐	☐	☐
50) clinical audit	☐	☐	☐	☐	☐
51) Use of clinical guidelines	☐	☐	☐	☐	☐

52) Please state any more exemplars that can be added under the concept _____

53) Please identify other concepts from the attached list of concepts that are inter-related with this one (clinical decision making). _____

TREATMENT SELECTION

CHARACTERISTIC FEATURES Pharmacological, non-pharmacological (complementary and alternative medicine), pharmacovigilance, cost effectiveness

- 54) Treatment selection is the selection of appropriate and cost-effective treatment that responds to patients' needs for a requisite period of time (Greveson 2013; Management Sciences for Health 2017).
- ☐ Include
☐ Revise and include
☐ Exclude

55) Please comment on the section above (stating why a concept needs to be modified or excluded). _____

Please rank the five exemplars of the concept of treatment selection in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
56) Managing medical malpractice	☐	☐	☐	☐	☐
57) Diarrhoeal diseases	☐	☐	☐	☐	☐
58) Critically ill child	☐	☐	☐	☐	☐
59) Pneumonia	☐	☐	☐	☐	☐
60) Clinical pathways	☐	☐	☐	☐	☐

61) Please state any more exemplars that can be added under the concept _____

62) Please identify other concepts from the attached list of concepts that are inter-related with this one (treatment selection). _____

NURSING CASE MANAGEMENT

CHARACTERISTIC FEATURES Assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of services, Primary healthcare, Family centered care, referral system, Clinical progress, safe, timely, effective, efficient, cost-effective, equitable and patient-centered, payer, level of care, benefits.

- 63) Case management refers to the actions taking by the Advanced Practice Nurse in coordinating an ongoing comprehensive medical services (assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of healthcare) that responds to the needs of the patient, family or community (Zeng et al. 2016). It is defined by the Commission for Case Manager Certification (2017) as the process in which the practitioner collaborate with the patient and other healthcare professionals in the assessment, planning, implementation, monitoring, and evaluation of healthcare services.
- ☐ Include
☐ Revise and include
☐ Include
- 64) Please comment on the section above (stating why a concept needs to be modified or excluded). _____
-

Please rank the five exemplars of the concept of medical record management in the list below. [1st being the most important and 5th the least important]

- | | 1st | 2nd | 3rd | 4th | 5th |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 65) Managing medical malpractice | ☐ | ☐ | ☐ | ☐ | ☐ |
| 66) Use of clinical guidelines | ☐ | ☐ | ☐ | ☐ | ☐ |
| 67) Patient referral | ☐ | ☐ | ☐ | ☐ | ☐ |
| 68) Universal coverage | ☐ | ☐ | ☐ | ☐ | ☐ |
| 69) Clinical audit | ☐ | ☐ | ☐ | ☐ | ☐ |
- 70) Please state any more exemplars that can be added under the concept _____
- 71) Please identify other concepts from the attached list of concepts that are inter-related with this one (nursing case management). _____
-

CHILD MORTALITY

CHARACTERISTIC FEATURES Pneumonia, Diarrhoeal disease, malaria, HIV, severe malnutrition and contributing factors (country of birth, preterm birth, poverty, gender, neonate, rural settlement, urban slum settlement, small for age, child abuse)

- 72) Child mortality is the number of child deaths per 1000 live births in a specified geographical or political location.
- ☐ Include
☐ Revise and include
☐ Exclude
- 73) Please comment on the section above (stating why a concept needs to be modified or excluded). _____
-

Please rank the five exemplars of the concept of child mortality in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
74) Managing diarrhoeal diseases	☐	☐	☐	☐	☐
75) Managing Pneumonia	☐	☐	☐	☐	☐
76) Managing HIV/AIDS	☐	☐	☐	☐	☐
77) Managing critically ill children	☐	☐	☐	☐	☐
78) Neglected child	☐	☐	☐	☐	☐

Please state any more exemplars that can be added under the concept

- 79) Please identify other concepts from the attached list of concepts that are inter-related with this one (child mortality).

MEDICAL RECORD MANAGEMENT

CHARACTERISTIC FEATURES Principles (Evidence, legal, confidential, safety, critical information, retention period) Uses (continuity of care, quality improvement, research, medicolegal) Types (paper-based, electronic), Content (demographic, consent, admission, management, discharge, financial).

- 80) An accurate medical record contains adequate data describing the patient, the diagnosis, the reason why the patient attended the identified hospital, the treatment provided and the practitioner responsible for the services (World Health Organization 2006c). Medical record management refers to the organizational policies and regulations and procedures governing the collating, handling, storage and use of patient medical records (World Health Organization 2006c; Bali et al. 2011; Jefferson Lab 2017).

- ☐ Include
☐ Revise and Include
☐ Exclude

- 81) Please comment on the section above (stating why a concept needs to be modified or excluded).

Please rank the five exemplars of the concept of medical record management in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
82) Managing medical malpractice	☐	☐	☐	☐	☐
83) Patient referral	☐	☐	☐	☐	☐
84) Patient cardex	☐	☐	☐	☐	☐
85) Clinical audit	☐	☐	☐	☐	☐
86) Financial audit	☐	☐	☐	☐	☐

Please state any more exemplars that can be added under the concept

- 87) Please identify other concepts from the attached list of concepts that are inter-related with this one (medical record management).

TEACHING

CHARACTERISTIC FEATURES Health promotion, Health education, Clinical teaching, patient education, curriculum, andragogy, learning, assessment, knowledge brokering.

- 88) Teaching is the process in which students are assisted to acquire knowledge, skills and attitudes through their participation. Student-centred teaching is advocated over teacher-centred approaches as it stimulates changes in the student through an intentionally planned curriculum
- 89) Please comment on the section above (stating why a concept needs to be modified or excluded).

- ☐ Include
☐ Revise and include
☐ Exclude

Please rank the five exemplars of the concept of teaching in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
90) Curriculum change	☐	☐	☐	☐	☐
91) Patient education	☐	☐	☐	☐	☐
92) Clinical nursing education	☐	☐	☐	☐	☐
93) OBSCE	☐	☐	☐	☐	☐
94) Health promotion	☐	☐	☐	☐	☐

- 95) Please state any more exemplars that can be added under the concept
- 96) Please identify other concepts from the attached list of concepts that are inter-related with this one (teaching).

INFLUENCING CURRICULUM

CHARACTERISTIC FEATURES Advocacy, professional organization, needs analysis, programme development, programme evaluation, feedback.

- 97) Curriculum is an intentionally designed learning opportunity provided by an institution to students as an interactive event integrated with learning experiences throughout the programme of study (Hall 2014). According to Beigi, Keramati and Ahmadi (2011), it is the why, what, when, where, how and the who of teaching and learning. Professional influence of curriculum occurs at the review and evaluation or pilot testing stage of the curriculum development process where the practitioner's (stakeholder's) views are sorted on the effectiveness of the curriculum (Parsons and Beauchamp 2012). Influencing curriculum, therefore refers to advocating and positively determining the course of teaching and learning in nursing.
- 98) Please comment on the section above (stating why a concept needs to be modified or excluded).

- ☐ Include
☐ Revise and include
☐ Exclude

Please rank the five exemplars of the concept "influencing curriculum" in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
99) Changing curriculum	☐	☐	☐	☐	☐
100) Clinical nursing education	☐	☐	☐	☐	☐
101) OBSCE	☐	☐	☐	☐	☐
102) Child health advocacy	☐	☐	☐	☐	☐
103) Writing journal article	☐	☐	☐	☐	☐

- 104) Please state any more exemplars that can be added under the concept
- 105) Please identify other concepts from the attached list of concepts that are inter-related with this one (influencing curriculum).

NURSING RESEARCH

CHARACTERISTIC FEATURES Research proposal, data collection, data analysis, Interpretation, dissemination, principles (privacy, anonymity and confidentiality, ethical approval, institutional approval).

- 106) Research is the study or exploration of a defined phenomenon. It is defines as a " diligent and systematic enquiry to validate and refine an existing knowledge and generate new knowledge" (Grove et al. 2014).
- 107) Please comment on the section above (stating why a concept needs to be modified or excluded).

- ☐ Include
☐ Revise and include
☐ Exclude

Please rank the five exemplars of the concept "research project" in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
108) Qualitative research	☐	☐	☐	☐	☐
109) Quantitative research	☐	☐	☐	☐	☐
110) Literature review	☐	☐	☐	☐	☐
111) Research proposal	☐	☐	☐	☐	☐
112) Writing research report	☐	☐	☐	☐	☐

113) Please state any more exemplars that can be added under the concept

114) Please identify other concepts from the attached list of concepts that are inter-related with this one (nursing research).

RESEARCH DESSEMINATION

CHARACTERISTIC FEATURES Institutional factors (Dissemination strategy, organizational culture, incentives), Values and skills (academic integrity, plagiarism, academic writing), types (research report, journal papers, conferences presentation, research brief)

- 115) Research dissemination is well planned process in which research findings are exposed to a wider audience through written and verbal means for appropriate evaluation and inclusion into policy and healthcare practice to facilitate evidence-based practice (Wilson et al. 2010).
- ☐ Include
☐ Revise and Include
☐ Exclude

116) Please comment on the section above (stating why a concept needs to be modified or excluded).

Please rank the five exemplars of the concept "research dissemination" in the list below. [1st being the most important and 5th the least important]

	1st	2nd	3rd	4th	5th
117) Managing plagiarism	☐	☐	☐	☐	☐
118) Research protocol development	☐	☐	☐	☐	☐
119) Evidence-based poster development	☐	☐	☐	☐	☐
120) Writing research report	☐	☐	☐	☐	☐
121) Writing a journal articles	☐	☐	☐	☐	☐

122) Please state any more exemplars that can be added under the concept

123) Please identify other concepts from the attached list of concepts that are inter-related with this one (nursing research).

ANNEXURE H: THE CONFIRMATION QUESTIONNAIRE

Confidential

*Conformation of the Child Health Nurse Practitioner curriculum framework for sub-Saharan Africa
Page 1 of 1*

Confirmation of Results from Delphi Survey

Record ID _____

Please confirm if the curriculum framework represents the findings from the Delphi study that you were part of.

Please state any deviations from the Delphi result. _____

09-01-2018 09:24

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ANNEXURE I: CURRICULUM FRAMEWORK EVALUATION QUESTIONNAIRE

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EVALUATION OF THE CHILD HEALTH NURSE PRACTITIONER CURRICULUM FRAMEWORK

Page 1 of 1

EVALUATION OF THE CHILD HEALTH NURSE PRACTITIONER CURRICULUM FRAMEWORK FOR SSA

EVALUATION OF THE CHILD HEALTH NURSE PRACTITIONER CURRICULUM FRAMEWORK FOR SUB-SAHARAN AFRICA

Please rank the Child Health Nurse Practitioner curriculum framework for its applicability within your institution and country.

- ☐ Excellent
☐ Very Good
☐ Good
☐ Poor
☐ Bad
☐ Very bad

Please explain your choice above

Can this curriculum framework be adapted for other specialty areas in Advanced Practice Nursing?

- ☐ Yes
☐ No

Please explain your choice above

Please suggest any other way this framework can be made applicable to your institution and country.

CHILD HEALTH NURSE PRACTITIONER CURRICULUM FRAMEWORK FOR SUB-SAHARAN AFRICA

1.1 INTRODUCTION

Curriculum framework in this study refers to a document that guides any academic or research institution to develop a responsive Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum within Sub-Saharan Africa. Pennsylvania Department of Education (2017) defined curriculum framework to include “big ideas, concepts, competencies, and essential questions aligned to standards and assessment anchors and, where appropriate, eligible content”. A well-established principle of the use of a curriculum framework is to leave the formulation of the syllabi and lesson plans for the respective countries, if it is internationally based or for local authorities, if it is national. This allows for flexibility and innovation at the lower level of the curriculum implementation (Parsons and Beauchamp 2012).

The Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework for sub-Saharan Africa consists of: current context, educational policy statement, statement of broad learning objectives, structure of the Child Health Nurse Practitioner programme, concepts for the Child Health Nurse Practitioner curriculum, resources required for the implementation of the Child Health Nurse practitioner programme, and teaching and assessment methods.

1.2 CURRENT CONTEXT

This refers to the socioeconomic setting within which the Advanced Practice Nursing (Child Health Nurse Practitioner) policy is made and the programme implemented (Stabback 2007).

Sub-Saharan Africa is culturally diverse. The population of the region is 1,033,106,135 in 2017 with a population growth rate of 2.74% per annum. About 43.04% of sub-Saharan African population are between the ages of 0-14 years whereas 51.1% are children less than the age of 19. The majority (62.24%) are rural dwellers while 37.76% (including urban slum dwellers) are in urban settlements. The under-five mortality rate is currently estimated at 81.35 per 1000 live births and the rate of child (age 5-14years) deaths per 1000 children living at age 5 is 19.00 in the year 2016. Neonatal mortality rate is 28.32 per 1000 live births. The life expectancy from birth was estimated at 59.90 in the year 2015.

The population of sub-Saharan Africa is very poor, for instance, about 70% of sub-Saharan African population are living on less than \$2.00 (R 26.40) per day whereas about 48% live on \$1.25 (R16.27)

SAHARAN AFRICA

Educational policy is influenced by local health needs and international policy. The SDG 3 demands that preventable deaths to new-born babies and children under the age of 5 years should be ended (World Health Organization 2016). Countries all over the world are expected to end preventable deaths with at most 12 neonatal deaths and 25 under-5 deaths per 1000 live births. Sustainable Development Goal 3 also believes that there must be a universal coverage of quality healthcare, medicine and vaccines, and vital health services at a cost they can afford (World Health Organization 2016). The UN also expects all countries to continually increase the amount of money they input into healthcare, increase healthcare workers training and development, and promote recruitment and retention of healthcare in developing countries (World Health Organization 2016).

- The Child Health Nurse Practitioner programme will provide adequate numbers (to be determined by institutions and governments) of quality trained practitioners who are willing to provide patient-centered evidence-based healthcare for the rural population of sub-Saharan Africa.
- The APN (Child Health Nurse Practitioner) will assist countries in sub-Saharan Africa to meet the sustainable development goal 3 which seeks to “*end preventable deaths of new-borns and children under 5 years of age,... reduce under-5 mortality to at least as low as 25 per 1,000 live births*” and “*Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all by 2030*”.
- The Child Health Nurse Practitioner programme will respond to the healthcare challenges of the Sub-Saharan Africa: thus, reducing the communicable disease burden, and engaging in early detection and prevention of childhood illnesses to reduce the rate of admission to the acute care units.
- The expert team also believes that there must be at least one child health nurse practitioner at every district hospital and primary health care clinic who is competent in the integrated management of childhood diseases (IMCI) and resuscitation of babies.
- The practitioner is expected to be knowledgeable in management and administration as he/she will lead primary health care teams.

1.4 BROAD LEARNING OBJECTIVES AND OUTCOMES

This stipulates what the Advanced Practice Nurse (Child Health Nurse Practitioner) should know and be able to do when he or she completes the programme (Stabback 2007). The outcomes are expressed in a range of domains, including knowledge, understanding, skills and competencies, values and attitudes.

The Child Health Nurse practitioner should be knowledgeable and have competent skills and attitudes in the following knowledge domains:

1.4.1 Domain A: Nursing Leadership, Management and Administration

The key responsibilities of the APN in their setting is healthcare governance, leadership, management, advocacy and resource management (South African Nursing Council 2005; Duma *et al.* 2012; East *et al.* 2014; Sastre-Fullana *et al.* 2014; Academy of Nursing of South Africa 2015).

1.4.2 Domain B: Quality Practice

This domain covers issues of quality in healthcare delivery and continuous professional development. The Advanced Practice Nurse should be able to identify child healthcare indicators, conduct quality audits and implement quality improvement practices in order to improve access, safety and effectiveness of PHC for children in the community they serve (South African Nursing Council 2005; Reid *et al.* 2016).

1.4.3 Domain C: Ethico-legal Practice and Professionalism

This domain covers the ethos of professional practice. It refers to all the legal aspects of the Advanced Practice Nurse's practice. It is comprised of the boundaries, rules and regulations, and scope of practice and standards within which the Advanced Practice Nurse must operate.

The APN training must make him or her capable of utilizing ethical theories and principles in paediatric services, adhere to and enforce staff adherence to all relevant ethical codes of conduct set by the nursing profession and regulatory body (Madubuko n.d.; INEPEA 2008a; Duma *et al.* 2012; Lake 2014). She or he must contribute to the resolution of ethical issues in practice.

1.4.4 Domain D: Education and Research

The CHNP should engage in teaching, mentoring, supervision and coaching, giving feedback into educational curriculum, provide school and community health education and screening (Madubuko n.d.; South African Nursing Council 2005; INEPEA 2008b). He or she must be able to teach and mentor nursing students in clinical practice (Sastre-Fullana *et al.* 2014)

1.4.5 Domain E: Advanced Child Health Nursing Practice

The Advanced Child health Nurse practitioner (CHNP) is expected to conduct assessment (history taking, physical examination, request and interpret laboratory and imaging studies), diagnose children, prescribe treatment (pharmacological and non-pharmacological), admit, discharge or refer patients and manage cases comprehensively in their practice settings.

1.4.6 Domain F: Attitudes and Values

The CHNP should engage the community with patient centred care principles. He or she must respect and value the child and family. The CHNP must understand that the final decision on care lies with the child and family and respect their decisions after counselling. The CHNP must be culturally competent and should mostly be able to speak the language of the community served to facilitate communication, confidentiality and trust.

1.5 STRUCTURE OF THE EDUCATIONAL SYSTEM

This stipulates the general educational system within which the Advanced Practice Nursing programme will be implemented as outlined in table 1 below. This section of the curriculum framework specifies the duration of the programme, number of school weeks in an academic year, notional hours and associated credits for the Advanced Practice Nursing (Child health Nurse practitioner) programme.

Table 1: Structure of the educational system

Variable	Description
Level	Master's level (SAQA exit level 9)
Ontological Orientation	Andragogy and experiential learning approaches
Epistemological orientation	Concept-based curriculum/learning
Total Credit	360 credits
Number of years	2-years full-time
Number of weeks	40 weeks a year
Number of Hours per week	40 hours a week
Total Clinical Hours	800-1000 hours
Internship	One-year post graduation internship

1.6 STRUCTURE OF THE CURRICULUM CONTENT

This section presents the concepts for the Child Health Nurse Practitioner Programme. The concepts are presented with definition, scope, characteristic features, attributes, exemplars and interrelated concepts (Table 2). These concepts are organised into modules with assigned credits as presented in figure 1 below.

To produce a competent Advanced Practice Nurses who will produce evidence-based, culturally sensitive and cost-effective quality child health care to the underserved populations in sub-Saharan Africa.

MODULES	HEALTH SYSTEM	GENERIC APN CONCEPTS	CHNP SPECIALTY CONCEPTS	NURSING EDUCATION	NURSING RESEARCH
	Transformational leadership, Governance, Systems thinking	Quality of care, Clinical assessment, Clinical decision making, Treatment selection, Medical record management	Nursing case management, Child mortality	Teaching, influencing curriculum	Nursing research, Research dissemination
	The APN will be able to comprehend national and international health systems and their influence on child health nursing and be able to lead and transform the health system at the local level in order to facilitate the provision of evidence-based, culturally sensitive and cost-effective quality child health care to the underserved populations in sub-Saharan Africa	The CHNP will be able to acquire competent knowledge, skills and attitudes need to provide evidence-based, culturally sensitive and cost-effective quality child health care provided for the underserved populations in sub-Saharan Africa (assess, diagnose, manage and record)	The CHNP will be able to plan, execute and evaluate evidence-based, culturally sensitive and cost-effective quality child health care to the underserved populations in sub-Saharan Africa with the aim of reducing child mortality and improving other healthcare indices	The CHNP will be able to impart evidence-based, culturally sensitive health information to the child, family and community in order to promote, restore or maintain their health status and to inculcate the knowledge, attitudes and behaviours necessary to provide evidence-based, culturally sensitive cost-effective quality child health care to the underserved populations in sub-Saharan Africa into nursing students through clinical teaching.	The CHNP will be able to propose, conduct research and synthesize research findings in order to provide evidence-based, culturally sensitive and cost-effective quality child health care to the underserved populations in sub-Saharan Africa

Figure 1: Structure of the curriculum content

Table 2: Modules, Concepts, exemplars and interrelated concepts

MODULE (% OF TOTAL CREDITS)	CONCEPTS	CHARACTERISTIC FEATURES	DEFINITION	EXEMPLARS	INTERRELATED CONCEPTS
HEALTH SYSTEM (10%)	Transformational leadership	Execution, partnership, others, communication, self (to set personal example, Ideal impact, strong motivation, intellectual stimulation, and personal consideration.	Transformational leadership is the process in which a leader inspires the followers in developing higher order goals and motivating them to reach such goals through the refinement of the followers' worldview and attitudes.	Scarce resources management; inter-level patient referral; changing curriculum	Nursing case management; systems thinking; governance
	Governance	Accountable, transparent, responsive, rule of law, stable, equity, empowerment, inclusive, consensus orientation, effective and efficient.	Governance refers to the legally recognised structures and procedures that are created to guarantee "accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation" in an organization, institution or society.	Financial audit; Clinical audit; universal coverage;	Systems thinking; transformational leadership
	Systems thinking	Leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, health information systems, systems organization, systems network, systems dynamics, systems knowledge	Systems thinking is a quality improvement process in which the understanding of the relationships and interaction between the components of a system is engineered to generate synergy in the system	Quality improvement project; memorandum of understanding; development of community outreach	Influencing curriculum; clinical assessment; quality of care

GENERIC ADVANCED PRACTICE NURSING CONCEPTS (20%)	Quality of care	Effective, efficient, accessible, acceptable and equitable	Quality is defined as conforming to specified standards of a product or service, i.e. meeting or exceeding the expectations of the population served	Clinical audit; NIMART; universal coverage	Research dissemination; teaching; influencing curriculum
	Clinical assessment	History taking, physical assessment (biopsychosocial, spiritual, emergency) laboratory examination, imaging studies	Clinical assessment is the process of gathering patient information through patient history taking, physical assessment, laboratory examination and imaging studies to guide the clinician's and patient decision making processes especially in the selection of treatment or referral for an appropriate treatment	Assessment critically ill children; assessing for diarrhoeal diseases; assessing for child abuse	Teaching; quality of care; clinical decision making
	Clinical decision making	Pathophysiology, clinical judgement, diagnosis, current-evidence, clinical expertise and patient preferences and characteristics (uniqueness, criticalness, urgency, stability, risks), variables (certainty, similarity, congruence/conflict).	Clinical decision making, synonymous with clinical diagnosis, is the process of deciding on the health status of the client in order to select the best treatment that responds to the client's condition with the primary purpose of improving the health of the client and community	Critically ill child; use of clinical guidelines; clinical audit	Quality of care; teaching
	Treatment selection	Pharmacological, non-pharmacological (complementary and alternative medicine), pharmacovigilance, cost effectiveness	Treatment selection is the selection of appropriate and cost-effective treatment that responds to patients' needs for a requisite period of time	Critically ill child; clinical pathways; diarrhoeal diseases	Quality of care; clinical assessment; clinical decision making; nursing case management

	Nursing case management	Assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of services, primary healthcare, family centred care, referral system, clinical progress, safe, timely, effective, efficient, cost-effective, equitable and patient-centered, payer, level of care, benefits.	Case management refers to the actions taking by the Advanced Practice Nurse in coordinating an ongoing comprehensive medical services (assessment, clinical decision making, treatment selection, referral services, follow-up care and costing of healthcare) that responds to the needs of the patient, family or community	Inter-level patient referral; use of clinical guidelines; clinical audit	Quality of care; clinical assessment; clinical decision making; treatment selection
CHILD HEALTH NURSE PRACTITIONER SPECIALTY CONCEPTS (30%)	Child mortality	Pneumonia, diarrhoeal disease, malaria, HIV, severe malnutrition and contributing factors (country of birth, preterm birth, poverty, gender, neonate, rural settlement, urban slum settlement, small for age, child abuse)	Child morbidity is the percentage of children who contracted a disease, fell ill or were injured within a specific period of time in a defined population. Child mortality is the number of child deaths per 1000 live births in a specified geographical or political location	Managing adverse events; managing critically ill children; managing pneumonia	Quality of care; clinical assessment; clinical decision making
	Medical record management	Principles (evidence, legal, confidential, safety, critical information, retention period) uses (continuity of care, quality improvement, research, medicolegal) types (paper-based, electronic), content (demographic, consent, admission, management, discharge, financial).	Medical record management refers to the organizational policies and regulations and procedures governing the collating, handling, storage and use of patient medical records	Patient kardex; inter-level patient referral; clinical audit;	Nursing research; quality of care
	Teaching	Health promotion, health education, clinical teaching, patient education, curriculum, andragogy, learning, assessment, knowledge brokering.	Teaching is therefore the process by which the teacher (lecturer, facilitator etc.) guides the student to acquire certain knowledge, skills and attitudes that are intentionally planned through an institutional curriculum	Patient education; clinical nursing education; health promotion	Influencing curriculum; quality of care; transformational leadership

NURSING EDUCATION (10%)	Influencing curriculum	Advocacy, professional organization, needs analysis, programme development, programme evaluation, feedback.	Influencing curriculum, therefore refers to advocating and positively determining the course of teaching and learning in nursing.	Clinical nursing education; curriculum change; child health advocacy.	Nursing research; teaching; transformational leadership
NURSING RESEARCH (30%)	Nursing Research	Research proposal, data collection, data analysis, Interpretation, dissemination, principles (privacy, anonymity and confidentiality, ethical approval, institutional approval).	It is defined as a “ diligent and systematic enquiry to validate and refine an existing knowledge and generate new knowledge”	Research proposal; literature review; writing research report	Teaching; influencing curriculum; research dissemination
	Research dissemination	Institutional factors (dissemination strategy, organizational culture, incentives), values and skills (academic integrity, plagiarism, academic writing), types (research report, journal papers, conferences presentation, research brief)	Dissemination is well planned process in which research findings are exposed to a wider audience through written and verbal means for appropriate evaluation and inclusion into policy and healthcare practice to facilitate evidence-based practice	Evidence-base poster development; writing journal article; writing research report;	Nursing research; transformational leadership; influencing curriculum

1.7 STANDARDS OF RESOURCES REQUIRED FOR IMPLEMENTATION

Standard resources describe the level of lecturer qualifications, the workload per lecturer, student qualifications and number per class, materials (textbooks, computers and other equipment) and facilities (classrooms, furniture, fittings).

1.7.1 Lecturer qualifications

Nursing lecturers	PhD in nursing is recommended. Consideration is given to a Master of nursing (coursework + research components). Should have a teaching qualification.
Non-nursing lecturer	PhD in specialist field is recommended. Consideration is given to a Master of Medicine and equivalent qualification if there are no PhD holders. Should have a teaching qualification.

1.7.2 Student resources

Requirement for admission	4-years degree in nursing with a minimum of 60% cumulative average mark.
Prerequisite clinical practice	2-years minimum clinical practice after community/ national/youth service or internship.
Prerequisite undergraduate skills	Mathematics, Computing skills, and English Language skills
Prerequisite undergraduate courses	Paediatric Nursing, Anatomy, Physiology, Psychology, Sociology, Pharmacology, Microbiology, Community Health Nursing, Family Health Nursing, Communicative Skills, Research Methods and Fundamentals of Nursing
Student personal materials	Laptop computer, Prescribed textbooks, and Diagnostic set

1.7.3 Library resources

Textbooks, computers, internet services, online learning platform (e.g. Sakai), subscription to research database, and online books.

1.7.4 Classroom resources needed

LCD projector, comfortable table and chairs for students, air conditioning /heater/fan per class, chalkboard, white/marker board, good lighting, and good ventilation.

1.7.5 Teacher student ratio

A lecturer student ratio ranges of 1: 7 to 1:14.

1.8 TEACHING METHODS

Describes the range of teaching approaches that might be employed in the implementation of the framework. Experiential learning, problem-based learning which is adult education oriented is to be implemented to inculcate the level of critical thinking, problem solving and ability to apply concepts to general situations to the Child health Nurse Practitioner lecture, small group sessions, self-study and blended learning methods were also proposed by the expert team.

1.9 ASSESSMENT AND REPORTING METHODS.

This describes the modes of assessment, the pass marks and how the student achievements are awarded or certified. Assessment should seek to elicit the Child Health Nurse Practitioners' critical thinking, problem solving and ability to apply concepts to general situations in the health care setting and community served. OBSCE, written tests and examinations, viva voce and take home assessments were proposed by the expert team.

1.10 OTHER ELEMENTS

Other elements of this curriculum framework in addition to the 8 elements of a curriculum framework outlined by Stabback (2007) include: clinical practice, internship, licensure and continuous professional development (CPD), and adoption and adaptation instructions.

1.10.1 Clinical Training

This describes the mode of clinical training (clinical practice for learning and role taking) by the student enrolled in the Child Health Nurse Practitioner Programme.

Simulation laboratory, clinical placement facilities, anatomical models, clinical mentors, simulators, clinical supervisors, resuscitation equipment, diagnostic sets, personal protective equipment's, and a qualified skills laboratory technician are materials and resources needed for

a successful clinical training. Between 800-1000 hours of clinical placement for learning and role taking is prescribed for the 2-years training programme.

1.10.2 Internship

A one-year internship under the supervision of a paediatrician, if available, is recommended.

1.10.3 Licensure and CPD

Licensing of the Advanced Practice nurse should be done on the discretion of the nursing council under which they are registered.

1.10.4 Adoption and Adaptation of the Child Health Nurse Practitioner Curriculum Framework

The framework should be adopted and adapted to suit each country in Sub-Saharan Africa. Changes to this curriculum framework could affect the context, aim, knowledge domains, resources and concepts. Due to the expectations of the Advanced Practice Nurses and the aim of having the Advanced Practice Nursing programme locally relevant and internationally competitive, changes to the level of training, number of years of training are not advised.

1.11 REFERENCES

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ANNEXURE K: APPROVAL OF AMENDED TITLE OF THE STUDY



Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

05 January 2018
Person No: 869108
PAG

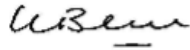
Mr CD Christmals
C/o E 23 West Campus Village, 1 Jan Smuts Avenue
Wits University Braamfontein East Campus
Braamfontein
2000
South Africa

Dear Mr Christmals

Doctor of Philosophy: Approval of Title

We have pleasure in advising that your proposal entitled *Development of an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework for Sub-Saharan Africa: A multimethod study* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'S. Benn'.

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

ANNEXURE L: CHANGE OF STUDY TITLE



Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

Mr CD Christmals
C/o E 23 West Campus Village, 1 Jan Smuts Avenue
Wits University Braamfontein East Campus
Braamfontein
2000
South Africa

05 January 2018
Person No: 869108
TAA

Dear Mr Christmals

Doctor of Philosophy: Change of title of research

I am pleased to inform you that the following change in the title of your Thesis for the degree of **Doctor of Philosophy** has been approved:

From: **Developing an advanced practice nursing (child health curriculum for Sub-Saharan Africa: a mixed method study**
To: **Development of an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum framework for Sub-Saharan Africa: A multimethod study**

Yours sincerely

A handwritten signature in black ink, appearing to read 'S. Benn'.

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

ANNEXURE M: APPROVAL OF FIRST TITLE



Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

Mr CD Christmals
C/o E 23 West Campus Village, 1 Jan Smuts Avenue
Wits University Braamfontein East Campus
Braamfontein
2000
South Africa

06 January 2017
Person No: 869108
PAG

Dear Mr Christmals

Doctor of Philosophy: Approval of Title

We have pleasure in advising that your proposal entitled *Developing an advanced practice nursing (child health curriculum for Sub-Saharan Africa: a mixed method study* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'S. Benn'.

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

ANNEXURE N: ETHICS CLEARANCE CERTIFICATE



R14/49 Mr Christmal Dela Christmals

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M160632

NAME: Mr Christmal Dela Christmals
(Principal Investigator)
DEPARTMENT: Nursing Education
Cape Town - SA, Nairobi-Kenya and Ghana - Ghana Universities

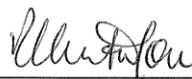
PROJECT TITLE: Developing An Advanced Practice Nursing (Child Health)
Curriculum for Sub-Saharan Africa: A Mixed Method Study
(Name change previously "Mr Christmal Jonah Kpodo" 27/07/2016)

DATE CONSIDERED: 24/06/2016

DECISION: Approved unconditionally

CONDITIONS: South African Human Research Ethics Committees (HRECs) have no standing outside South Africa. Ethics approval is also required from local HRECs in the country in which research will be done.

SUPERVISOR: Dr Sue Armstrong

APPROVED BY: 
Professor P Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 20/07/2016

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary in Room 10004, 10th floor, Senate House/2nd Floor, Phillip Tobias Building, Parktown, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.** The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in June and will therefore be due in the month of June each year.

Principal Investigator Signature _____

Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

ANNEXURE O: ETHICAL APPROVAL OF AMMENDED PROTOCOL

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG



HUMAN RESEARCH ETHICS COMMITTEE
(MEDICAL)

21 February 2017

Mr Christmal Dela Christmals
Department of Nursing Education

Sent by email to: 869108@students.wits.ac.za

Dear Mr Christmals

Re: Protocol Ref No: M160632

Protocol Title: Developing an Advanced Practice Nursing (Child Health) Curriculum for Sub-Saharan Africa: A Mixed Method Study

Principal Investigator: Mr Christmal Dela Christmals

Protocol Amendment: Request to change the methodology for the second and third phase

This letter serves to confirm that the Chairman of the Human Research Ethics Committee (Medical) has approved the amendment for the abovementioned protocol, as detailed in your letter (not dated).

The following documents were received:

- Summary Letter.
- Letter to Assistant Dean – Research and Postgraduate Affairs.
- Revised Protocol.

Thank you for keeping us informed and updated.

Yours Sincerely,

Mr Rhulani Mkansi
Administrative Officer
Human Research Ethics Committee (Medical)



Research Office Secretariat: Faculty of Health Sciences, Phillip Tobias Building, 3rd Floor, Office 304, Corner York Road and 29 Princess of Wales Terrace, Parktown, 2193 Private Bag 3, Wits 2050 | T+27 (0)11-717-1234/2656/2700/1252 E: Rhulani.Mkansi@wits.ac.za | Office E: HREC-Medical.ResearchOffice@wits.ac.za | Website: www.wits.ac.za/research/about-our-research/ethics-and-research-integrity/

ANNEXURE P: INFORMATION LETTER FOR CONSENT

INVITATION TO PARTICIPATE IN DELPHI

C/O Department of Nursing Education
School of Therapeutic Sciences
Faculty of Health Sciences
University of Witwatersrand
7 York Road, Parktown 2050
Johannesburg South Africa

Dear Colleague,

INVITATION TO PARTICIPATE IN DELPHI: DEVELOPMENT OF AN ADVANCED PRACTICE NURSING (CHILD HEALTH NURSE PRACTITIONER) CURRICULUM FRAMEWORK FOR SUB-SAHARAN AFRICA: A MULTI- METHOD STUDY

I am a Ph.D. student at the University of the Witwatersrand, and currently engaged in a study entitled “Development of an Advanced Practice Nursing (Child Health Nurse Practitioner) Curriculum Framework for Sub-Saharan Africa: A Multi Method Study” under the supervision of Dr. Susan J. Armstrong (University of the Witwatersrand Department of Nursing Education). The purpose of this study is to develop a curriculum development framework to guide the development of an Advanced Practice Nursing (Child Health Nurse Practitioner) curriculum that will meet the healthcare needs of Sub-Saharan Africa.

A scoping review has been conducted to develop the first phase questionnaire of the Delphi. Subsequent questionnaire will be derived from the results of the first phase of the Delphi to which you are being invited to participate. The questionnaire should take approximately 20-25 minutes to complete. There is space provided at the end of each section for any additional comments/suggestions. It is expected that the documents will reach you by the beginning of February 2017. It is anticipated that the Delphi will progress through a minimum of two phases. If the expert group have not reached consensus on the 2nd phase, a third phase and subsequent phases will be included. You are kindly requested to complete the questionnaire within ten (10) working days so as to enable the study to progress according to schedule.

Depending on the results of each round's questionnaire, an adapted questionnaire will be compiled for subsequent round of the Delphi technique. The results of a previous phase of the Delphi will be communicated to you along with the questionnaire for the subsequent phase.

As a nurse educator and practitioner with a worth of experience on the Sub-Saharan African healthcare context, your participation in this study will help in shaping the nursing education and practice within the sub-region. I will like to assure you that your participation in this study is confidential. Only the researcher will receive the questionnaires and will give codes to them thus removing any form of identification. You may at anytime withdraw your consent to participate in the study without any penalty.

I will be appreciated if you could complete the attached consent form and e-mail it back to me (869108@students.wits.ac.za) to confirm your participation in the study.

Thank you in advance for you valuable input and participation.

Yours sincerely

Christmal Dela Christmals

.....

PhD Student

ANNEXURE Q: CONSENT FORM

I hereby confirm that I have been informed of the study by ____
including the nature, conduct, benefits and risks of her study entitled ____
_____. I have also received, read and
understood the above-written invitation letter and informed consent regarding the study.

In view of the requirements of research, I agree to participate the Delphi and the data
collected during this study can be processed in a computerized system or quoted directly in an
anonymous manner.

I may, at any stage, without prejudice, withdraw my consent and participation in the study.

Printed Name, Signature, Date and Time

I (**PhD Candidate**), _____, herewith
confirm that the above mention person has been fully informed about the nature, conduct and
risks of the above study.

ANNEXURE R: KEY STATEMENTS SUPPORTING THEMES AND SUBTHEMES IN THE SCOPING REVIEW.

Population

1. Africa has experienced a marked increase in its population in last few decades.
2. Its current population is five times its size in 1950. And the continent's rapid population expansion is set to continue, with its inhabitants doubling from 1.2 billion to 2.4 billion between 2015 and 2050, and eventually reaching 4.2 billion by 2100 (Liu et al., 2016).
3. The future of humanity is increasingly African. More than half the projected 2.2 billion rise in the world population in 2015-2050 is expected to take place in Africa, even though the continent's population growth rate will slow. On current trends, within 35 years, *1 in every 4 people will be African, rising to 4 in 10 people by the end of the century*. Back in 1950, only 9 among 100 of the world's number of inhabitants were African (Liu et al., 2016)..
4. Approximately half of the total population is made up of children and infant (Children's Trust Hospital 2014).
5. Countries in Sub-Saharan Africa have both higher fertility *and* higher under-five mortality than elsewhere in the world (World Bank Group, 2015).
6. The importance of lower child mortality in fertility decline suggests that African countries with high child mortality rates should focus first on improving child health and then on reducing fertility.
7. The responsiveness of fertility to a decline in mortality also means that health interventions that save children's lives cause an increase in population; however, this period of population growth is temporary and counterbalanced by falling fertility in the long run. (World Bank Group, 2015).
In our sample of sub-Saharan African countries from the 1980s to the 2000s, within-country differences in under-5 mortality accounted for 74–78% of overall variation in under-5 mortality across space and over time (Burke, Heft-neal and Bendavid, 2016)
8. Lagos, Africa's second biggest urban agglomeration, will see its population swell by 1.8 times over the next 15 years from 13 million in 2015 to 24 million in 2030, while the populace of Al-Qahirah (Liu et al., 2016).
9. Within 50 years, that proportion almost doubled, and it is set to double again by the middle of the 21st century, leaving Africa with nearly a billion children younger than 18 years by 2050—37% of the worldwide total (O'Malley et al., 2014).
10. In 2050, around *41 per cent of the world's births, 40 per cent of all under-fives, 37 per cent of all children under 18 and 35 per cent of all adolescents will be African* — higher than previously projected. In 1950, only about 10 per cent of the world's births, under-fives, under-18s and adolescents were African (UNICEF, 2014).

Socioeconomic Factors

1. About 60 per cent of the African population — and 70 per cent of sub-Saharan Africa -- survives on less than US\$2 per day. In the two sub regions of Eastern Africa and West Africa, about three quarters of the population lives on less than US\$2 per day (Liu et al., 2016).
2. Extreme poverty is also rife on the continent; around 40 per cent of Africa's population, and almost half (48 per cent) of sub-Saharan Africa live on less US\$1.25 per day (Liu et al., 2016).
3. The optimal health of children is impossible under the socioeconomic, political, and natural environment in Africa (Wittenberg, 2013).
4. The narrowing gap between urban and rural areas may be attributed to the deplorable living conditions in urban slums. To reduce childhood mortality, extra emphasis is needed on the urban slums (Bandyopadhyay, S., Kanji, S. and Wang, L., 2012).
5. The results show that shortage of rainfall in the dry season increases the prevalence of diarrhoea across Sub-Saharan Africa (Bandyopadhyay, Kanji and Wang, 2012).
6. Such shortages occur in many regions when rainfall is average and low relative to the long-term average for that month (Bandyopadhyay, Kanji and Wang, 2012).
7. The results also show that an increase in monthly average maximum temperature raises the prevalence of diarrhoea while an increase in monthly minimum temperature reduces diarrheal illness (Bandyopadhyay, Kanji and Wang, 2012).

8. Children living in rural areas were more likely to fail timely vaccination with BCG than urban children (Schoeps et al., 2014)
9. Mother's education positively influenced timely adherence to the vaccination schedule (Schoeps et al., 2014)
10. The image of Africa as a rural continent is fast changing amid rapid urban growth. Currently, 40 per cent of Africa's population lives in cities. The past few decades have seen a frenetic pace of urbanization, considering that in 1950 just 14 per cent, and in 1980 just 27 per cent of the continental population was classified as living in urban areas (Liu et al., 2016).
- 11.
12. There was no effect to household size or the age of the mother. Conclusions: Additional health facilities and encouragement of women to give birth in these facilities could improve timely vaccination with BCG (Schoeps et al., 2014).
13. Rural children had an advantage over the urban children in timely vaccination, which is probably attributable to outreach vaccination teams among other factors (Schoeps et al., 2014).
14. As urban children rely on their mothers' own initiative to get vaccinated, urban mothers should be encouraged more strongly to get their children vaccinated in time (Schoeps et al., 2014)
15. Place of birth, use of health facilities during child sickness, immunization are all affected by war and non-war migratins. (Avogo, 2010),
16. The employment level is such that most of the caregivers depend on the child support grant given to the children(Vaaltein and Schiller, 2017),
17. Participants reported experiencing challenges with lack of support from the children's fathers who are either unable to support children because they have passed away or they neglect their responsibilities for their children. This then leaves the participants to care for the children on their own (Vaaltein and Schiller, 2017).
18. We find that children from regions more affected by the conflict suffered significant health setbacks compared with children from less affected regions (Minoiu and Shemyakina, 2014),
19. Our results suggest that conflict-related household victimization, and in particular economic losses, is an important channel through which armed conflict negatively impacts child health. (Minoiu and Shemyakina, 2014),
20. Africa is huge with diverse sociocultural activities (Khalil, 2006).
21. The themes that emerged indicated that corporal punishment is an everyday experience, that it has negative emotional and behavioural consequences, and that it plays a role in how children resolve interpersonal conflicts(Breen, Daniels and Tomlinson, 2015).
22. Gaps weaken efforts to develop viable interventions to address this form of violence against children given that discrepancies exist between adult and child reports of corporal punishment (Breen, Daniels and Tomlinson, 2015).
23. eliciting children's experiences helps provide a more complete picture of what is happening in their everyday lives (Breen, Daniels and Tomlinson, 2015).
24. Regions of Africa present important macro-contexts for understanding children's various types of violence exposure amidst war and economic disadvantage (Mokomane et al., 2017).
25. School climate and family support mitigate (Mokomane et al., 2017).
26. The effects of war violence are mediated by perceived discrimination in communities post-conflict (Mokomane et al., 2017).
27. This is particularly the case in the current context of high levels of poverty and unemployment among young people in the country (Mokomane et al., 2017).
28. To the extent that there is currently no youth-specific social protection or social security programmes (except for those who are disabled) many young people are struggling or failing to make successful transitions from school into employment and other income-generating activities (Mokomane et al., 2017).
29. Mothers' education, socio-economic status, season of birth, and area of residence were significantly associated with failure of timely adherence to the complete vaccination schedule. Year of birth, ethnicity, and the number of siblings was significantly related to timely vaccination with Penta3 but not with BCG or measles vaccination (Schoeps et al., 2014).
30. Newborn screening for SCD, developing partnerships between high resource countries and countries in Africa to support training of healthcare workers, research, and sharing of knowledge can help to reduce the SCD burden in Africa. (Mulumba and Wilson, 2015).

Hospitalisation

1. 77% of children hospitalised are under five years of age (Hageman 2012).
2. Primary school education, older age, rural residence and multiple pregnancies were also associated with child mortality (Nutor, 2012).
11. Many of the children are abuses through avoidance of education, female genital mutilation, arranged marriages, neglect, child prostitution, and child labour. (Khalil, 2006)
12. This means many of them remain vulnerable to adopting risky behaviours that can have negative health outcomes for them and/or erode the investments that the government continues to make through accessible health facilities for young people(Mokomane et al., 2017).
3. Unintentional injuries kill about 6500 children yearly in South Africa. (van As, 2010)
4. Head injury was the most common cause of death(Gallaher et al., 2016).
5. Possession of a refrigerator may play a role in child mortality, particularly in urban areas (Nutor, 2012).
6. We found higher burdens of acute and chronic morbidity for children whose parents have an AIDS related illness Community homebased care programs are best situated to identify children in these difficult circumstances and to mitigate their disadvantage(Kidman et al., 2010).
7. Our study suggests a particularly high burden of illness among children whose parents have AIDS (Kidman et al., 2010).
8. The findings illustrate that most of these children were not experiencing any chronic illnesses (Vaaltein and Schiller, 2017).
9. When children experience common illnesses, caregivers indicated a preference to access health care services from private facilities rather than from public facilities(Vaaltein and Schiller, 2017).

Advanced Practice Nursing

1. Key outputs of the healthcare sector include: strengthening healthcare system effectiveness, decreasing maternal and child mortality, increasing life expectancy and combating the HIV/AIN and decreasing the burden of TB.
2. Six main APN roles were identified through further analysis: nurse practitioner, clinical nurse specialist, nurse midwife, nurse anaesthetist, consultant nurse and nurse case manager.
3. A specialist nurse/midwife practitioner is a registered nurse/midwife clinician who has acquired the expert clinical knowledge and skills that include complex decision-making abilities and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which she/he has the credentials to practice (Duma et al., 2012)..
4. The advanced nurse/midwife practitioner is a clinical specialist who has the appropriate credentials to practice autonomously (Duma et al., 2012).
5. The overall findings are that despite the country's comprehensive legal and policy framework and commitment to improve the health of young people, there continues to be some structural and systemic factors that hamper effective provision and programming of adolescent and youth friendly services (Mokomane et al., 2017).
6. In multivariate analysis, within-country mortality levels at each pixel were significantly related to local temperature, malaria burden, and recent history of conflict (Burke, Heft-neal and Bendavid, 2016)
7. In the context of new vaccine introduction, age of children at vaccination should be monitored to interpret data on vaccine-preventable disease burden, vaccine effectiveness, and vaccine safety, and to adapt targeted interventions and messages(Delrieu et al., 2015),
8. But challenges to accessing quality health care services against the backdrop of using the CSG to alleviate child poverty(Vaaltein and Schiller, 2017)
9. Children living with sick parents may be at increased risk due to the spread of infectious disease and receiving limited adult care(Kidman et al., 2010).
10. There was consensus amongst the stakeholders regarding eight role functions: taking care of patients; giving health information; managing the care environment; advocating for patients; services and policies; providing emergency care; collaborating with other stakeholders; and providing midwifery care to women, infants and their families. There was disagreement amongst the stakeholders about the role of diagnosis and prescribing treatment. Nursing derives its mandate from communities it serves, and the roles expected must therefore form part of nursing regulation, education and practice standards. Health planners must use these as a basis for job descriptions and rewards. Once these are accepted in the training and regulation of nursing, they must be marketed so that recipients are aware thereof (Seboni et al., 2013)

11. The highest reported role functioning in both settings was for 'General Care and Treatment'. The lowest role functioning reported in both settings was in the role 'Maternal and Child Health' and in 'The Provision of Mental Health Care'. The reported role performance in Anglophone countries was significantly greater than in Francophone countries. The development of competency in nursing/midwifery roles other than medical surgical roles (general assessment and care) should receive more attention in curricula. Special attention needs to be given to Francophone countries, where the professions of nursing and midwifery are poorly developed (Uys et al., 2013)

Need for Advanced Practice Nurses in SSA.

Supporting Demographics

1. Nearly half (n=715; 47%) of the children were aged <18 months.
2. The population of Africa's under-fives will swell by 51 per cent from 179 million in 2015 to 271 million in 2050 and its overall child population (under-18s) will increase by two thirds from 547 million in 2015 to almost 1 billion by mid-century (Liu et al., 2016).
3. It is projected that 1.1 billion children under 18 will be living in Africa by 2100, accounting for almost half (47 per cent) of the world population of children at that time (Liu et al., 2016).
4. By the end of the century, based on present trends, almost half of all children will live in Africa. Two main forces are driving this present rise and projected expansion of Africa's child population: rapidly rising numbers of births (figure) and falling rates of child mortality (O'Malley et al., 2014).
5. half the population is less than 18yrs (Ahmed et al., 2011).
- 6.
7. However, in several countries, mostly in west and central Africa, declining under-five mortality rates have been offset by increasing numbers of births, leaving the absolute number of under-five deaths static or increasing in absolute terms. Investment in Africa's children—in their physical and environmental health and wellbeing; their early development and education; and their protection, inclusion, and participation—will be paramount for Africa to realise the rights of its expanding child population (O'Malley et al., 2014).
8. Understanding and addressing child demographics, and investment in children, should be at the forefront of this realisation (O'Malley et al., 2014)
9. A population of approximately 8 million children younger than 18 years was served by a single paediatric nurse in Malawi in 2010 (Coetzee et al., 2016)
10. Most people in low –and middle–income countries live in rural areas; the WHO reports that more than three quarters of doctors are concentrated in cities (Mwangi, 2017)
11. Fastest growing world region with 2.4% growth rate, population expected to double in 30 years (2040) (Ahmed et al., 2011).

Increasing Access

1. Health care access in rural Kenya is affected by a shortage of health care resources including health care facilities, hospital beds, specialty services, and health care providers (Tong, 2015)
2. A nurse-run school-based clinic is a care model that can address the health care gaps faced by school-aged children in rural Kenya (Tong, 2015).
3. 31% of deaths occur within 24 hours (Nannan et al., 2012)
4. 26 of deaths were considered avoidable (Nannan et al., 2012)
5. Task shifting of ART from Doctors to Nurses is essential for ART expansion in Africa due to the acute shortage of medical doctors. (Fairall et al., 2012)
6. Africa is experiencing significant health issues including limited resources, extreme poverty, overwhelming chronic diseases such as HIV/AIDS, and a shortage of healthcare providers (Duma et al., 2012).
7. Child and family health nurses play an important role in individual and family care (Fowler et al., 2015).
8. The expected growth in PHC activities over the next decade means that much of the work traditionally carried out by doctors will need to be delegated to properly trained personnel like nurses (Madubuko, n.d.)
9. Nevertheless, many countries are turning to this approach to address various healthcare needs (Sastre-Fullana et al., 2014)
10. There is a pressing need for ANP in Kenya (East et al., 2014).

11. Nursing and physician shortage leading to understaffing and heavy workloads and task shifting (Wolf et al., 2012).
12. Primary healthcare is best suited for the special health needs of Africa (Ahmed et al., 2011).
13. Population is largely rural, healthcare facilities allocated at city and towns, access to health care difficult due to bad transport system (Ahmed et al., 2011).
14. SSA has 24% disease burden with 3% world health care personnel (Kolars et al., 2012).
15. Task shifting has been successful in the management of many conditions where there are less prepared health professionals. It is seen as the potential solution in meeting limited access emergency care in Sub-Saharan Africa (Terry et al., 2012).
16. Shortage in physicians increased the demand of Advanced Practice Nurses (Adjapon-yamoah, 2015).
17. Access to quality paediatric health care is essential for the children (Martyn et al., 2013).
18. Delay in seeking care and inability of care givers to identify the severity of the conditions are modifyble factors (Nannan et al., 2012)
19. Disease burden and health worker mismatch is profound in Africa (Mwangi, 2017).
20. .Africa has 25% of the global disease burden, but only 3% of healthcare resources and 1% of health workers. In contrast, North America has 3% of the disease burden, but 25% of healthcare resources and 30% of health workers (Mwangi, 2017).
21. Africa has 2.3 healthcare workers per 1000 population, compared with the Americas, which have 24.8 healthcare workers per 1000 population (Mwangi, 2017).
22. There is no advanced practice training model in Nigeria (Adjapon-yamoah, 2015).
23. APN is necessary for the primary healthcare in Nigeria but the views of medical officers impact the introduction of APN (Adjapon-yamoah, 2015).
24. Task shifting existed in all the countries but the regulation and scope of practice have not been reviewed to confer the legal right on nurses to take on the roles they already being performing (Mccarthy, 2012).

Quality healthcare

1. IMCI guidelines were not followed before referring children to hospitals (Mulaudzi, 2015).
2. Seriously ill patients were given wrong IMCI classification (Mulaudzi, 2015).
3. Prioritization of patients was poor due to wrong classification (Mulaudzi, 2015).
4. Expected primary healthcare was not given before referral (Mulaudzi, 2015).
5. Health care workers at primary healthcare clinics should be retrained in IMCI (Mulaudzi, 2015)
6. There have been significant improvements in the morbidity and mortality rates for children with SCD in high resource countries such as the United States due to factors such as early diagnosis through newborn screening programs, prophylactic therapy (Mulumba and Wilson, 2015).
7. . The estimated proportion of fully immunized children in Nigeria was 34.4% (95% confidence interval) (Adeloye et al., 2016)
8. 50% of dead children die before arrival to the hospital (Coetzee, 2014).
9. More work to be done to prevent preventable deaths (Reddy, Patrick and Stephen, 2016)
10. 3% of children die on arrival to hospital (Nannan et al., 2012)
11. Contextual child issues are one module. There is the need to develop SSA specific nursing programme for child health. (Coetzee et al., 2016)
12. Early detection and prevention of childhood hearing loss is of primary focus. (Witternberg, 2010)
13. 35% of children who died were malnourished and 30 % underweight (Nannan et al., 2012)
14. Clinical personell are responsible for 55% of modifyble factors contributing to death (Nannan et al., 2012).
15. There were long waiting time a at the PHC (Thandrayen et al., 2010).
16. A deliberate and pragmatic restructuring of the PHC for children is required to improve quality of care for the children (Thandrayen et al., 2010)
17. Child mortality is high across Africa. This is due to many factors not least the lack of expert healthcare specialists (Children's Trust Hospital 2014).
18. The need for Paediatric nurses in Africa is a need we can no longer ignore (Children's Trust Hospital 2014)
19. Paediatric nurse practitioners can help meet the needs of underserved children (Martyn et al., 2013).
20. Strengthening paediatric nurse training has been recommended as a primary strategy to reduce mortality in children younger than 5 years in both South Africa and Malawi (Coetzee et al., 2016).
21. Proposed APN roles include illnesses that can be treated without recourse to medical advice, minor ailments which require no specific treatment. It is anticipated that nurses working in PHC sector will increasingly: (Madubuko, n.d.).

22. The advancement of non-communicable diseases in Africa need people who can implement health promotion and intervention strategies and build a strong collaboration in health delivery systems that is led by all health professional, advanced registered nurse practitioners included (Mwangi, 2017).
23. A study conducted by the National Standing Drug Committee on rational drug use rated APN highly in their ability to make logical conclusions about client assessment and hence rational prescriptions of drugs in comparison with other prescribers, which includes medical officers and other nurses (Sietio, 2000).

Reduced cost

1. Only 28% of level one patients were in level one hospital as more than whereas 200% of clients requiring level one care are in level 2 hospitals than in level 1(Hageman J 2012)
2. Services too sophisticated for patient needs Level 1 cases are predominantly infectious and nutritional problems. There is shortage of level 1 beds. (Hageman J 2012)
3. 10 % of children hospitalized do not need to be in hospital. (Hageman 2012).
4. Ensure all health workers dealing with children are competent (Nannan et al., 2012)
5. Many patients were admitted to higher level of care than they need (Thandrayen et al., 2010).
6. More than twice of patients requiring level one care are in level two beds compared to those in level one bed. (Westwood, Levin and Hageman, 2012)
7. more than 40% of population earn less than \$1 daily(Ahmed et al., 2011).

High Preventable Death Rate

1. Empower care givers to recognise danger signs(Nannan et al., 2012).
2. The LMSS reported 700 under-5 deaths, Child PIP 99 and PPIP 252, with an under-5 mortality rate of 18 deaths per 1 000 live births (Reid et al., 2016).
3. Child mortality rate was 16.6% mostly due to malnutrition. (Hendricks, McKerrow and Hendricks, 2016)
4. Reducing Child mortality and morbidity is essential in Sub-Saharan Africa (Cheema, Stephen and Westwood, 2013)
5. Africa e which already has the highest rates of child mortality and HIV infection e must do much more to safeguard the health of its children(Kidman et al., 2010)

Contextual Challenges

Resources

1. There are gaps in Advanced Paediatric nurse training regarding the need for the Advanced practice nursing in paediatric nursing and the capacity of lecturers to teach in such programme(Solomons et al., 2008).
2. Higher categories of nurses are either in managerial position or in education practice (East et al., 2014).
3. All students are working; Part-time programme. Students are all adults: Students have family responsibilities(Essa, 2011)
4. Nursing and physician shortage leading to understaffing and heavy workloads and task shifting (Wolf et al., 2012).
5. Good staff from SSA may be lured with inflated salaries from foreign countries (Kolars et al., 2012).
6. Meagre financial support to produce health care workers in SSA(Kolars et al., 2012).
7. Most SSA schools suffer infrastructure, ICT, faculty and curricula issues (Kolars et al., 2012).
8. Emergency nurse's work under difficult condition; poor material and human resources (Terry et al., 2012).
9. lack of career advancement resulting in all senior nurse practitioners joining administration, and unclear legal boundaries (Sietio, 2000)
10. There is lack of adherence to South African hearing screening guidelines at PHC clinics due to lack of equipment, budgetary constraints and lack of human resources (Petrocchi-Bartal and Khoza-Shangase, 2014)
11. Network interruptions during online tests made students anxious(Essa, 2011)

Medical Profession

1. The existence of lower cadre physician ‘clinical officer’ threatens the APN programme (East et al., 2014).
 2. Nurses are disrespected by some members of the multi-disciplinary team, nurses are poorly remunerated (Wolf et al., 2012).
 3. The greatest support for the NP-APN role came from domestic nursing organizations (92%), individual nurses (70%), and the government (68%), while opposition came primarily from domestic physician organizations (83%) and individual physicians (67%) (Pulcini et al., 2010).
 4. Some professions protect their members’ roles and are adamant to role shifts/task shifting to other cadres (Kolars et al., 2012).
1. The lower cadre of recognised prescribers (clinical officers, medical assistants, physician assistants) stalls the expansion of roles for nurses for APN (INEPEA, 2008a).
 2. Medical practitioner by-laws put restriction on APN. Authoritative medical leadership also inhibits interprofessional collaboration (Kleinpell et al., 2014).
 3. The implementation of APN roles is not exempted from controversy, which mainly arises from the formal transfer of responsibilities and duties from medical to nursing professionals and the analysis of their impact on health quality and the efficiency of healthcare services (Sastre-Fullana et al., 2014).

Nursing Councils regulations

1. Lower cadre of nurses have more autonomy in practice than highly qualified ones (East et al., 2014).
2. Barriers related to NP-APN practice including access to educational programs globally, lack of understanding of the NP-APN role, and lack of respect of the nursing profession (Kleinpell et al., 2014).
3. A new report from IOM identifies that ‘specific country regulations can impose restrictions on various aspects of APRN care including legal/regulatory barriers, institutional barriers and cultural barriers. Specific examples include whether APRNs can admit patients, serve as primary care providers, sign orders for long-term care services, be reimbursed for services, or be recognized by health insurance companies as providers or reimburse them directly’ (Kleinpell et al., 2014).
4. The challenges faced include lack of role models, definition of scope of practice, and reimbursement mechanisms. (Duma et al., 2012),

Training

1. Lack of educational specialization in nursing (So et al., 2016).
2. Limited opportunities of continues education, difficulty in recruiting general nurses to specialist nursing programmes (So et al., 2016).
3. Critical thinking in insufficiently taught in training, poor pre-registration emergency nursing training (Wolf et al., 2012)

only one emergency nursing professional body in Africa (Wolf et al., 2012)

4. Medical education must be focused on the needs of the people served (Ahmed et al., 2011).
5. Some partnerships with USA undermine the needs of SSA stakeholders: another form of neo-colonialism (Kolars et al., 2012).
6. SSA cultures are influenced by colonial powers (Kolars et al., 2012).
7. There are gaps in Advanced Paediatric nurse training regarding the need for the Advanced practice nursing in paediatric nursing and the capacity of lecturers to teach in such programme (Solomons et al., 2008).
8. Nursing training in Africa had been benchmarked on western materials and philosophy (Coetzee et al., 2016)
9. Swaziland had an NP program that was discontinued, but efforts are being made to re-establish the program at the post baccalaureate level (Duma et al., 2012).

Dealing with the challenges of APN

1. 'Communicate about the APRN role and the value of APRN care to stakeholders including Patients(Kleinpell et al., 2014).
2. Institute media campaigns on the role of APRN care in patient care. Conduct proactive lobbying to change restrictive APRN regulations (Kleinpell et al., 2014).
3. Highlight and demonstrate the impact of APRN care at institutional and national level (Kleinpell et al., 2014).
4. Demonstrate the value of APRN care by implementing innovative models that leverage APRN skills, knowledge and experience. Make APRN role visible by identifying contributions of APRN (Kleinpell et al., 2014).

Opportunities

Quality and Quantity of nurses

1. Constituting almost 70 % of the health sector work force, and because of the nature of the skills they possess, nurses represent the client's first contact with professional services at all levels of the health care system (Sietio, 2000). Achievement of any health care objectives, in particular those of primary health care therefore to a large extent depend on the nurses(Sietio, 2000).
2. Malaria incidence and mortality are declining in Africa courtesy of African nurses who are the primary healthcare providers (Mwangi, 2017).
3. One hundred percent (100%) of all RNs have at least one additional advanced nursing education in speciality areas. Either RN plus Psychiatric, or RN plus Orthopaedic, or RN plus Peri-operative, or RN plus Nurse Education, or RN plus gynaecology, or RN plus Thoracic or RN plus Paediatric Nursing (Madubuko, n.d.)
4. World Health Organization officials estimate that in some nations, over 80% of the healthcare needs are met by nurses(Duma et al., 2012).
5. In our register it is not called advanced education yet but with time, explanation, lobbying, pushing, we may in a near future regard this as advanced education and clinical practice (Madubuko, n.d.).
6. There are at least 1000 RNs with a master's degree in a nursing speciality in West Africa (Madubuko, n.d.).
7. Constituting almost 70 % of the health sector work force, and because of the nature of the skills they possess, nurses represent the client's first contact with professional services at all levels of the health care system (Sietio, 2000).
8. Achievement of any health care objectives, in particular those of primary health care therefore to a large extent depend on the nurses(Sietio, 2000).
9. Nurses form the foundation of child health care at clinics and hospitals(Coetzee, 2014)
10. The Institute of Medicine (IOM) in 2010, stated that nurses need to be equipped and allowed to practice to their full potential in order to provide quality and cost-effectives services(Kleinpell et al., 2014).

There however an allowance for Private Practice Nurses (PPNs with minimum of 5 years' experience and license from the Department of Health) who had the least requirements for APN by ICN standards. (East et al., 2014)

Resources

1. South African experts were used to mentor Ghanaian. More emphasis on multi-disciplinary education (Essa, 2011).
2. Collaboration between four major stakeholders: hospital and agencies, communities of interest, universities and international partners (Mutea and Cullen, 2012).
3. South Africa helped Malawi to start specialist child health nursing training (Children's Trust Hospital 2014)
4. Need assessment was conducted in 2010: nurses have interest in the emergency programme (Essa, 2011).

5. Sub-Saharan African tertiary hospitals are uniquely positioned to play a pivotal role in the identification, clinical management, and alleviation of intentional injuries to children by facilitating access to social services and through prevention efforts(Nutor, 2012).
6. University of Cape Town's department of surgery contribute to child health in liver transplantation, paediatric trauma care and child accident prevention(van As, 2010).

History

1. Twenty-three countries had formal recognition of the NP-APN role. Of these, 48% had licensure maintenance or renewal requirements for the NP- APN, with most requiring continuing education or clinical practice (Pulcini et al., 2010).
2. The greatest support for the NP-APN role came from domestic nursing organizations (92%), individual nurses (70%), and the government (68%), while opposition came primarily from domestic physician organizations (83%) and individual physicians (67%) (Pulcini et al., 2010)
3. Interest in the NP-APN role has been gaining ground worldwide (Pulcini et al., 2010).
4. Across 26 countries, the results show a clear predominance of the APN role (27.08%), followed by nurse practitioners (18.75%).
5. Nurses in Botswana and South Africa are evolving into the advanced practice role (Duma et al., 2012).
6. Botswana is moving from a health system where care was provided by missionaries to a system of primary, district, and hospital care(Duma et al., 2012).
7. Community Health Workers were shown to provide a range of preventive interventions for Maternal and Child Health in low- and middle-income countries with some evidence of effective strategies, though insufficient evidence is available to draw conclusions for most interventions and further research is needed. (Bennin and Rother, 2015),
8. The lessons learned from Rwanda are being used to develop same programmes in Burundi. (Solomons et al., 2008)
9. The physicians may support the APN programme if all the challenges surrounding its introduction are solved (Adjapon-yamoah, 2015).

Regulation and practice of APN in SSA

Lack of scope of practice

1. Only Tanzania have updated its regulation to cater for nurses managing HIV cases. There is need for nursing council to play their roles for the development of the nursing profession(Mccarthy, 2012).
2. The roles and responsibilities must be assigned according to the level of the nurse within the framework (Wolf et al., 2012)
3. No scope of practice, inconsistency in terminology across Africa(Wolf et al., 2012)
4. Nurses are practicing outside their scope of practice, high occupational hazards (Wolf et al., 2012).
5. Confusing scope of practice and complex clients (injured with coexisting HIV and tuberculosis) (Terry et al., 2012).
6. Task shifting existed in all the countries but the regulation and scope of practice have not been reviewed to confer the legal right on nurses to take on the roles they already being performing (Mccarthy, 2012).
7. The nursing councils have major role to play in making nursing regulation to march up with the advancing roles of nurses (Mccarthy, 2012).
8. Only Tanzania have updated its regulation to cater for nurses managing HIV cases. There is need for nursing council to play their roles for the development of the nursing profession(Mccarthy, 2012).
9. Confusing scope of practice, role confusion, (Kleinpell et al., 2014).
10. Global characteristics of APN: "Right to diagnose, Authority to prescribe medication, Authority to prescribe treatment, Authority to refer clients to other professionals, Authority to admit patients to hospital, Legislation to confer and protect the title "Nurse Practitioner/Advanced Practice Nurse", Legislation or some other form of regulatory mechanism specific to advanced practice nurses, officially recognized titles for nurses working in advanced practice roles" (Kleinpell et al., 2014).

11. The guideline recommends the APN practice according to their scope of practice and also enable the adoption of advanced practice nurse roles to allow the APN to practice advanced nursing skills (Doodhnath, 2013).
12. Barriers to advanced practice nursing are non-supportive legislative and organizational environments(Heale, Rieck Buckley and Heale, 2015).
13. Role exists but there is no regulation; no role exists; nurse practitioner; clinical nurse specialist; advanced practice nurse (Heale, Rieck Buckley and Heale, 2015).
14. Ambiguities and role confusion exist regarding specialist and clinically advanced nursing/ midwifery practice globally and in most healthcare settings (Duma et al., 2012).
15. This confusion requires clarification in such a way that specialist/clinical advanced nursing and midwifery practice (as a category of the clinical specialist) are clearly delineated (Duma et al., 2012).
16. Some of the major challenges for nurse practitioners include lack of understanding of their role by their supervisors which leads to underutilisation(Sietio, 2000).

Regulatory authority

1. Nursing council shall regulate the practice of the ARPN(Mwangi, 2016).
2. The law does not permit nurses acting in these roles to prescribe so they take the action and wait for the physician to document (East et al., 2014)
3. Government creates the categories and Nursing Council developed competencies for the specialist categories (Academy of Nursing of South Africa and ANSA, 2015).
4. Nursing Council have control over: conceptual clarification, scope of practice, competency framework, standard of practice, code of conduct, continuing professional education(Academy of Nursing of South Africa and ANSA, 2015).
5. A new report from IOM identifies that ‘specific country regulations can impose restrictions on various aspects of APRN care including legal/regulatory barriers, institutional barriers and cultural barriers. Specific examples include whether APRNs can admit patients, serve as primary care providers, sign orders for long-term care services, be reimbursed for services, or be recognized by health insurance companies as providers or reimburse them directly’ (Kleinpell et al., 2014).
6. DoH, DHE, NEI’s and SANC Care key stakeholders(Coetzee, 2014)

Programme development

1. Private hospital nurses are more autonomous than those in public facilities (East et al., 2014).
2. lack of legal framework for specialist nursing education(So et al., 2016).
3. Nurses practice without proper Advanced Practice training (Adjapon-yamoah, 2015).

APN CURRICULUM DEVELOPMENT AND IMPLEMENTATION AND MAINTENANCE IN SSA

Educational Policy Statement

1. Incorporate basic cancer care into preregistration programme, develop nursing faculty, establish programme sharing collaborations, involve international organizations, emphasises best practices, sustain oncology nursing programme by local involvement (So et al., 2016).
2. ICN’s definition of Advanced Practice Nursing was adopted and adapted to the South African context, ‘An advanced Practice Nurse is a leader in clinical field, makes clinical judgement, develops or advises regarding policy development in clinical area, is an interdisciplinary consultant, initiates and places premium on research in the clinical area (Academy of Nursing of South Africa and ANSA, 2015)
3. Barriers related to NP-APN practice including access to educational programs globally, lack of understanding of the NP-APN role, and lack of respect of the nursing profession (Kleinpell et al., 2014).
4. A new report from IOM identifies that ‘specific country regulations can impose restrictions on various aspects of APRN care including legal/regulatory barriers, institutional barriers and cultural barriers. Specific examples include whether APRNs can admit patients, serve as primary care providers, sign

orders for long-term care services, be reimbursed for services, or be recognized by health insurance companies as providers or reimburse them directly' (Kleinpell et al., 2014).

5. Educate health ministries, administrative entities, credentialing committees, and medical staff about the practice of APRNs to assist in updating hospital bylaws. Encourage patients / consumers cared for by APRNs to advocate for them as competent providers. Disseminate/publish/present on exemplars in collaborative models that have demonstrated quality and safety improvements' (Kleinpell et al., 2014).
6. We propose ICN/advanced practice nursing network to come up with a subsidiary organization that shall provide humanitarian assistance to communities through nurses who provide more than 90% of reproductive health services (Kleinpell et al., 2014).
7. The organization with the help of local nurses associations may be mandated to come up with research papers outlining the achievements of nurses in health delivery and then use those research papers to advocate for ARNP policies in their respective countries (Mwangi, 2017).
8. The results of this review can help policy developers and researchers develop instruments to compare advanced practice nursing services in various contexts and to examine their association with related outcomes (Sastre-Fullana et al., 2014).
9. A nurse/midwife specialist (NS or MS) is a professional person who has been prepared beyond the level of a generalist and is authorised to practise as a specialist in a branch of the nursing/midwifery field.
10. **Masters:** FUNDISA therefore recommends the creation of "registrar posts" for nurses doing a professional Master's degree, so that they can be salaried, but dedicated to contributing to service provision while practising as advanced nurse/midwife specialists in a service and training role (Duma et al., 2012),
11. In view of their preparation nurse practitioners are frequently assigned to local clinics in rural and urban areas where they are the most skilled officers and hence assume full responsibility for primary health care services (Sietio, 2000).
12. They are also placed in outpatient departments of hospitals where they may work with a team of medical officers. Of late, nurse practitioners have broadened their horizons and are found in many other settings including industries, rehabilitation centres and private practice (Sietio, 2000)
13. Targeting of interventions for under-5 mortality reduction towards hotspot regions

might be more important than national improvements for achieving the Sustainable Development Goals in sub-Saharan Africa (Burke, Heft-neal and Bendavid, 2016)

14. In the SDG era, countries are advised to prioritise child survival policy and programmes based on their child cause-of-death composition. Continued and enhanced efforts to scale up proven life-saving interventions are needed to achieve the child survival target. (Liu et al., 2016),
15. Another generation of children on the continent cannot be lost to fragility, poverty, and inequity due to failure to address demographic shifts. (O'Malley et al., 2014)
16. The focus is primary healthcare but can practice at all healthcare levels. (South African Nursing Council, 2005)
17. Proven interventions to child survival are the cost-effective primary health care programmes. (Wittenberg, 2013)
18. Paediatric nursing training must focus on PHC but graduates should remain clinically competent (Coetzee, 2014)
19. Many of the interventions that have positive impact on child healthcare in Africa is Primary Health care. These interventions are cost-effective (Wittenberg, 2013)
20. By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes (World Health Organization, 2016).
21. By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births (World Health Organization, 2016).
22. Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all (World Health Organization, 2016).

23. **Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States (World Health Organization, 2016).**
24. **Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks (World Health Organization, 2016).**

Educational Structure

1. ARPN shall be a 2 years masters level programme (Mwangi, 2016).
2. 500 hours clinical education (Mwangi, 2016).
3. APN is a minimum of a masters level programme (Kleinpell et al., 2014) .
4. 12 months emergency programme initiated: didactic, clinical and simulation based learning. South African emergency programme adapted for Ghana (Martel et al., 2014).
5. The professional Master's degree should be focused on preparing an advanced nurse specialist who is proficient to practise at this level (Duma et al., 2012).
6. Involve international organizations, emphasises best practices, sustain oncology nursing programme by local involvement (So et al., 2016).
7. Distance education is economical, distance education increases access, advances in technology supports distance education, distance education has been successfully implemented in South Africa, Zimbabwe and china (Mutea and Cullen, 2012)
8. A master degree was the educational requirement for 25 of the identified roles (Heale, Rieck Buckley and Heale, 2015),
9. To look at roles beyond basic nursing, subsequent education programmes to be at a masters degree level the following is proposed (Madubuko, n.d.).
10. Develop programme - get them affiliated to universities; Develop curricula for advanced nursing practice; Get the rules and regulatory bodies open up appropriate registers for ANP in clinical nursing specialities (Madubuko, n.d.).
11. Get nurses to be motivated by the new concept/paradigm (Madubuko, n.d.)
12. NP- APN education was available in 71% of the 31 countries responding to this item, with 50% identifying the master's degree as the most prevalent credential (Pulcini et al., 2010).
13. The programme will be a minimum of 180 credits and will include a substantial amount of clinical practice (Duma et al., 2012).
14. The students should in effect spend most of their time linked to a functional multidisciplinary clinical team in a variety of clinical practice settings where they can learn and establish their contribution to practise as advanced nurse/midwife specialists (Duma et al., 2012).
15. Research should form at least 50% of the content of this programme. However, it should be strongly practice-focused and projects should be chosen so that they are relevant to improving clinical practice (Duma et al., 2012).
16. Course work should not be heavily classroom-based, but should address developing clinical expertise and current practice, programme management, consultancy, and shifting practice to an evidence- based model (Duma et al., 2012).
17. It is strongly recommended that this qualification and the course work be multi- professional in nature (Duma et al., 2012),
18. . The Institute of Health Sciences in Gaborone, is educating nurses at the master's level (Duma et al., 2012),
19. The program run for eighteen (18) months from January to June of the following year (Sietio, 2000)
20. Student felt lecturers are unapproachable and unavailable. Students were new to the telematic broadcasts and felt uncomfortable and distanced from lecturers (Essa, 2011).
21. AAPN is a master's level programme (INEPEA, 2008a).

22. Nurse educators were trained by the Canadian collaborating institution on distance education basis(Solomons et al., 2008).
23. Advanced Nurse Specialist at masters level (ANSA Board 2016)

Consultation: ‘Who’

1. Training must be aligned with SSA population health needs (Coetzee et al., 2016).
2. Explore ways of developing a responsive and more flexible curriculum(Coetzee, 2014).
3. Start with community engagement (Nursing Council, Ministry of Health) (Coetzee et al., 2016)
1. Dialogue between university, ministry of health and ministry of education were necessary for the recognition and registration of the nursing graduates(Coetzee et al., 2016).
2. A child is anyone less than 19 years(South African Nursing Council, 2005).
3. A child is anyone less than 19years of age(van As, 2010).
4. Specific examples include whether APRNs can admit patients, serve as primary care providers, sign orders for long-term care services, be reimbursed for services, or be recognized by health insurance companies as providers or reimburse them directly’ (Kleinpell et al., 2014)
5. Make educators take on dual clinical-lecturer roles,ensure nursing research is linked to child health issues (Coetzee, 2014)
6. Nursing reforms include equipping of nursing workforce to the disease burden and population health needs (ANSA Board 2016).
7. develop nursing faculty, establish programme sharing collaborations, involve international organizations, emphasises best practices, sustain oncology nursing programme by local involvement(So et al., 2016).
8. An advanced nurse/midwife specialist (ANS or AMS) is a specialist clinician with a broad autonomous practice managing a specific case load (Duma et al., 2012).
9. Paediatric nurse education must address: access to the training, appropriate clinical experiences and efficiencies in length of time spent on degree(Martyn et al., 2013).
10. Paediatric nurse training need to be strengthened to reduce child mortality in Sub-Saharan Africa(Coetzee et al., 2016).

Methodology: ‘How’

1. Both taught curricula and nursing practice must be evidence based(Coetzee, 2014)
2. Community placement is essential for paediatric nurse training (Coetzee, 2014)
3. Blended programme between UCT and KCN(Coetzee et al., 2016).
4. the Primary Health Care approach, (Duma et al., 2012).
5. The where and what nurses learn is important in producing a responsive paediatric nurse for their Sub-Saharan African context (Coetzee et al., 2016).

Process

1. Curriculum must be informed by research (ANSA Board 2016).
2. Nurse specialist competencies must consider the context in which the specialist practices (ANSA Board 2016).
3. Curricula must be linked with national needs (Coetzee, 2014).
4. PHC interventions are cost-effective(Wittenberg, 2013).
5. For example, while primary health care is offered freely by the state, the time and financial costs of travelling to health facilities may hamper the physical accessibility of health services by young people, who are among the economically vulnerable segments of society(Mokomane et al., 2017).
6. Advanced Practice Nursing Practice should be distinguished from all other level of nursing practice (INEPEA, 2008a).
7. Our NPs provide direct primary health care. (Madubuko, n.d.).
8. Curriculum is not linked to competencies needed in SSA workplace: curricula is not responsive to societal healthcare need(Kolars et al., 2012),

9. too many advanced practice nursing titles, inconsistent educational level of training, variable processes of training the APN are major challenges facing APN globally (Kleinpell et al., 2014).
10. Curriculum that outlines the roles, scope of practice education and continuing professional education issues in the development of the Nurse Practitioner role in West Africa (Madubuko, n.d.)
11. The advanced nurse specialist is part of the clinical career ladder and is different from a career path in management or education (Duma et al., 2012).
12. The importance of contextualised learning, in which new knowledge and skills can be swiftly applied in practice, and the benefits of aligning training with local population health needs, are both well understood (Coetzee et al., 2016).
13. Curriculum is at the centre of sustainable paediatric nursing workforce (Coetzee et al., 2016).
14. . Ensure curricula are relevant for the health needs of the country (Nannan et al., 2012).
15. Paediatric nursing curricula redesign is eminent to inculcate clinical specialist views (Coetzee, 2014)
16. There is an acute paediatric nurse shortage in many African countries (Coetzee et al., 2016).

Content (Broad Learning Objectives) “What”

The content of the ACHMP programme has been divided into six domains namely;

1. Global characteristics of APN: “Right to diagnose, Authority to prescribe medication, Authority to prescribe treatment, Authority to refer clients to other professionals, Authority to admit patients to hospital, Legislation to confer and protect the title "Nurse Practitioner/Advanced Practice Nurse", Legislation or some other form of regulatory mechanism specific to advanced practice nurses, officially recognized titles for nurses working in advanced practice roles” (Kleinpell et al., 2014).
2. Professional autonomy (Sastre-Fullana et al., 2014).

Clinical practice

1. Specialty and specialty practice: At least 58% should be dedicated to this component (Duma et al., 2012).
2. In South Africa, she/he may practise as a private practitioner, but this is not exclusive to this category (Duma et al., 2012)
3. The suggestion is that at least 4 hours of clinical role-taking practice should be included in the programme for every 1 credit. That means that for a 120-credit programme, 480 hours of clinical practice would be included (Duma et al., 2012).
4. Clinical placement has the greatest impact on students (Fowler et al., 2015).

Domain A: Nursing Leadership, Management and Administration

- 1 Unit leadership, Consultancy, Leading nursing research team (East et al., 2014),
- 2 function well in management (ICN, 2008a).
- 3 **Leadership and management** (Governance, autonomy, advocacy and responsibility; Leadership - organisations and partnerships; Leading teams in innovation, improvement and change; Managing resources/ outcomes; people, finance, quality, knowledge) (INEPEA, 2008a)
- 4 clinical leadership, (Duma et al., 2012).
- 5 Clinical and professional leadership, Mentoring and coaching, Quality management and safety (Madubuko, n.d.).
- 6 Consulting; Care management, Change management (Sastre-Fullana et al., 2014).
- 7 Advanced Practice Nurse should be a leader in clinical field, Makes Policies, makes clinical judgement, consultant, research (ANSA Board 2016).
- 8 Acquires current knowledge and skills that reflect evidence-based practice and applies them appropriately in a practice setting (South African Nursing Council, 2005).
- 9 Evaluates own child nursing practice in relation to current patient care information, professional practice standards, guidelines and rules and regulations (South African Nursing Council, 2005).
- 10 Influences professional excellence and competence through continuing education and lifelong learning (South African Nursing Council, 2005).
- 11 3.2.4 Identifies own developmental needs in the area of specialisation and engages in activities of self-development to maintain competence (South African Nursing Council, 2005).
- 12 3.2.5 Develops in-service education programmes to enhance childcare services (South African Nursing Council, 2005).

- 13 Leadership and management
- 14 Serves as a role model, change agent, consultant, teacher and mentor in leadership matters of the profession and paediatric specialisation(South African Nursing Council, 2005).
- 15 Participates in setting standards for paediatric nursing practice(South African Nursing Council, 2005).
- 16 Initiates and participates in situational analysis that provides a status of and informs needed childcare services(South African Nursing Council, 2005).
- 17 Engages in teamwork as a team player and team builder, modelling professionalism to peers and junior colleagues(South African Nursing Council, 2005).
- 18 Provides leadership in the management of clinical care of children, utilising all childcare resources and referral services(South African Nursing Council, 2005).
- 19 4Manages human and material resources(South African Nursing Council, 2005).
- 20 supportive of safe care of individuals and groups of children(South African Nursing Council, 2005).
- 21 Influences the development and implementation of standards, practice guidelines, policies and protocol(South African Nursing Council, 2005).
- 22 Designs in-service education programs to ensure best practice in child health services(South African Nursing Council, 2005).
- 23 Participates in analysing health profiles in paediatric services on all levels of care(South African Nursing Council, 2005).

Domain B: Quality Practice

1. Addressing quality of care and support for the health system is more important in adherence to guidelines(Reddy, Patrick and Stephen, 2016)
2. It is important to consider all routine data sources in the evaluation of child mortality. (Reid, Hendricks, Groenewald and Bradshaw, 2016)
3. Systematically evaluates and implements measures to improve the quality, safety and effectiveness of child nursing practice(South African Nursing Council, 2005).
4. Identifies indicators used to monitor the quality of child nursing practice(South African Nursing Council, 2005).
5. Analyses quality data to identify opportunities for improving nursing practice(South African Nursing Council, 2005).
6. Participates actively in the formulation of standards and policies relevant to childcare services(South African Nursing Council, 2005).
7. Initiates and participates in quality audits aimed at improving childcare services(South African Nursing Council, 2005).

Domain C: Ethico-Legal Practice and Professionalism

- 1 **Professional and ethical practice** (Professional role, legal practice and representation; Ethical decision making and anti-corruption; Patient public and professional rights and duties; Global perspectives on health) (INEPEA, 2008a).
- 2 Ethical and legal practice; (Madubuko, n.d.).
- 3 Advocacy (Sastre-Fullana et al., 2014).
- 4 The core includes topics such as professional practice and ethics, (Duma et al., 2012).
- 5 It encourages nurses to reflect critically on their current practice and to take action to improve a child's well-being. It also advocates for the inclusion of children's rights to be at the heart of education and training, professional codes of conduct and standards of care(Lake, 2014).
- 6 The specialised nurse also provides curative and rehabilitative healthcare (South African Nursing Council, 2005).
- 7 Takes responsibility and accountability for own decisions, actions or omissions in childcare delivery(South African Nursing Council, 2005).
- 8 Assumes the role of a child nurse specialist within a multidisciplinary team, based on her qualifications and skills(South African Nursing Council, 2005).
- 9 Utilises knowledge of development and life stages in the provision of overall care of the child(South African Nursing Council, 2005).
- 10 Formulates child healthcare programmes based on analysis of the health profile of the community (South African Nursing Council, 2005).
- 11 Documents accurately and timely all clinical data related to child nursing(South African Nursing Council, 2005)

- 12 Practices within a prescribed legal framework relevant to own practice, including but not limited to, the Constitution, the Children's Act, Nursing Act, National Health Act and SANC Rules and Regulations(South African Nursing Council, 2005).
- 13 Employs teaching strategies that promote, maintain and restore child health(South African Nursing Council, 2005).
- 14 Assesses health education needs and provides health teaching that enhances risk-reducing behaviours (safety), developmental needs and activities of daily living(South African Nursing Council, 2005).
- 15 Formulates health promotion programmes for childcare services(South African Nursing Council, 2005).
- 16 Monitors and evaluates health programmes and obtains feedback on the effectiveness of the (South African Nursing Council, 2005).programmes(South African Nursing Council, 2005).
- 17 Conducts social marketing of health programmes(South African Nursing Council, 2005).

Domain D: Education and Research

- 18 Leading EBP, Data collection, Part of research team, Nursing Education,(East et al., 2014),
- 19 Students lack knowledge of teaching methods, examination policies, and programme structure (Essa, 2011).
- 20 ,Research, innovation and change, Education and mentoring, Report writing and presentation, Evidence based practice (INEPEA, 2008a)
- 21 The competencies are in five domains: Professional, ethical & legal practice; Clinical practice; Quality of practice; management and leadership; and research. (South African Nursing Council, 2005)
- 22 There is the need for African governments to support and fund research in child health (Whitworth, Sewankambo and Snewin, 2010).
- 23 ICN proposes that an APN should be able to integrate research into practice(ICN, 2008a)
- 24 be able to educate other nurses and patients(ICN 2008)
- 25 **Research and Knowledge Management** (Evidence-based practice; audit and evaluation; Documentation and reporting, understanding biostatistics; Participating in empirical research; Critical thinking, appraisal and application of knowledge; Use of information and communications; technology for health) (INEPEA, 2008a).
- 26 **Education and mentoring** (Reflective self-development and role modelling; Continuing professional education;Teaching, coaching and mentoring/preceptorship; Leading communities of practice to share best practice) (INEPEA, 2008a).
- 27 Able to apply research; and Audit to practice (Madubuko, n.d.).
- 28 interpretation of statistics, literature review, utilization of published research and data related to healthcare and practice (Duma et al., 2012).
- 29 The speciality practice components include an evidence base of practice in the discipline field intentionally linked to best practice, refined competencies linked to assessment, planning, doing or delegating care of the patient group and their families in the SA context of care, practice-monitoring and evaluation (Duma et al., 2012).
- 30 Health promotion and education • Nutrition advice • Undertake breast and cervical screening • Be involved in nursing audit and research (Madubuko, n.d.)
- 31 Education and teaching; (Madubuko, n.d.).
- 32 Evidence-based practice(Sastre-Fullana et al., 2014).
- 33 Integrates evidence-based knowledge with the management of child healthcare services(South African Nursing Council, 2005).
- 34 Identifies, examines, validates and evaluates inter- professional knowledge, theories and varied approaches in providing care to children(South African Nursing Council, 2005).
- 35 Utilises best practice evidence to guide clinical decisions(South African Nursing Council, 2005).
- 36 Uses working knowledge to identify clinical problems suitable for nursing research(South African Nursing Council, 2005).
- 37 Conducts or participates in clinical research projects, consistent with ethical guidelines, to improve clinical care of children(South African Nursing Council, 2005).
- 38 Evaluates the clinical significance and application of research findings that will improve care of children(South African Nursing Council, 2005).
- 39 Critiques research for application to practice(South African Nursing Council, 2005).
- 40 Utilises research findings for application in the development of policies, procedures and guidelines(South African Nursing Council, 2005).

Domain E: Advanced Practice Nursing

1. Malaria prevention, health education, breastfeeding promotion, essential newborn care and psychosocial support. however they were found to be especially effective in promoting mother-performed strategies (skin to skin care and exclusive breastfeeding) (Gilmore and McAuliffe, 2013)
2. Most caregivers are not able to make informed decisions from the information provided with OTC painkillers. This is mostly attributable to limited provision of information and low health literacy (Bennin and Rother, 2015),
3. The curriculum content shall consist of: Interpreting Laboratory findings, Pharmacotherapeutics, Nutrition and dietetics, Emergency treatment, Assessment of community resources and referral systems, Role re-alignment, Legal issues in ARPN, Health Care Systems, Management of selected diseases, Differential diagnosis related to specialty problems(Mwangi, 2016).
4. AARNP shall use a standard protocol in her practice. ARPN shall be supervised by a physician or dentist(Mwangi, 2016).
5. Perceived ANP roles existing are: Delivery of specialist care, Independent case management, (East et al., 2014),
6. Diarrhoea diseases are a significant cause of under five mortality. (Reddy, Patrick and Stephen, 2016)
7. Five conditions accounting for 77% of child deaths include: acute respiratory infections, diarrhoea, septicaemia (bacterial), tuberculosis and meningitis. Nannan et al., 2012)
8. The leading causes of death were pneumonia (25%), gastroenteritis (10%), prematurity (9%) and injuries (9%). There were 316 in-hospital deaths (45%) and 384 out-of-hospital deaths (55%)(Reid, Hendricks, Groenewald and Bradshaw, 2016)
9. Among children aged <1 year, there were significantly more pneumonia deaths out of hospital than in hospital (144 (49%) v. 16 (6%); $p<0.001$) (Reid, Hendricks, Groenewald and Bradshaw, 2016)
10. Among children aged 1 - 4 years there were significantly more injury-related deaths out of hospital than in hospital (43 (47%) v. 4 (9%); $p<0.001$) (Reid, Hendricks, Groenewald and Bradshaw, 2016).
11. In 56 (15%) of the cases of out-of-hospital death the child had visited a public healthcare facility within 1 week of death (Reid, Hendricks, Groenewald and Bradshaw, 2016).
12. Thirty-six (64%) of these children had died of pneumonia or gastroenteritis (Reid, Hendricks, Groenewald and Bradshaw, 2016).
13. Health interventions targeted at reducing under-5 deaths from pneumonia, gastroenteritis, prematurity and injuries need to be implemented across the service delivery platform in the Metro West GSA (Reid, Hendricks, Groenewald and Bradshaw, 2016).
14. Paediatric poisoning a threat to the children in Ghana due to lack of parental supervision and poor storage of harmful substances at home(Ansong et al., 2016),
15. The high frequency of at-risk conditions within the Daspoort population justifies the importance of implementation of early communication intervention services in primary healthcare (Claassen et al., 2016)
16. Nurses learn how to recognise severity of disease, early detection and prevention, developmental delays and malnutrition, IMCI,history taking,clinical assessment and resuscitation, empowering parents to care for their children at home/(Coetzee, 2014)
17. Fifty-one children were found to be HIV-uninfected after repeated diagnostic tests. Incorrect laboratory results for children aged <18 months included false-positive HIV DNA PCR tests (40), detectable HIV viral loads (4) and a false-positive HIV p24Ag test (1). One child above 18 months had false-positive HIV ELISA results. An additional 4 children were inappropriately referred after being incorrectly labelled as HIV-infected and 1 child aged <18 months was referred after an inappropriate diagnostic test for age was used. Meticulous checking of HIV- positive status is of utmost importance before committing any child to lifelong ART(Feucht et al., 2012).
18. High frequencies of risk factors included colds and/or flu during pregnancy, previous miscarriages, maternal smoking, low educational levels and unemployment (Claassen et al., 2016).
19. Causes of death included acute lower respiratory tract infections (33%), acute gastroenteritis (33%), birth asphyxia (16%) and complications of prematurity (16%) (Kruger et al., 2016).
20. Nasal continuous positive airway pressure ($p<0.001$), ventilation ($p<0.001$) and HIV infection ($p=0.010$) were associated with transfer to a PICU in a central hospital or death (Kruger et al., 2016).

21. The majority of children (70%) requiring admission to a general high-care unit in a regional hospital were successfully treated and discharged (Kruger et al., 2016). These good outcomes were only achievable with a good transfer system and supportive tertiary healthcare system. (Kruger et al., 2016)
22. One of the triage tools (Emergency Triage Assessment and treatment-South Africa or South African Triage Scale) should be used at all level of care in prioritizing emergency cases. (Cheema, Stephen and Westwood, 2013)
23. Unintentional injuries kill about 6500 children yearly in South Africa. (van As, 2010)
24. Respiratory and gastro-intestinal conditions dominated at level one and 2 units (Hageman J)
25. Paediatric Risk of mortality, paediatric Logistic Organ Dysfunction and Paediatric Index of Mortality all under predicted the mortality rate in children. (Hendricks, McKerrow and Hendricks, 2016).
26. Implementation of IMCI produces positive child health outcomes than not introducing it. There is a gap to be filled in the caregivers skills and knowledge in caring for the under-5 children (Ebuehi, 2010).
27. The PNS screens, assesses, diagnose, plan care, implement care, evaluate care provided and or refers client to the appropriate healthcare setting for specific care (South African Nursing Council, 2005).
28. Children healthcare needs vary according to their growth and development (Martyn et al., 2013)
29. Findings of the review across 20 quantitative studies from 2004 to 2015 indicate consistent associations between exposure to war and community violence and children's symptoms of Post-traumatic Stress disorder (PTSD), depression, and aggression. these ETV influences upon children (Foster and Brooks-Gunn, 2015)
30. Stigma were found to interact strongly, and with both present, likelihood of disorder rose from 19% to 83%. Similarly, bullying interacted with AIDS orphanhood status, and with both present, likelihood of disorder rose from 12% to 76% (Cluver and Orkin, 2009).
31. Approaches to alleviating psychological distress amongst AIDS-affected children must address cumulative risk effects (Cluver and Orkin, 2009).
32. Collaboration and interprofessional relationships; Expert clinical judgement; (Madubuko, n.d.).
33. Identification and attention to danger signs were poorly done (Westwood, Levin and Hageman, 2012)
34. Unwarranted antibiotics were prescribed in almost 33% of cases (Thandrayen et al., 2010)
35. Growth monitoring and nutritional counselling was inadequate (Thandrayen et al., 2010)
36. Food supplements were not given to deserved children (Thandrayen et al., 2010)
37. Mortality differed significantly across only 8–15% of country borders, supporting the role of local, rather than national, factors in driving mortality patterns.
38. We found that by the end of the study period, 23% of the eligible children in the study countries continue to live in mortality hotspots—areas where, if current trends continue, the Sustainable Development Goals mortality targets will not be met (Burke, Heft-neal and Bendavid, 2016).
39. The leading under-5 causes were preterm birth complications (1·055 million [95% uncertainty range (UR) 0·935–1·179]) (Liu et al., 2016).
40. pneumonia (0·921 million [0·812 –1·117]), and intrapartum-related events (0·691 million [0·598 –0·778]) (Liu et al., 2016).
41. In the two MDG regions with the most under-5 deaths, the leading cause was pneumonia in sub-Saharan Africa and preterm birth complications in southern Asia. Reductions in mortality rates for pneumonia, diarrhoea, neonatal intrapartum-related (Liu et al., 2016).
42. events, malaria, and measles were responsible for 61% of the total reduction of 35 per 1000 livebirths in U5MR in 2000–15. Stratified by U5MR, pneumonia was the leading cause in countries with very (Liu et al., 2016).
43. With its inhabitants set to soar, Africa will become increasingly crowded, with its population density projected to increase from 8 persons per square kilometre in 1950 to 39 in 2015 and to about 80 by mid-century.
44. interpersonal skills for professionals, (Duma et al., 2012).
45. Health promotion; Communication (Sastre-Fullana et al., 2014).
46. Girl children are counted secondary children in many patriarchal societies in Africa.
47. Many of the children are abused through avoidance of education, female genital mutilation, arranged marriages, neglect, child prostitution, and child labour. (Khalil, 2006)
48. The study highlights the challenges for violence prevention interventions in under-resourced contexts (Breen, Daniels and Tomlinson, 2015)
49. The speciality practice components include an evidence base of practice in the discipline field intentionally linked to best practice, refined competencies linked to assessment, planning, doing or delegating care of the

- patient group and their families in the SA context of care, practice-monitoring and evaluation (Duma et al., 2012).
50. Level 1 clients have predominantly infections and nutritional problems (Westwood, Levin and Hageman, 2012)
 51. Chronic diseases were found in significant number of teenagers (Westwood, Levin and Hageman, 2012)
 - 2 Advocacy for policy and practice, (East et al., 2014)
 52. Students lack computer skills. Students lack resources: computer, transport, internet(Essa, 2011).
 53. Controlled HIV leading to high chronic disease burden, Maternal and neonatal mortality are on the rise despite worldwide decrease (Ahmed et al., 2011).
 54. Specialist functions must lead to: Increasing life expectancy, decreasing maternal and child mortality, combating HIV and AIDS and decreasing TB burden, strengthening the health system (Academy of Nursing of South Africa and ANSA, 2015)
 55. Sound knowledge base, clear professional identity, interpersonal skills and assessment skills are needed for specialized care(Coetzee, Britton and Clow, 2005).
 56. An Advanced Practice Nurse must be a registered nurse and acquire complex decision-making skills; be competent clinically in his or her specialty field and the context in which he/she practices(INEPEA, 2008a).
 57. There is the need for the APN to be experienced in clinical practice, be a critical thinking leader, and clinically competent, practice oriented, be able to (INEPEA, 2008a).
 58. have high degree of autonomy; and practice independently; should be able to own and manage cases independently; should be able to conduct advanced health assessment; have decision making skills and diagnostic reasoning; she /he should recognize advanced practice competencies, be a consultant in their specialties; plan projects, implement and evaluate them; be the first point of contact for patients (INEPEA, 2008a).
 59. In addition to ICN framework, there must be ICT use(INEPEA, 2008a)
 60. , knowledge management(INEPEA, 2008a)
 61. , Budget management and value for money, Human resource management, Biostatistics and other epidemiology, , Working with international partners, , Empowerment of staff and healthy communities, Patient and staff safety and infection control (INEPEA, 2008a).
 62. **Nursing practice: core and specialist** (Provision and management of client health; Nursing theory, practical skills, communication, counselling, Holistic and complex care and specialist procedures, Emergency response, patient and staff safety and infection control) (INEPEA, 2008a).
 63. **Empowerment and healthy communities** (Social determinants of health; Working with communities and advocacy; Public health education and information provision; Gender mainstreaming and cultural awareness(INEPEA, 2008a).
 64. Competencies describe the: Knowledge (what must be known); Understanding (of how to apply knowledge); Skill (the ability to perform tasks and the); Performance criteria (showing these in action); Required for performance of a task by an Individuals and Teams working with the competent professional at a given level in a given situation” (INEPEA, 2008b).
 65. **Capability:** Capability includes -Critical thinking ability to understand theory; And to apply it to new and innovative fields; to solve problems, to lead and encourage others; It is the practical use of knowledge ;To improve services ;To advocate policy ;To help others understand ;It implies mastery of knowledge and practice; And is therefore appropriate to MSc level”(INEPEA, 2008b)
 66. The Advanced Practice Nursing Practice in East Africa should be much focussed on Education; Community; Acute Care; Mental Health; Maternal and Child Health, HIV and Management (INEPEA, 2008a).
 67. Included in their practice description is the ability to:• Obtain nursing and medical history • Perform physical examination, diagnose and treat acute/common health condition,• Diagnose/treat/monitor chronic condition(Madubuko, n.d.)
 68. Carry out physical assessment; Be a competent nurse by making nursing diagnosis; Proficient in pharmacology and drug interactions modules; High degree of emotional support and counselling; Excellent in referral and discharge protocol; Case management (Madubuko, n.d.).
 69. This includes clinical, teaching, administration, research and consultancy (adapted from ICN 2009: 6) (Sastre-Fullana et al., 2014)
 70. This advanced nurse/midwife specialist may function as first entry-point and needs the knowledge and expertise to be able accurately to assess, diagnose and manage the patient population in the speciality area (Duma et al., 2012)..

71. This may include being able to make a “medical diagnosis” and prescribe treatment. This usually requires expertise in diagnostic testing and treatment beyond the normal practice of the nurse/midwife (Duma et al., 2012).
72. Emphasis was placed on assessment, diagnosis and management of common diseases, health promotion and disease prevention (Sietio, 2000).
73. A repertoire of family nurse practice skills were acquired through intensive theory from nursing, social and medical sciences as well as public health sciences and concentrated periods of clinical practice (Sietio, 2000).
74. - Family Nurse Practice 1/Health Assessment; Communication in Health Intervention; Family Nursing; Maternal and Child Health; Pharmacology; Public Health Sciences (Epidemiology, Research, Statistics); Clinical Nutrition; Mental Health Intervention; Dental Health Intervention; Laboratory Intervention; Maternal and Child health; Family Nurse Practice 11/Disease Diagnosis and management; Role Development ; Practicum 11 (Sietio, 2000).
75. Course Content will include the following modules: Physical assessment; Nursing diagnosis; Pharmacology and drug interaction; Emotional support and counselling; Referral and discharge; Case management; Applied research; Nursing audit (Madubuko, n.d.).
76. The Role of NP Includes: Clinical diagnosis of nursing nature. • Nursing intervention (treatment) with an inherent possibility of a need to prescribe only. Midwives have the permit to prescribe from a limited formula (Madubuko, n.d.).
77. Carry their own functions for specific procedures, Screen and fitter patients, Provide counselling service to patients and relatives, Monitor and care for patients with chronic illness (hypertension, asthma, diabetes etc.) (Madubuko, n.d.).
78. Prescribe and interpret diagnostic tests such as ECGs, Xray and laboratory reports (Madubuko, n.d.)

Domain F: Attitudes and Values

1. Cultural competencies (Sastre-Fullana et al., 2014).

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CERTIFICATE OF EDITING

To whom it may concern:

This letter confirms that Chapters 5 to 9 of the thesis detailed below were edited for English language grammar, language, spelling and punctuation.

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