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HEALTH AND WELLBEING OF THE TRANSNET-PHELOPHEPA HEALTH CARE TRAIN COMMUNITY:
A MIXED METHODS CASE STUDY

Amme Mardulate Tshabalala

A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfilment of the requirements for the degree of Doctor of Philosophy

Johannesburg, 2016

DECLARATION

I, Amme Mardulate Tshabalala, declare that this report is my own work. It is being submitted for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree at any other university.

Signature: ----------

Amme Mardulate Tshabalala

Date: ----------

DEDICATION

Glory be to the Lord God Almighty with whom all is possible.

I dedicate this thesis to all of the Transnet-Phelophepa Health Care Train employees who sacrifice their time with families, friends and significant others to provide a much-needed service in the rural, remote and underserved areas in South Africa.

This thesis is also dedicated to my daughter Lungile Khambule, my grand-daughter Lindokuhle Senamile Khambule, and to all my other family members.

This thesis is a symbol of my faith that nothing is impossible with God on your side. May this project encourage you to be all the best you can be in this world full of opportunities.

ACKNOWLEDGEMENTS

The Transnet-Phelophepa Health Care Train (HCT) embarks on a very long journey (lasting 35 weeks) annually, providing health care services to the remote and underserved people of South Africa.

It has been a very long journey for me to undertake this research. I wanted to embark on and complete this task in honour of the Transnet-Phelophepa HCT project. It has been a journey full of uncertainties in view of the facts that, firstly, 'health and wellbeing' is a broad concept with no dedicated meaning, and secondly, the Transnet- Phelophepa HCT is unique, being the first and only primary healthcare train in Africa. Therefore, there is currently a lack of reference with regards to literature and associated operational contexts and activities.

I could not have achieved this project without the support of the following people:

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ABSTRACT

'Unhappy people cannot create a society enjoying wellbeing' (Alatartseva and Barysheva, 2015:36). This statement in the context of the Transnet-Phelophepa Health Care Train (abbreviated henceforth as the Transnet-Phelophepa HCT) implies the importance of maintaining the health and wellbeing of the service providers who are responsible for the health and wellbeing of society, through the services provided by the train. The service providers consist of two main groups: yearly-contract employees (called 'permanent service providers') and Health Sciences students working on the train for up to two weeks (called 'students' in this paper).

The focus in this study is on aspects that impact on the health and wellbeing of the Transnet-Phelophepa HCT service providers and service users. King's (1981) theoretical framework of conceptual systems is used to discuss the key constructs of health and wellbeing that were researched.

Purpose and objectives: The statement of purpose of this study was phrased around several identified facets of health and wellbeing on the Transnet-Phelophepa HCT.

Phase 1

The objectives of the study were to collect, determine, describe and explore the following aspects related to working, living and being served by the Transnet-Phelophepa HCT:

a) the safety climate as perceived by the health sciences students
b) the health sciences students' perceptions of decision latitude and social support
c) the levels and sources of work stress among permanent service providers
d) the permanent service providers' perceptions of their quality of life
e) the permanent service providers' experiences of life
f) the opinions of the service users, i.e. members of the public, about the health care they received.

Phase 2

Based on the research findings, recommendations were formulated for health and wellbeing on the Transnet-Phelophepa HCT.

Methodology: Based on the methodological assumptions, a mixed methods embedded case study design was adopted for this study and implemented in two phases. In Phase 1, a convergent parallel design was applied wherein five quantitative surveys and eight qualitative in-depth

interviews were conducted for the purpose of exploring and describing health and wellbeing on the Transnet-Phelophepa HCT.

Data collection: Five quantitative surveys were employed. Two of these collected data from a sample of 257 health science students (n=257). The first survey explored their perceptions of the train's safety climate and the second survey determined their perceptions of decision latitude and supervisor support. The third and fourth surveys collected data from permanent employees (n=19) to determine their sources of work stress and perceptions of their quality of life on the Transnet-Phelophepa HCT. The fifth survey collected data from a sample of service users (n=124) to explore their perceptions of the health care provided on the Transnet-Phelophepa HCT. A qualitative study exploring permanent employees' experiences of life on the Transnet-Phelophepa HCT was conducted using eight in-depth interviews to collect data from participants (n=8) until data saturation was reached.

Data analysis: In Phase 2, Onwuegbuzie and Teddlie's (2003) seven-stage conceptualisation of the mixed methods data analysis process was applied for the purpose of formulating recommendations for health and wellbeing on the Transnet-Phelophepa HCT.

The main findings of the study were constructed within King's (1981) conceptual model of interacting systems address the main facets of wellbeing. King's interacting systems are defined as the personal, interpersonal and social.

Results: The main facets of health and wellbeing emerging from the results include the following: **Personal systems** are discussed in the context of space. The Transnet-Phelophepa HCT is perceived as a safe environment. However, concerns were raised regarding the possibility of occupational health and safety hazards. Facets related to **interpersonal systems** are: supervisor support, co-workers' relations as perceived by students, as well as permanent employees' perceptions of sources of stress on the Transnet-Phelophepa HCT. **Social systems** are discussed in relation to health care service provision, work/home balance, as well as authority, decision-making and control.

Key words: Transnet-Phelophepa, Health Care Train, mixed methods case study, safety climate, job content, decision latitude, work stress, quality of life, health, wellbeing.

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LIST OF ABBREVIATIONS

CDC	–	Centres for Disease Control and Prevention
DHS	–	District Health System
DOH	–	Department of Health
GQOL	–	General Quality of Health
GWSS	–	General Work Stress Scale
HCT	–	Health Care Train
HIV	–	Human Immuno-deficiency Virus
HRQOL	–	Health Related Quality of Life
PHC	–	Primary Health Care
QOL	–	Quality of Life
SHAWCO	–	Student's Health and Welfare Centres Organisation
SWSI	–	Sources of Work Stress Inventory
SWSS	–	Sources of Work Stress Scale

CHAPTER ONE

BACKGROUND AND RATIONALE

1. ORIENTATION TO THE STUDY

Looking out through the train window at 4 a.m., the railway train station at Crossmoor, Kwa-Zulu Natal is buzzing with people. Some people have sacrificed the warmth of their homes and slept at the railway station. Some walk; others arrive at the railway train station by bus, car, bicycle or wheel-barrow. The security officers inform the people about the health services that are available on the Transnet-Phelophepa Health Care Train (HCT). Then they are ushered to where they should sit and wait for the service.

Orientation of health science students and the weekly appointed casual clerks and interpreters is facilitated by their respective service managers in the Health, Dental, Eye and Psychology clinics, as well as by the Pharmacy manager. The rest of the casual workers are orientated by the Financial and Operational Manager (the cashiers) and by the Logistics Manager (the cleaners and other general workers). This ensures that all the participants on the health train are well orientated to the service delivery process and to affirm the expected behaviours in performing their assigned duties, and furthermore, to set the scene and the pace for effective and efficient service delivery on the long-awaited health care service train, the Transnet-Phelophepa HCT.

The name *Phelophepa* is a combination of the Tswana and Sotho South African languages, and means 'good, clean health'. The community members (i.e. members of the public) describe it as the 'miracle train' or the 'train of hope'. The Transnet-Phelophepa HCT was introduced in 1994 by the state-owned transport and logistics enterprise, Transnet Foundation. (The exterior of a carriage is shown in Figure 1.1.) It is the first and only primary healthcare train in Africa. The concept of a mobile health train is based on the world's first hospital on wheels in India, The Lifeline Express hospital train (Impact India Foundation, 2001–2002).

The Transnet-Phelophepa HCT was introduced in southern Africa in response to the inaccessibility of health care services and inadequate health care programmes in the rural and remote areas as well as in underserved communities. In the majority of these areas, the mobile health care clinic is the only source of health care provision at community level. Health care service delivery programmes in rural and remote areas are seriously affected by the lack of adequate financial commitment from the government, resulting in poor

infrastructure such as bad roads in rural and semi-rural areas (Gaede and Versteeg, 2011:101).



Figure 1.1: The Transnet-Phelophepa Health Care Train

1.1 THE TRANSNET-PHELOPHEPA HEALTH CARE TRAIN

1.1.1 Operational Context

The Transnet-Phelophepa HCT provides a health service in mainly rural or remote areas and some underserved urban areas in eight of the nine provinces in South Africa.

'Rural health' versus 'remote health' are complex concepts that are often used together as 'rural and remote health', or interchangeably. Wakerman (2004) conducted a literature review of 55 citations and nine web sites covering Australia, Canada, New Zealand, the United Kingdom and the United States in search of a definition of 'rural and remote health'. The results revealed that most of the definitions were time and place-sensitive. In addition, health services were characterised by geographical, social and professional isolation, among other issues. According to Gaede and Versteeg (2011:100), there is no standardised definition of rurality in South Africa. A range of criteria is used, such as census data, jurisdiction as well as sizes of towns, and characteristics of infrastructure, such as measures of agriculture.

Globally, access to health care is generally worse in rural and remote areas. Furthermore, people in these remote areas bear the greatest burden of disease, mainly due to poor

socio-economic conditions of poverty (Strasser, 2003:457). According to the WHO (2010:1) the proportion of the population living in rural areas tends to be greater in poorer countries than in wealthy ones. This adds to the shortage of health care workers as most workers prefer to live and work in cities. There is also a serious lack of health care facilities in the rural areas. Accessing affordable, good quality and comprehensive primary health care (henceforth referred to as PHC) remains a challenge (Gaede and Versteeg, 2011:99).

Some of the challenges based on the WHO (1978) principles of PHC are:

Accessibility of Health Services:

According to the WHO (1978), health care services should be within a radius of 5 km to be accessible. There should be affordable transport in areas where services are further away. Furthermore, there should be sufficient and appropriate services available when individual needs the service. However, in most rural or remote areas, there are still many people who cannot afford transport, walking for long distances to access the health care services.

In the past, before the invention of mobile vans, small private vehicles were used as a form of mobile health services to South African areas where there were no fixed clinics. A private vehicle would transport staff members, equipment and medication to areas further away from a fixed health facility. In some instances, the service providers would drive to a designated area and use the space provided as a clinic base on a specific day and time. Where there was no designated space available, a mobile car would park at a specified place, for an example, on school ground, at a shop or under a tree. Obviously, this kind of service provision has a number of limitations, such as lack of privacy for taking information, for physical examination and for procedures such as administration of injections, among other issues.

A number of academic institutions have contributed in provision of health care to rural or poorly resourced communities. Johannesburg University of the Witwatersrand partnered with West Rand District Health to provide health care services in the Muldersdrift area (www.wits.ac.za). Through the Student's Health and Welfare Centres Organisation (SHAWCO), the University of Cape Town continue to provide a health service using three mobile health care services since 1943 (www.uct.ac.za).

As part of a strategy to improve accessibility to health care, the government of South Africa the White Paper for the Transformation of the Health System in South Africa in 1997. The strategic transformation approach is based on the principles of PHC (primary health care)

as stated in the Alma Ata Declaration the WHO (1978). In Section 1.1.2(b) the objective stipulates the importance of increasing access to integrated health care services for all South Africans, focusing on the rural, peri-urban and urban poor. To further facilitate this objective, the District Health System (DHS) has been adopted as the vehicle to deliver comprehensive PHC services in South Africa. At community level, services include mobile and fixed clinics and community health centres (www.health.gpg.gov.za). Since 1994, more than 500 new PHC clinics have been built; over 2 200 have been upgraded and given new equipment, and 125 new mobile health care services were introduced as of 2014 (www.southafrica.info).

Churches, medical organisations and corporates are some of the organisations that partnered with the Department of Health in improving access to health services. In 2010, international medical humanitarian organisation Medécins Sans Frontières (Doctors Without Borders) pioneered an HIV-care mobile-clinic approach providing a service for 10 of the 60 farms in Limpopo Province (http://reliefweb.int/report/south-africa/mobile-clinics). A church organisation, the South African Muslim Charitable Trust, donated R460 000 for provision of cancer services in each of the nine provinces in South Africa (www.samet.co.za).

Some corporate organisations are involved in providing mobile health services. Samsung recently launched solar-powered mobile health clinics providing ear, eye, blood and dental services in Cape Town (m24m.co.za). In another initiative, a partnership among corporate companies involving Philips South Africa, the Rhiza Foundation, the Nozala Trust and the Industrial Development Corporation (IDC) resulted in the launch of a state-of-the-art mobile clinic, also providing cervical cancer screening and dental care, for the Diepsloot community in Johannesburg (www.health.gpg.gov.za).

The Transnet Foundation, in partnership with Roche, has continued to support the South African government in the endeavour to make health care accessible to all, especially in rural, remote or poorly resourced communities, through the Transnet-Phelophepa HCT. The first Phelophepa Health Care Train was launched in 1994, providing a health service to four provinces every alternate year. Due to increased demand, a second train was launched in 2014. Transnet-Phelophepa HCT 1 and 2 provide treatment of common ailments as well as services that financially are difficult to access, such as dental, optometry and psychology services, with each train visiting four provinces every year.

Each Phelophepa Health Care Train departs at the beginning of the year and travels for nine months to visit four provinces per year. I it stops at predetermined rural railway train stations, for a minimum of five working days at each stop. There are 19 permanent employees who live and work on the train for 35–36 weeks of the year. At each station they are supported by under- and post-graduate students from different colleges and universities in South Africa. Thirteen security staff from a private company are allocated a fixed period on the train. At each station, nine locum professional nurses, 21 translators and a number of unemployed men and women from the community are employed on a weekly basis to assist with health care service delivery.

The government of South Africa recently introduced a national maternal health service called MomConnect South Africa, and the PHC re-engineering strategy, in an attempt to bring health services closer to where the people are (DOH, 2010). The PHC re-engineering strategy is a long-term community-based approach to PHC (DOH, 2010). An outreach team consisting of a Professional Nurse, six community health workers, a health promoter and an environmental health practitioner (where available) will be responsible for 1 500 families (Naledi, Barron and Schneider, 2011). These initiatives aim bring health services closer to underserved people.

Acceptability: One of the most important key principles of the PHC strategy is that the health care service should be acceptable to individuals and families. The basic requirement for services to be acceptable according to Murante (2009–2010:9) is that 'health services have to meet the clinical needs of the population as well as ensuring respect for persons, prompt attention, and quality of amenities. Providing acceptable health care services that satisfy the service users depends on making sure that services reflect their desires and meet their needs.

1.1.2 Structural Context

The Transnet-Phelophepa HCT is a 600-ton, 360-metre-long train. The train began operating in 1993 as a three-coach eye-care clinic initiated by the Rand Afrikaans University (now known as the University of Johannesburg). Later, Transnet took over the project for sustainability. The train was renamed the 'Transnet-Phelophepa Health Care Train'. From a three-coach eye clinic, the train was eventually extended to include other services. In 2004, the Transnet-Phelophepa HCT had expanded to 16 coaches, and in 2009, to 18 coaches.

COACHES No.	1 and 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Power House Laundry																	
Logistics Offices																	
Logistic Staff Accommodation																	
Administration Offices																	
Clinics									Eye	Eye	Dental	Psychology	Health		Pharmacy		
Kitchen																	
Dining Car																	
Staff Accommodation																	
Students Accommodation																	
Store Room																	
Security Accommodation																	

Figure 1.2: The internal environment of the Transnet-Phelophepa HCT

The internal environment on the Transnet-Phelophepa HCT consists of administration offices, four clinics and a residential area for service providers. The work/home boundaries are thus highly permeable, resulting in an overlap between a person's work and personal life. The challenge is related to the extent to which one can control the 'spill-over' of work aspects to non-work or home aspects. Moreover, some of the permanent staff members share the accommodation boundaries with the students as illustrated in Figure 1.2. Internally the train is an interrelated and intertwined work/home life space. The Transnet-Phelophepa HCT external environment consists of three dimensions as illustrated in Figures 1.3 and 1.4, namely railway stations, rural towns or people waiting in queues.



Figure 1.3: The external environment: service users waiting to be triaged



Figure 1.4: The external environment: service users' consultation waiting area

The local health services, education institutions and policy makers are also considered as part of the external environment.

1.1.3 Organisational Structure

The Transnet-Phelophepa HCT organisational structure consists of a portfolio manager based at the Transnet head office. On board there are 19 permanent employees responsible for efficient health service provision. The Transnet-Phelophepa HCT is managed by the train manager and an executive team comprising eight permanent employees, who are managers of the six operational clinics on-board the train. The six on-board clinics are the Health, Eye, Dental, Psychology, Educational and Roche Pharmacy clinics. The other managers are the Catering, Financial and Operational and the Outside Logistics manager. Figure 1.5 depicts the organizational structure of the Transnet-Phelophepa HCT.

The executive team meets on a monthly basis to discuss operational matters, for planning and for major decision-making. The core business is based on the Transnet Limited vision of bringing hope and empowerment to the poor in the rural South African areas through delivering a comprehensive, affordable and accessible mobile health care service to complement and support the existing facilities in rural communities of southern Africa. (www.trainofhope.org).

1.1.4 Transnet-Phelophepa HCT as an Institution

According to the Advanced Learner's Oxford dictionary (2015) an institution is a large organisation that has a particular purpose. Examples cited are the educational, financial and medical services. The researcher considers and describes the health train as a multifaceted institution.

First, the Transnet-Phelophepa HCT is a work-related and residential setting for the permanent employees and students allocated on the train. Secondly, it is a service-learning setting for health science students and hotel management students. Lastly, it is a health care service institution for most of the rural and remote populations. These factors of the train are described below.

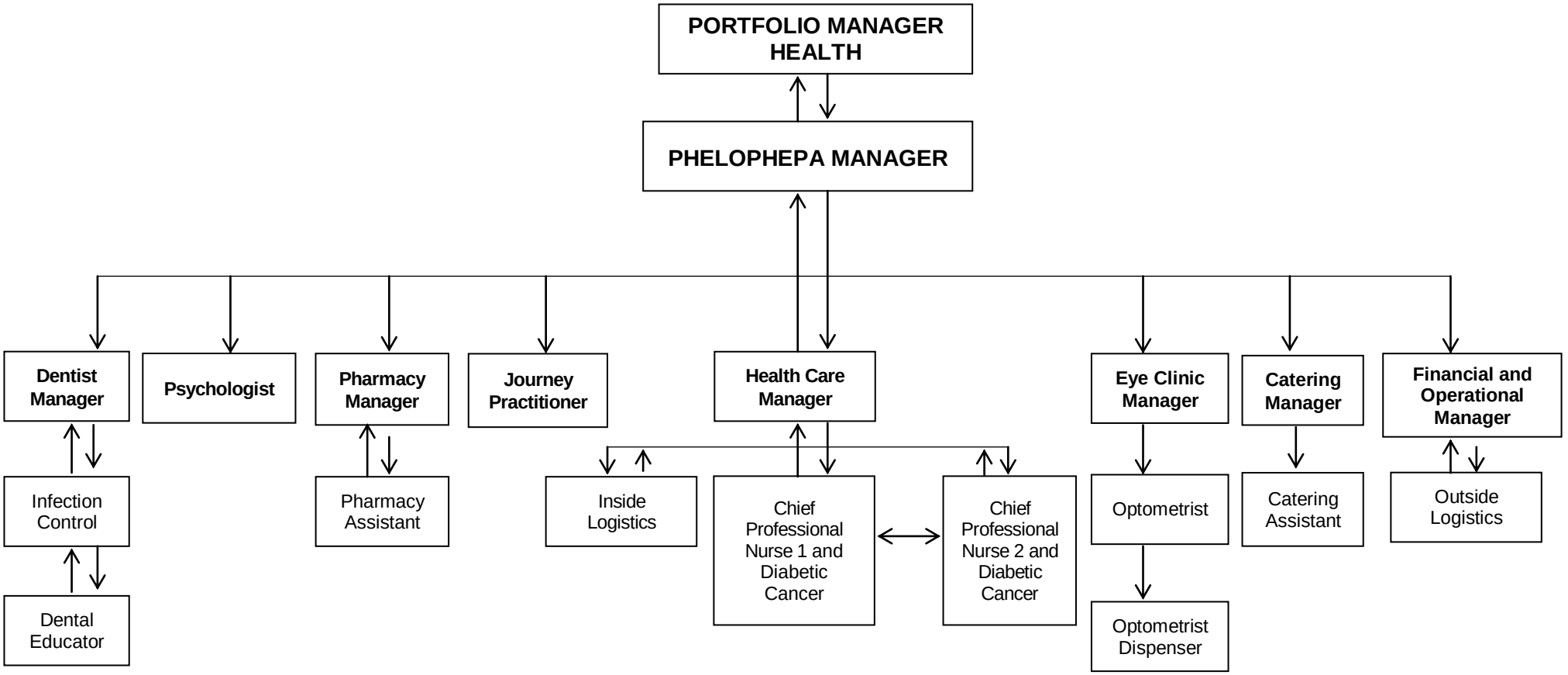


Figure 1.5: Phelophepa Health Care Train organisational structure

1.1.4.1 **Work-related and residential institution**

As the Transnet-Phelophepa HCT travels from one station to the next and from one province to the next province, permanent service providers and students live and work on the train. During this time they are cut off from their usual networks (family, friends, etc.). All aspects of life, namely work and non-work activities are conducted on board the train. Most of the time there is no privacy as some of the permanent service providers share the accommodation space with the students. Other shared facilities include the dining car and the bathrooms. Furthermore, all daily activities on the Transnet-Phelophepa HCT are tightly scheduled. This setting can be compared to the other total institutions such as prisons and mental institutions.

The Transnet-Phelophepa HCT is thus a residential accommodation institution for permanent service providers and students allocated for service learning.

1.1.4.2 **Service learning institution**

Service learning on the Transnet-Phelophepa HCT affords students an opportunity of orientation to rural health and learning in a rural environment. Students get an opportunity to work in a multidisciplinary team. As well as to manage services directly offered on the train participating in outreach programmes to schools. Final year students from a range of health disciplines and hotel management, manage the services under the supervision of qualified practitioners. Every two weeks there are nine Nursing, twelve Optometry, eight Dental and four Psychology students as well as two pharmacy students allocated on a weekly basis and four hotel management students stay for six months at a time on the Transnet-Phelophepa HCT. Annually, approximately 600 students participate in the learning activities on the Transnet- Transnet-Phelophepa HCT.

1.1.4.3 **Health care service institution**

The Transnet Foundation's ideal of contributing towards primary health care delivery to South Africa's rural poor populations is achieved through the service provided by the permanent service providers and the students allocated for service learning on the Transnet-Phelophepa HCT. Health care services are rendered to more than 44 000 rural people by the Phelophepa's on-board Psychology, Health, Dental and Eye clinics. Free treatment is provided for common ailments, as well as diabetes, cervical and prostate cancer screened. Free eye testing is done, and spectacles are made up on the same day. Procedures at the dental clinic include extractions, fillings and cleaning.

More than 160 000 community members are reached per year in the areas visited by the Transnet-Phelophepa HCT. Approximately 600 local community members are empowered every year through a 5-day Basic Health Education programme on the Transnet-Phelophepa HCT. More than 117 000 rural children are reached through the health, dental and optometry school-screening programme. Psychology workshops are facilitated for adults as well as learners. Although essential continuous services are not offered, such as growth monitoring, family planning, immunisations, services for pregnant women and management of chronic diseases, the Transnet-Phelophepa HCT fulfils the criteria for an integrated mobile health care service and for a community health centre on wheels.

1.2 PROBLEM STATEMENT

According to the World Health Organisation (1994) total institutions, where the place of living is the same as the place of work, are on the increase. Places of work such as mining, forestry and oil extraction activities are on the increase and moving steadily to remote areas. The assertion is that such workplaces create specific environmental and psychological problems and needs, impacting on the health and wellbeing of the working population ultimately affects service provision. Hence, the recommendation by the World Health Organisation WHO (1994) for research that will contribute towards wellness and safety programmes for these new and special working conditions.

The working conditions, type of work, vocation and professional status, geographical location of the workplace and employment have a profound impact on social status and social wellbeing of the workers and the service users (World Health Organisation, 1994). The Transnet-Phelophepa HCT service providers live and work on the train and provide a service for rural communities. This kind of setting creates a set of complex challenges. Some of the challenges are related to meeting the changing needs of the communities given the limited resources and range of skills required. ‘Live my work’ is another challenge identified by Mills, Francis and Bonner (2007:583). The challenges identified are that there is no demarcation between workplace and home therefore, safety, health and wellbeing may be compromised. Finally, the service provider is also a user of the same service in the event of ill-health**,** as in majority of the rural areas there are no other services. However, they face a more challenging situation. Unlike in the majority of the rural health care settings these service providers and personal lives are not separate entities. The interrelatedness and intertwined link between work and home could lead to stress (Danna and Griffin, 1999:358). Results from a walk-through Health Risk Assessment survey on the

Transnet-Phelophepa HCT by Tshabalala, Bronkhorst and Acutt (2005) showed that although the Transnet-Phelophepa HCT is a relatively safe environment, voices of service providers were silent. Furthermore, factors such as awareness of hazards and risks as well as satisfaction of the service providers and service users on health and wellbeing were not measured.

Management of the Transnet-Phelophepa HCT has demonstrated commitment to the implementation of safety measures to promote health and wellbeing of the health care train community. However, not enough is known about the service providers and the users' perceptions of environments particularly those that are dynamic and variable such as the Transnet-Phelophepa HCT.

The researcher's knowledge of the Transnet-Phelophepa HCT was acquired through information in the student's reflective journals, from experiencing life on the health care train during student mentoring, and from participating in the annual plenary meetings. The need to explore factors associated with health and wellbeing on the health care train is coined around these facts: firstly, the Transnet-Phelophepa HCT is uniquely diverse, the first of its kind of health care setting in Africa. Secondly, it is a multifaceted institution that serves as a work-related health setting and a home for permanent employees and students allocated for service learning on the health train. The reality is that in this kind of setting there is an overlap between the work and non-work life environment aspects that could impact health and wellbeing. The question thus follows: what are service providers' experiences of life on the Transnet-Phelophepa HCT?

Furthermore, there is also a great deal of effort, financially and organisationally, that goes into the provision of this health care service. Most of the services provided on the health train, are services that are not easily accessible to most of the rural areas. The question that arises is: are the service users aware of the services provided on the Transnet-Phelophepa HCT? What is their opinion regarding the services provided?

The need to conduct a case study on the health care train was thus phrased around several facets of health and wellbeing on the Transnet-Phelophepa HCT.

1.3 RESEARCH PURPOSE

The purpose of this research project was to explore and describe service providers' and service users' experiences of the Transnet-Phelophepa HCT in order to make recommendations for health and wellbeing to the Transnet-Foundation and to the Ministry of Health in South Africa. The purpose of the study was achieved by implementing the objectives stated below.

1.4 OBJECTIVES OF THE STUDY

Phase 1

The objectives were formulated to facilitate quantitative and qualitative data collection, in order to determine, describe and explore aspects related to working, living and being served by the Transnet-Phelophepa HCT, as follows:

a) the safety climate as perceived by the health sciences students
b) the health sciences students' perceptions of decision latitude and social support
c) the levels and sources of work stress among permanent service providers
d) the permanent service providers' perceptions of their quality of life
e) the permanent service providers' experiences of life
f) the opinions of the service users, i.e. members of the public, about the health care they received.

Phase 2

Based on the research findings, recommendations were formulated for health and wellbeing for the Transnet-Phelophepa HCT.

1.5 THEORETICAL FOUNDATIONS OF THE STUDY

Research is a journey of investigation guided by the researcher's hypothesis or anticipated outcome, also called the central theoretical statement.

1.5.1 Central Theoretical Statement

Exploring and describing the Transnet-Phelophepa HCT community's world view of the health train environment should uncover aspects that they are satisfied with or are concerned about, which could be instrumental for the development of recommendations for health and wellbeing for the Phelophepa health train and similar projects.

The research journey is guided by a belief system, also called a world view or paradigm (LoBiondo-Wood and Haber, 2006:133). Researchers select assumptions related to the

paradigm perspective believed to be relevant for describing what reality is (meta-theoretical or ontological), the position of the researcher in relation to those being researched (theoretical or epistemological), and finally, how the evidence will be achieved (methodological) (Polit and Beck, 2012:13). Based on this knowledge, the researcher identified and adopted Imogene King's conceptual system as the paradigmatic framework guide for exploring the phenomenon studied (see figure 2.3). King's conceptual system theory (Marriner-Tomey, 1994:309) is based on individuals interacting with their environment, leading to a state of restored health for the individuals, which is an ability to function in social roles. The core business of the Transnet-Phelophepa HCT is to render a health care service that promotes and restores individuals' (that is, service users') health to function in the best possible way.

The researcher's investigation of 'health and wellbeing on the Transnet-Phelophepa Health Care Train' is embedded in the following assumptions:

1.5.2 Meta-Theoretical Assumptions

King's meta-paradigm assumption as described by George (2011:234) is that 'people are an open system interacting with their environment' and that 'nursing's goal is to help individuals and groups to maintain health'. King's meta-paradigm assumptions were applied in this study. This followed the researcher's assumption that the Transnet-Phelophepa HCT is a health care institution providing a nursing care-related service. The researcher's views of the four central concepts to the discipline of caring on the Transnet-Phelophepa HCT are stated as follows:

- **Person/Community:** In this study, persons were described as a community consisting of the service providers (permanent employees and the health sciences students) and the service users. The members of the Phelophepa train community are dynamic, bio-psychosocial beings in constant interaction with each other in the quest to attain the goal of health and wellbeing, influenced by time and space. The service providers act as facilitators of goal attainment of health and wellbeing for the service users. Furthermore, they are in a position of power and possess decision-making status. The service user is a health-seeking rural resident in the area visited by the Phelophepa train. Rural residents are independent and the majority of them work hard on local farms for their living. Due to the working circumstances and inaccessibility of health care services, health care needs often are not a priority, until the 'miracle train' arrives in that area.

- **Environment:** The term ‘environment’ generally refers one’s surroundings or natural conditions. Environment also refers to the internal factors affecting an individual. In the context of this study the environment is the space wherein the service providers carry out their day-to-day activities, as well as the space for interaction with the service users. King’s definition of environment (in Williams, 2001:2) as ‘an open system’ implies that interactions occur between person and their environment, which is in a continuous dynamic state of change. Furthermore, interaction can generate stressors.

- **Health:** King (in George, 2011:244) describes health as a dynamic state wherein the individual is able to achieve maximum potential daily living. Characteristics of health are described as genetic, cultural, subjective, environmental, functional and perceptual. King further states that an imbalance in normal functioning can lead to a state of illness (George, 2011:244). In this study the health and wellbeing of the Transnet-Phelophepa HCT community was viewed in relation to the interaction with the external environment and with one another.

- **Nursing:** According to King, the goal of nursing is ‘to help individuals maintain health or regain health’ so that they can function in their roles (George, 2011:245). King further describes nursing as a process that facilitates goal setting through the process of action, reaction and interaction, whereby the nurse and the client communicate and set goals, and explore means to achieve those goals. In comparison to these stated definitions, on the Transnet-Phelophepa HCT, the nature of nursing is defined in the community context. Health and wellbeing on the health train is the responsibility of all the service providers who are directly or indirectly involved with the community as well as the other stakeholders from the community. The health care train service is aimed at delivering comprehensive, affordable and accessible mobile health care services that are scarce or not available in many remote or rual areas in South Africa. Individuals can then access needed health care. Individuals from the community are helped to deal with illness through direct health promotion talks and the training programme offered through the Roche-funded Education Clinic on the health train.

1.5.3 Theoretical Assumptions

Theoretical assumptions contain statements about the researcher in relation to those being researched (Polit and Beck, 2012:13). The unit of analysis in this study is the Transnet-Phelophepa HCT community members' health and wellbeing in relation to their interaction with the health train environment. Health and wellbeing is based mainly on ones experiences and perceptions. The researcher used King's conceptual system in view of the fact that the main unit of analysis is the person interaction with the environment. Secondly, perception is presented as one of the major concepts of King's conceptual systems theory (George, 2011:234). This conceptual systems theory forms the basis for this scientific investigation. The theory consists of three interacting systems, namely the personal, interpersonal and social systems. King's conceptual systems theory is discussed in detail in Chapter Two.

1.5.3.1 Definition of concepts

- **Health** is described as combination of mental/psychological, physical indicators and general physical health (WHO, 1978). In the context of this study, the term health is used to establish if service providers have physical pain that prevent them from being fully functional on the Transnet-Phelophepa HCT.

- **Wellbeing** is defined as a broad construct considering people's satisfaction and/ or dissatisfaction with both life and work-related aspects. The non-work aspects are: social life, family life, recreation, spirituality and career development. The work-related factors are satisfaction/dissatisfaction with the job itself, co-workers, salary and promotion among others (www.cdc.gov).

- **Community** is defined as a group of diverse people living on a geographic location or a system or groups bound by shared needs or interest. The three main features of a community are location, a population and social system (Clark, 2008:10). In this study, Transnet-Phelophepa HCT community is described as a group of people who participate in the train as service providers or service users.

- **Service providers** refer to all the people that are directly or indirectly involved in rendering health care on the Transnet-Phelophepa HCT. The two categories are the permanent service providers and the health science students.

- Permanent service providers are the all staff members employed on the train on a yearly renewable contract. Included in this category is the locum staff members contracted for a period of at least three months.
- Health science students are all the registered students from different universities and colleges namely: optometry, nursing, dentistry, psychology, pharmaceutical fields and the tourism and hospitality industry allocated on the health care train for experiential learning.

- **Service users** are all the local people consulted on the health care train for health reasons during the period the train is stationed in their area.

- **Safety climate** refers to the workers' shared perceptions of the organisations policies, procedures, and practices related to safety in the work environment (Huang et al. 2012:45 a). In the context of this study, a safety climate instrument was used to explore the health science students' perception of management commitment to safety and the student involvement in safety.

- **Decision latitude** is described as the ability to make work-related decisions (Halpern, 2005:159). Students' perceptions of authority and control they have over how to do the work were explored in relation to the context of their work on the Transnet-Phelophepa HCT.

- **Social support** in the context of this study relates to, first the extent that the students perceive the supervisor to care about their wellbeing and achieving the service delivery objectives. Secondly, to support among colleagues.

- **The quality of life** survey in this study was conducted to assess the permanent service providers perceptions related to Global Quality of Life as well as Health-Related Quality of Life.
- **Stress** is generally associated with a state of mental or emotional strain or tension resulting from adverse or demanding circumstances. In this study the purpose of the stress survey was to assess to what extent work is stressful and the possible causes thereof.

1.5.4 Methodological Assumptions

Methodological assumptions refer to how the researcher envisages the entire process of evidence gathering unfolding. Health and wellbeing have both objective and subjective connotations as such the researcher regard both qualitative and quantitative enquiry as equally appropriate in this study. Therefore, in this study a mixed methods case study was adopted. A case study is recommended for a study of a new phenomenon. It is also suggested for a setting that has diverse study participants (Rule and John, 2011:7). The Phelophepa train is a new phenomenon in Africa and the participants are a diverse group of permanent employees, health sciences students and the service users.

1.6 OVERVIEW OF THE RESEARCH DESIGN AND METHODS

Based on the methodological assumptions, a mixed methods case study design was adopted for this study in two sequential phases. In Phase 1 a convergent parallel design was applied wherein five quantitative surveys and qualitative in-depth interviews were conducted for the purpose of exploring and describing health and wellbeing on the Transnet-Phelophepa HCT.

Two quantitative surveys were conducted on a sample of 257 health science students (n=257). The first survey explored their perceptions of the train's safety climate and the second survey determined decision latitude, supervisor support and co-worker relations. The third and fourth surveys were conducted on all permanent employees (n=19), namely employees' sources of work stress and perceptions of their quality of life on the Transnet-Phelophepa HCT. The fifth survey, which explored opinions of the health care provided on the Phelophepa train, was conducted on a sample of service users (n=124). The last component was a qualitative study exploring the permanent employees' experiences of life on the Phelophepa train. Interviews were conducted with participants (n=8) until data saturation was reached. Figure 1.6 shows the data collection process and data analysis.

The data collection methods to achieve the seven objectives of the study, the population and sampling techniques as well as data analysis are summarised in Table 1.1. The detail is presented in Chapters Four, Five and Six.

Phase 2 followed on with the seven-stage conceptualisation of the mixed methods data analysis process as shown in Figure 1.6 (Onwuegbuzie and Teddlie, 2003, in Johnson and Onwuegbuzie, 2004:22).

THE CONVERGENT PARALLEL EMBEDDED DESIGN AND THESEVEN-STAGE MIXED METHODS DATA ANALYSIS (from ONWUEGBUZIE AND TEDDLIE, 2003)

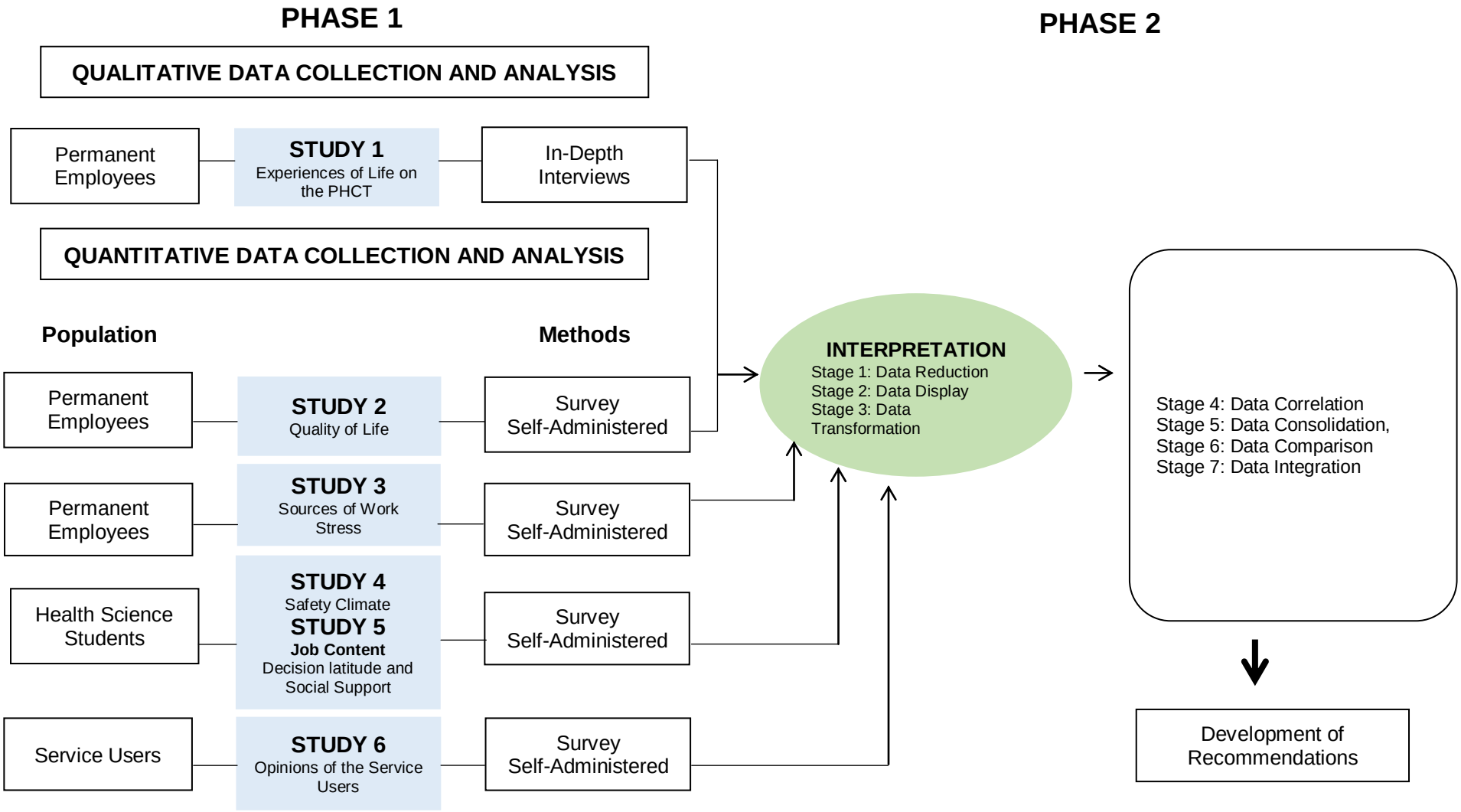


Figure 1.6: The convergent parallel embedded design & the seven-stage mixed methods data analysis (Onwuegbuzie and Teddlie, 2003)

Stage one and two involve *data reduction and data display.* Both steps were employed for analysis of both qualitative and quantitative data sets in Chapters Four, Five and Six. Tables and figures were developed and used for further description of the results. Stage three pertains to the *process of data transformation.* Thematic content analysis was applied to responses from open ended questions in section A of Chapter Five, exploring service users' opinions of health care provision. This was then followed by quantification of similar responses. Stage five to seven is related to data *consolidation, comparison* and *integration.* These steps were applied to formulate proposals and recommendations for health and wellbeing on the Transnet-Phelophepa HCT.

A more detailed description of Onwuegbuzie and Teddlie's mixed method data analysis process (2003), used in this study, is dealt with in Chapter Seven.

1.7 ETHICAL CONSIDERATIONS

There are several ethical issues that require consideration when executing the research study in order to protect participants from any form of harm and to make sure that the right information, confidentiality and anonymity are not compromised in the research process (de Vos, et al., 2005:57). In this study all ethical standards applicable to the participants, the institution and the research process were observed to ensure the integrity of the research:

1.7.1 Institutional Approval

Letters of approval to conduct the study were obtained from the Human Research Ethics Committee (Medical) (Appendix 1) and the Research and Postgraduate Committee of the Health Sciences Faculty of the Witwatersrand (Appendix 2), as well as the Transnet Foundation and the Transnet-Phelophepa HCT management (Appendix 3).

1.7.2 Participants

The following ethical aspects as described by de Vos et al. (2005:58–62) were considered so as to ensure that no harm would come to the participants:

1.7.2.1 Protection of research participants

This aspect concerns the obligation to protect study participants from any harm, including emotional harm. This involves preventing harm, not causing them any harm, and upholding their rights. Participants were provided with full and accurate information about

the study. Furthermore, they were not coerced by, for example, emphasizing the benefits of the study.

1.7.2.2 **Informed consent and deception of subjects**

Obtaining informed consent infers that participants have access to all the information pertaining to the purpose of the study and how the research process will unfold. Researchers have a responsibility of making sure that they do not deceive study participants by failing to provide adequate information, misinterpreting the facts or providing incorrect information. Study participants were approached for permission by signing a consent form following the principle of voluntarism. Participants were also informed of their rights to withdraw from the study at any time without penalty.

1.7.2.3 **Privacy, anonymity and confidentiality**

Privacy in the context of research refers to agreement between persons and limits others' access to private information (de Vos et al., 2005:61). The concept of privacy is closely associated with anonymity and confidentiality. In this study, management was unaware of the appointment times or names of the permanent service providers participating in the qualitative interviews. Furthermore, no identifying data were requested in the questionnaire, and request for demographic information was made optional due to the limited population size. In addition, the section requesting demographic data was separated from the main data collection instruments. Anonymity and confidentiality were further enhanced through the use of aliases for qualitative interviewees. Collected data and raw data findings were accessible only to the researcher and were kept in a lockable safe place.

1.7.2.4 **Actions and competency of the researcher**

The researcher has gained considerable research knowledge and skills through successful completion of a Master's Degree in Public Health and, in addition, has successfully supervised undergraduate and postgraduate students to completion. The research project was supervised by an experienced, well-recognised senior academic researcher. This research project has equal importance for the researcher and for the Transnet-Phelophepa HCT management. Therefore, care was taken to conduct the study ethically, with integrity and honesty, according to all predetermined and agreed-on arrangements and in accordance with institutional guidance.

In summary, based on the fact that this study is a mixed method study using multiple data approaches, care has been taken to discuss ethical measures related to each specific method used for each objective in Chapters Four, Five and Six.

1.8 THESIS STRUCTURE

This thesis begins by providing an orientation to the Transnet-Phelophepa HCT setting. The background and justification for conducting this particular study is provided. Chapter Two focuses on the theoretical framework adopted for this study and the related literature review, while Chapter Three deals with the study design and the research methods applied. The rationale for the chosen mixed methods approach as well as an overview of the data collection process for each objective is presented.

Chapters 4, 5 and 6 are patterned to address each of the objectives of the study. For each objective a comprehensive discussion is presented consisting of an introduction and the related data collection process is discussed. Each data set is analysed within the parameters of its own paradigm and the discussion of the findings presented for each objective.

Chapter 7 concludes the mixed methods process through merging, integration and triangulation of the findings. The process of data correlation, consolidation and integration used as part of the process of formulating recommendations for health and wellbeing for the Transnet-Phelophepa HCT is presented**.** The concluding remarks, the study limitations as well as recommendations for guidelines on health and wellbeing on the Transnet-Phelophepa HCT are presented in the same chapter. Table 1.2 shows the structure of the thesis.

1.9 SUMMARY

In this chapter the development and operations of the Transnet-Phelophepa HCT was discussed, laying a foundation towards developing a perspective of the project. The purpose of conducting the study and the problem statement were discussed as well as the objectives and the paradigmatic perspective were presented. Definitions of the concepts have been included to explain and clarify terminology used in the subsequent chapters of the thesis.

Table 1.1 is an overview of the research methods applied in the study.

Table 1.1: An overview of the research methods applied in the study

	Objectives	Sample and Sampling	Data Collection	Instruments	Analysis
PHASE 1					
Student Survey	a) Explore and describe the safety climate on the T-PHCT as perceived by students	- Students (n=666) - Convenience sampling (n=333)	Self-administered questionnaire	A 9-item safety climate measure scale	Descriptive statistics (SPSS) Bivariate analysis different categories and safety climate Qt
	b) Explore and describe the health sciences: student perception of decision latitude			An 18-item job demands, decision latitude and support scale	Descriptive statistics (SPSS) Qt
Permanent Employees	c) Determine the level of, and sources of work-related stress among permanent service providers	- All permanent staff members (n=19) - Purposive until data saturation (n=8)	Self-administered questionnaire	A 59-item sources of work stress inventory tool	Psychometric analysis – Jopie van Rooyen company Qt
	d) Describe the permanent service providers' perception of their quality of life on the train.		Self-administered questionnaire	A 26-item WHOQOL–BREF	Descriptive statistics (SPSS) Qt
	e) Explore the permanent staff members' experiences of life on the T-PHCT.		Semi-structured interviews and field notes	Interview schedule	Constant comparative analysis of interview scripts. Qt
Service Users	f) Describe the service users' opinions of health care provision on the T-PHCT.	- Accessible health clinic per week (n=400) - Convenience sampling (n=197)	Structured interviews	Structured interview guide	Descriptive statistics (SPSS) Qt
PHASE 2					
	g) Formulate recommendations for health and wellbeing.	- Data from Phase 1			Seven-stage conceptualisation of mixed methods data analysis.

Table 1.2: Structure of the thesis

	CHAPTER	DESCRIPTION		
	Chapter 1	Background and Rationale		
	Chapter 2	Conceptual Framework and Literature Review		
	Chapter 3	Research Methodology		
Phase One	Chapter 4	Students' surveys		4.1 Safety climate on the train as perceived by students.
				4.2 Students' perceptions of decision latitude and social support on the train.
	Chapter 5	Permanent employees	Surveys	5.1 Levels and sources of work-related stress among permanent service providers.
				5.2 Permanent service providers' perceptions of their quality of life on the train.
			Qualitative interview	5.3 Permanent service providers' experiences of life on the train.
	Chapter 6	Service users survey (community)		6.1 Service users' satisfaction survey.
Phase Two	Chapter 7	Data Mixing, Interpretations, Main Findings, Recommendations and Limitations		

CHAPTER TWO

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2. CHAPTER OVERVIEW

The process of generating knowledge and formulating recommendations for health and wellbeing in this study of the Transnet-Phelophepa HCT community includes identifying a theoretical framework and conducting a literature review.

The theoretical framework is used for identifying key constructs and terms of the phenomenon of health and wellbeing. In addition, the theoretical framework guides the process of identifying key aspects that should be researched and how they should be researched.

The literature search process is conducted to discover existing scientific facts related to the facets of health and wellbeing identified on the Transnet-Phelophepa HCT as well as to compare the existing data with the findings of the current study. While critical analysis of a conceptual framework is important, in this study, King's conceptual framework was used primarily to identify and arrange concepts into a group that provides meaning and direction regarding the concept of health and wellbeing in the context of the Transnet-Phelophepa HCT.

This chapter introduces King's Conceptual Systems model and literature review aspects. King's model was chosen as it encompasses three vital systems concepts that are important for the study of health and wellbeing: the personal, interpersonal and social systems. This chapter also introduces a literature review of the content explored. The first part of the literature review is related to service users' evaluation of health services. The second part focuses on the challenges of working in rural or remote areas, and other aspects that impact health and wellbeing on the Transnet-Phelophepa HCT.

2.1 CONCEPTUAL FRAMEWORK

2.1.1 King's Conceptual System Framework

Imogene King's work around the development of nursing knowledge dates back to the early 1960s. King first published her conceptual framework in 1971 and developed it further into the Theory of Goal Attainment in 1981 (Alligood and Tomey, 2006:181). King's work is considered a conceptual model since it comprises both a conceptual framework

and a theory. The conceptual model developed as a 'need for focus, organisation, and use of a nursing knowledge base'. According to George (2011:233), King describes her framework as a conceptual system with a function, to 'give support for arranging ideas or concepts into a group that provides meaning'. The central focus of King's conceptual system is the human as a dynamic being whose interaction and perception of objects, personal environment and events influences his/her behaviour, social interactions and health. King's view on human behaviour is that humans interact at three different but related levels or systems. The three interacting systems are the personal, interpersonal and social systems, each with its own distinct group of concepts and characteristics (George, 2011:234).

The central part of the conceptual system, as in Figure 2.1, shows that the main concept being investigated is the health and wellbeing of three distinct groups participating on the Transnet-Phelophepa HCT: the students, the permanent employees and the service users interacting with the environment as determined by their needs. Based on King's three interacting systems, on the Transnet-Phelophepa HCT each participating member is part of a personal system. The interpersonal system is formed when two or more people interact with others. The social system is formed when groups interact with one another, forming a community; communities reside in societies (King, 1981 in Alligood and Tomey, 2006:185).

Amongst the three systems' variables, perception is regarded as the most important variable, as it influences behaviour (George, 2011:234). King describes perception as 'each person's representation of reality'. Reality is experienced by all participants. However, the meaning will be different in any given situation as the meaning is based on how one has experienced that reality. Interpretation of reality is also influenced by one's past experiences, thoughts and feelings about self, and educational background among other aspects – the process thus lends itself to learning.

Since perceptions are universal or experienced by all, the researcher first presents scholarly perceptions of health and wellbeing, followed by the researcher's own views of who the participants on the Transnet-Phelophepa HCT are, as the phenomenon under study pertains to them. The last aspect presented is the application of King's conceptual system concepts to the Transnet-Phelophepa HCT participants in an effort to identify and validate researchable areas related to health and wellbeing on the Transnet-Phelophepa HCT.

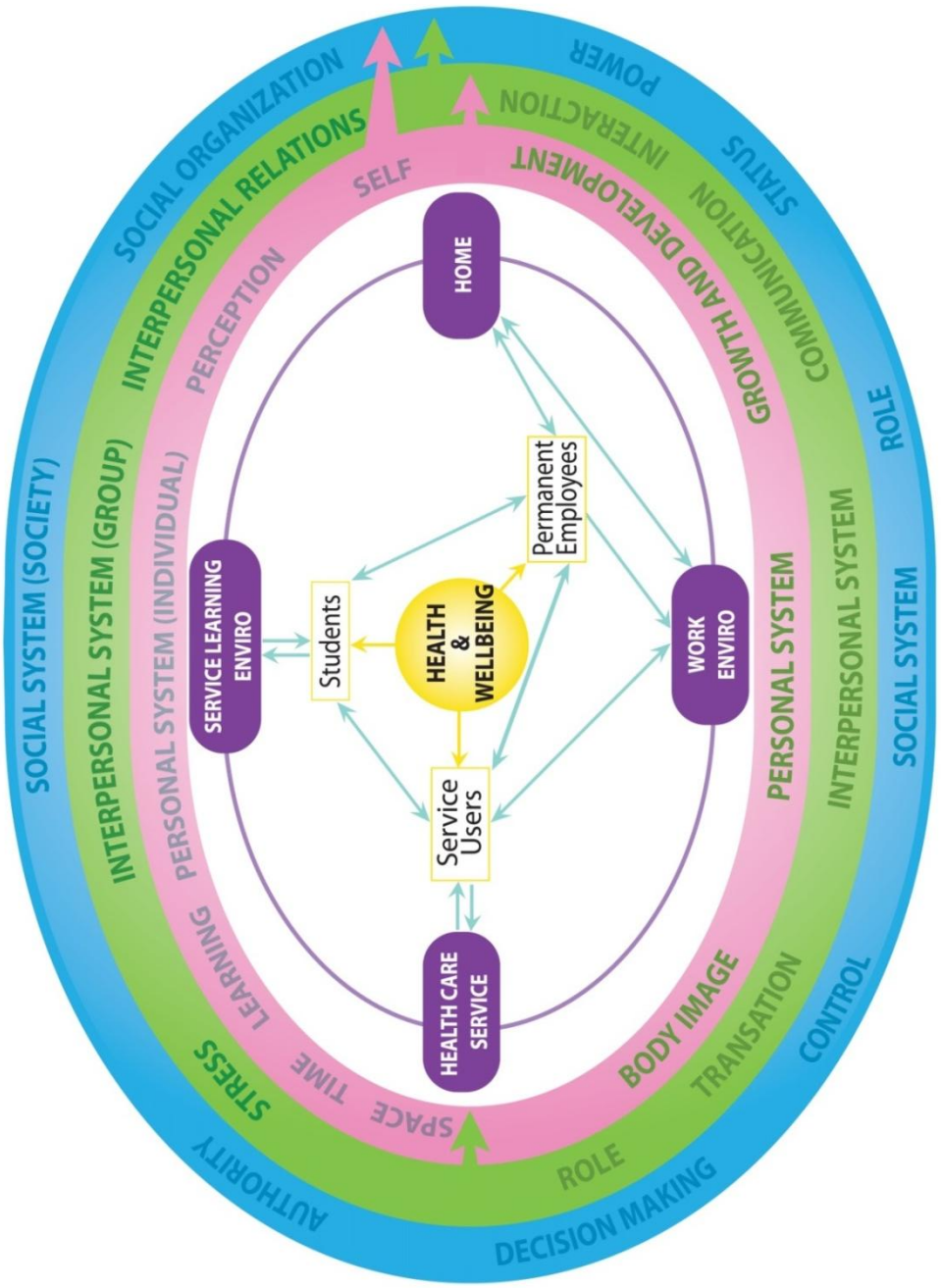


Figure 2.1: Application of King's Conceptual Systems model

2.1.1.1 **Health and wellbeing**

According to Gurung (2006:4), a psychologist, the answer to the question 'what is health?' depends on who you ask. Literature contains huge variations and definitions attached to the meaning of health. The meaning ascribed to health is influenced by a number of factors: culture, education, background and experience.

To quote a few examples noted by Gurung (2006:7), to Western medical circles the biomedical approach defines health as a state in which disease is absent. In traditional Chinese Medicine, health is the balance of two opposing forces, 'hot' and 'cold', related to the quality of life, whereas India's focus is more of a comprehensive approach as it relates to balancing mind, body and spirit.

Health psychologists, in defining what influences health and illness, pay attention to the way that thoughts, feelings, behaviour and biological processes all interact with each other (Gurung, 2006:26). The approach of psychologists is unquestionably from the mental health point of view. Psychologists Page and Vella-Brodrick (2008:2) define mental health as the presence of wellbeing rather than the absence of illness. Furthermore, the concept of mental health was used as building blocks towards developing a model for employees' wellbeing. Health in the context of these psychology researchers is interpreted as a broader concept encompassing wellbeing. This is in contrast with Danna and Griffin's review and synthesis of health and wellbeing in the late 1990s (Danna and Griffin, 1999:359). Health is seen as being a sub-component of wellbeing. Wellbeing is viewed as the broader concept comprising various aspects of life including health. In conclusion, Danna and Griffin (1999:235) describe the concept of 'health' as vague and difficult to define.

Depending on whom you ask, this also applies to the concept of wellbeing. Page and Vella-Brodrick (2008:2) state that the most important starting point in researching wellbeing should be to define the 'what' of wellbeing. A publication by the Centre for Disease Control and Prevention (CDC, 2013) states that there is still no exact definition of wellbeing, since it is a concept that involves measuring satisfaction with different aspects of life that contribute to positive living. Measuring satisfaction with life aspects is associated with the concept of 'quality of life'. However, Danna and Griffin (1999:235) do not mention the concept of quality of life in their definition of wellbeing. Nevertheless, they describe satisfaction with various aspects of life as an indication of how well one is doing. This implies quality of life.

Veenhoven commented on the lack of a clear meaning for these terms, since they are occasionally used as an umbrella term for something that is good (Veenhoven, 2000:1). Veenhoven also asserted that the evaluation of life satisfaction is an indication of the quality of life. Sirgy, Gao and Young (2008:1) conducted a study to explore how residents' satisfaction with community services influences their quality of life outcomes. Interestingly, Sirgy et al. (2008:1) refer to wellbeing as being synonymous with 'global satisfaction with one's community' as well as 'perception of community quality of life'.

The World Health Organisation defines health as a 'state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity' (WHO, 1998). Although there are some elements not mentioned in this definition, for example the spiritual, the WHO definition is a broad definition encompassing many aspects of life. The WHO (1948) states that measurement of health should include estimation of wellbeing, which can be assessed by measuring the improvement in the quality of life related to health. The WHO (1948) definition of health shows that it is used as an umbrella concept.

The above discussion supports Danna and Griffin's assertion (1999:235) that 'health' and 'wellbeing' are vague and difficult concepts to define.

This study has adopted King's interrelated system model to explore health and wellbeing on the Transnet-Phelophepa HCT. The researcher's decision was influenced by the results of a synthesis of qualitative research on wellness and illness published in the early 1990s by Jensen and Allen (1994:358). Wellness is described as a pattern of interrelationships with the body, self, environment and other factors identified as shaping the everyday lived experiences of health and wellbeing. Jensen and Allen's description of wellness (1994:358) is supported by the Episcopal Clergy Wellness Model (2006:20) that takes into account the demographic self-efficacy aspects, reflection on the individual's attitudes and behaviour in relation to others, and broad environmental aspects, with home and non-work aspects included. Wellness in the context of the Episcopal Clergy Wellness Model (2006:20) is regarded as the broadest term incorporating the past, current and desired future status of the individual's health and wellbeing.

In summary, the study of health and wellbeing is important for identifying elements that pose risks for the Transnet-Phelophepa HCT. Health and wellbeing are important because of the consequences to an individual which could impact their family, the society in general and also on their workplace.

2.1.1.2 **Community**

Participants on the Transnet-Phelophepa HCT are viewed as a community. Clarke (2008:27) describes a community as having three features: a location, a population and a social system. The permanent employees and the health science students meet the criteria of being classified as a community. The permanent employees are in a geo-spatial specific geographical location, which is an environment of residence, work and leisure. The permanent employees share their space with the health science students during the latter's period of placement for service learning. They interact with one another, and their behaviour and attitudes are regulated by a set of norms, values and social institutions. Based on the fact that they develop a life of their own that becomes meaningful, reasonable and normal on the Transnet-Phelophepa HCT, they can therefore also be described as a socially bound community. They are part of the social system as they interact and establish linkages and contacts with other organisations that have the same functions or support them. For the purpose of this study, the permanent employees and the health science students are henceforth described as the service providers.

The second group meeting the criteria for being classified as a community are the individuals presenting at the Transnet-Phelophepa HCT for a health care service. They are defined as the service users. A service user in this study is a health-care seeking rural or remote area resident areas visited by the health care train. Rural residents are independent, and the majority of them work hard for their living. Due to their working circumstances and inaccessibility of health care services, health care needs are often not a priority until the 'miracle train' is in the area. Then hundreds of rural residents flock to the train, full of hope for better health. They are therefore a community of interest orientation. Their relational bond is one of shared interest, which is to access health care (Clarke, 2008:27).

2.1.1.3 **Environment**

The environment in general is the natural world in which people, animals and plants live. In the Oxford Advanced Learner's Dictionary (2011), the environment is further described as 'the conditions that affect behaviour and development'. The human being's interaction with their environment is the key factor in King's (1981) conceptual system. King (1981) however, uses the term 'space' instead of the term 'environment'. King's focus is man's interaction with his or her immediate environment, that is, the space around them. Space is defined by physical area, known as the 'territory', and by the behaviour of those who occupy it. The other aspects related to space as described by King is that 'it may be

personal and subjective; situational and dependent on the relationships in the situation and transactional or based on the individual's perception of the situation' (George, 2011:237). The researcher's perception of the Transnet-Phelophepa HCT environment is influenced by the Oxford Dictionary's definition and to a greater extent by King's definition. In the context of this study, the environment is the space wherein the service providers carry out their day-to-day activities and where they interact with the service users.

Each participating group setting description is situational and is further described in the context of behaviour and development outcomes. As explained in chapter one, the Transnet-Phelophepa HCT is seen as a three-pronged setting. Firstly, it is a work-related and a residential setting for the permanent employees and students allocated to work on the Transnet-Phelophepa HCT. Secondly, it is a service-learning setting for health science students and hotel management students. Lastly, it is a health-care service institution for most of the people from the rural areas.

2.1.2 **King's Conceptual System Concepts**

King's interacting systems model was developed specifically for nursing in a hospital-based setting. Therefore, not all of King's concepts might be applicable in this study. Nonetheless, the researcher's belief is that majority of the concepts can be used to explore aspects related to health and wellbeing on the Transnet-Phelophepa HCT.

Based on this statement, only concepts identified to be applicable or relevant to a particular group will be explored and discussed. Noted in George (2011:234) is that the placement of King's concepts within each system is subjective as all the concepts are interrelated in terms of human-environment interaction.

2.1.2.1 **Personal system**

The personal system that King refers to is the individual. The most current concepts within King's personal system, described as fundamental in understanding human beings, are perception, self, growth and development, and body image. Other concepts described in King's earlier publications (King, 1981/1990a, 1989, 1992& 1995a as indicated by George, 2011:237) are space, time, and learning. These concepts are essential in exploring health and wellbeing on the Transnet-Phelophepa HCT.

An individual's interaction with the Transnet-Phelophepa HCT is driven by that individual's perception of self. Included in the definition of self is an awareness of oneself as being

separate from others as well as an awareness of who and what one is (King, 1981, in George, 2011:235). The definition and interpretation of self is influenced by one's attitudes, values and commitment. The process of reflection on self also includes reflection on one's body image. Body image is characterised by one's perception of the self, and is influenced by one's growth and development and genetic makeup, and by life experiences, especially those that have meaning and lead to satisfaction.

It follows that health-seeking behaviour among the service users is influenced by features of self, which are attitude and values regarding health commitment, as well as by time and space. The Transnet-Phelophepa HCT service users are mostly poor rural community members. The majority are unemployed, or employed in farming areas. For most, consulting a health service for a health problem is usually delayed due to health care services being financially or geographically inaccessible. However, many people from both near and far make an effort to come to the health train when they can, regardless of where it is stationed. For some it is a very expensive trip as there is no public transport system in their area. Some people even sleep on the platform. This is due to the perception of the value of the service. The Phelophepa train is regarded as a 'miracle train' that contributes towards their health and wellbeing.

The focus of the discussion in the personal system is the individual's interaction with the Phelophepa train. When individuals interact with one another, they form interpersonal systems.

2.1.2.2 **Interpersonal system**

The interpersonal system is the second interacting system in King's model. The relevant concepts for the interpersonal system are interaction, communication, transactions, role and stress (George, 2011:243). These concepts are essential within a relationship of two or more people working towards a common goal.

On the Transnet-Phelophepa HCT, as in any other setting, the interpersonal systems concepts are important, as the common goal for all participants is health care. In addition, the interaction – whether verbal or non-verbal – is observable in all three participating groups. The health care service outcomes and people's coping mechanisms are dependent on how effectively and efficiently interaction and communication transactions are applied. The Phelophepa train participants' application of these concepts is dependent on the individuals' perceptions of their roles. In the process of interaction all the participants

occupy a role, which in most cases is reciprocal. A person may be a giver at one time and a taker at another time. Therefore the role status in transacting takes precedence, as the concept role is also associated with a set of expected behaviour, procedures or rules that outline the responsibilities and privileges (King, 1981, in George, 2011:238). For example, the students on the Transnet-Phelophepa HCT receive updated information on an ongoing basis from the permanent service through on-the-spot teaching sessions and debriefing sessions at the end of each working day. This information in turn is used to update the service for the rural service users on the receiving end.

The permanent service providers consist of a hierarchical multidisciplinary team. The health care service transaction is dependent on the perception and understanding of the different professional's roles. In relation to authority and power, the team members are givers and takers. However, there should be clear communication on job expectations and decision-making authority to avoid problems related to role ambiguity and lack of autonomy, which could lead to stress.

How people communicate and interact is at the foundation of formulating relationships. Without a doubt, relationships defining how people relate to one another on the Transnet-Phelophepa HCT and to their families are important. Moreover, the permanent employees spend three quarters of the year working and living on the Transnet-Phelophepa HCT. Interpersonal friction at work could have a negative impact, causing stress. Stress in turn could impact on an individual's quality of life. Another factor that could affect quality of life among the permanent employees is the work/home clash; if there is a something that needs to be attended to at home, it could be neglected due to work commitments.

The permanent service providers spend most of their work and leisure time on the Transnet-Phelophepa HCT, sharing the limited space with the students. This kind of setting could alter the process of interpersonal communication and relations. The lack of boundaries leads to more and closer interaction with the students and potential loss of privacy for the permanent service providers. This may lead to students regarding themselves as equals with the permanent service providers, which may in turn impact negatively on professional interaction levels.

2.1.2.3 **Social system**

The social system is the third and final interacting system in King's model. The concepts that King identified as relating to social systems are organisation, authority, power, and decision-making, in addition to the concepts from the personal and interpersonal systems.

Social systems are composed of groups with common interests or goals in a common setting, for example, at a medical practice. Social systems provide a framework to maintain the values of a medical practice as well as strategies to regulate the practice and its rules (King, 1981 in Alligood and Tomey, 2006:185). The examples cited of social systems include peer groups, families, community groups, health care settings, workplaces, educational institutions and religious organisations.

The Transnet-Phelophepa HCT fulfils the criteria of a social system, as groups of student from different universities and colleges participate in the capacity of learning in the workplace. Permanent employees are there in a capacity of facilitating a health care service and they are like family to one another as they live and work on the Transnet-Phelophepa HCT.

Alligood and Tomey (2006:185) state that throughout the life span of human beings, they are influenced by their interactions with social systems. It is within these systems that individuals learn their expected roles, attitudes and behaviours. Furthermore, individuals' beliefs, values and customs are developed or moulded.

Organisation: King (1981) as stated in George (2011:239) describes an organisation as a structure made up of individuals who have prescribed roles and positions and who make use of resources to meet both personal and organisational goals. On the Transnet-Phelophepa HCT, as in most health institutions, there is a vision, policies and guidelines for service delivery. It is the responsibility of management to make sure that the organisational goals are communicated to all employees and students. This is to make sure that all the participants are aware of the service provision expectations. Management has the authority to give direction and to monitor processes. According to King, authority can be held by a professional with special management skills, and it can be delegated and exercised through group leadership. On the Transnet-Phelophepa HCT, authority is delegated to all, including the students. Each student group is required to nominate a person to be in charge of the group and to communicate with the respective manager of that department. The people in authority have power to reward others, sanction activities,

maintain order and facilitate team work. King (1981) states that power has a direct association with authority and it is also associated with decision-making.

Decision-making in organisations is defined as 'a process through which choices related to goals are made among identified possible activities'. The criterion for student-participation on the Transnet-Phelophepa HCT is that students must be final-year students. The assumption is that they would by then have gained the necessary professional skills and competence to function with minimal supervision, and to be able to take make choices as far as their learning is concerned on the Transnet-Phelophepa HCT. Learning is a concept that King mentioned in other publications (1981/1990a, 1989, 1992, 1995a) along with space and time. These concepts are essential for exploring students' health and wellbeing on the Transnet-Phelophepa HCT.

Space occupied on the Transnet-Phelophepa HCT is time-bound. It is based on the individual or group's expectations or responsibilities and is goal-driven. Health science students occupy the Transnet-Phelophepa HCT allocated space for a specific period of one or two weeks for learning purposes. During this period the students have to meet certain learning outcomes. Because the Transnet-Phelophepa HCT is stationed in an area for a specific limited period of time, students are expected to work at a faster pace than usual to attend to all the people who have come to the health train for a health service. Since these are senior students, they are expected to take responsibility for their learning. This expectation comes with the power and freedom to decide how they are going to do the job on the Transnet-Phelophepa HCT. The researchers' concern is: are students given the latitude to decide on how to do the work? Do they have authority and power to make decisions? What are the students' perceptions of skills used on the Transnet-Phelophepa HCT? Do they have an opportunity to perform a variety of tasks and to develop their own special abilities?

The other concern is related to the students' perception of safety on the health train; this in an environment that requires one to work at a faster pace. Do the students have control over what happens to their safety? Are safety issues on the Transnet-Phelophepa HCT communicated to the students?

2.1.3 Summary

In this section, King's conceptual systems concepts have been analysed and the core concepts of the conceptual system framework have been applied to the Transnet-

Phelophepa HCT setting. Furthermore, critical core constructs related to the context of the study on health and wellbeing on the Transnet-Phelophepa HCT were identified and used as a guide to identify key areas for the literature review (Figure 2.2).

2.2 LITERATURE REVIEW

In this section, health is discussed in the context of rural, remote or poorly resourced areas' health service provision, service users as well as the health and wellbeing of service providers.

In rural and remote areas in South Africa, accessing affordable comprehensive health care remains a challenge (Gaede and Versteeg, 2011:99). A number of strategies have been implemented to improve access to health care in South Africa. The district-based health care system was introduced for effective management of health care services.

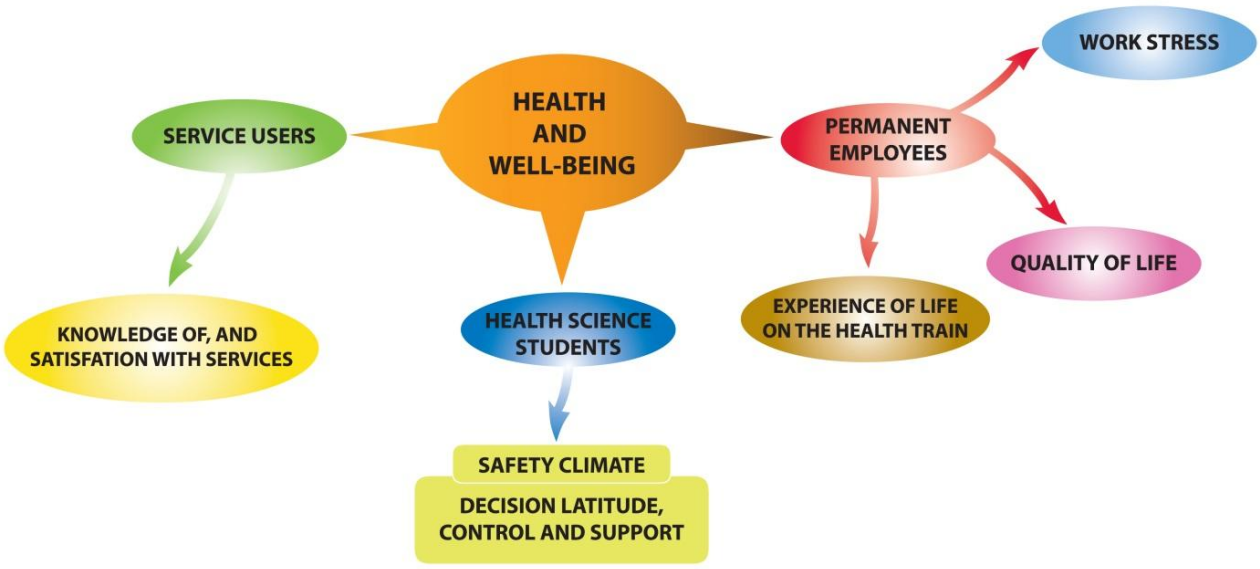


Figure 2.2: Scope of literature review

2.2.1 Rural or Remote Service Users

Policies for free Primary health care services as well as the essential drugs programme were introduced in the 1990s to ensure availability of health care services equipped with all the necessary essential drugs. In addition, a programme of hospitals renewal was introduced to ensure an effective hospital referral system (Gaede and Versteeg, 2011:99). The latest strategies introduced are the PHC re-engineering and the National Health Insurance Fund.

According to the WHO (1978), services provided should be designed to meet the needs of the communities served and should be acceptable indicating satisfaction with the services offered. The WHO (1978) also states the importance of community involvement in ensuring quality and effective health service provision as well as surveillance regarding service users' satisfaction with the services provided.

Ensuring service users' satisfaction with the services provided is an ever-more important part of primary health care, necessary to improve access to and utilisation of health services (Patro et al., 2008:250). One way of establishing service users' satisfaction with services is to engage them in assessing the services and encouraging them to give feedback, and also to provide mechanisms of forwarding the complaints as stated in the Bathopele policy and Patients' Rights Charter in South Africa (Department of Health, 2000). There are many positive factors associated with conducting service users' satisfaction surveys. Satisfaction surveys, first of all, are an important measure of the quality of health care services provided (Smith et al., 2006:594). Secondly, such surveys contribute towards developing services that are client-oriented. In order words, if services are client-oriented, then the service users are more likely to be satisfied with the health service provider and the service provided. This could lead to an increased compliance to treatment regiments and a greater likelihood of positive attitudes towards health in general. Furthermore, a deeper and longer lasting relationship with the service providers is established, as stated by Fomba et al. (2010:2). It follows that the extent to which service users are satisfied with the services provided is a key factor in determining attitude, which is one of the determinants underpinning the health and wellbeing of an individual (Smith et al., 2006:594).

Murante's doctoral thesis (2009–2010:15) on the role of patient satisfaction in health services acknowledges the value of service users' satisfaction surveys. Without these, it would be difficult to identify strengths or weaknesses in the delivery and organisation of health services. Murante also supports the views that service user satisfaction and the quality of care concepts are dynamic, multifaceted and difficult to measure and interpret. One of the issues raised is related to lack of consensus on the definition of satisfaction with health care. The second issue is that factors generating satisfaction could be influenced by the individual's knowledge and expectations, needs or desires. The last issue is that the survey instrument could be biased by being based on what the services providers consider to be important to them. Murante's doctoral study (2009–2010) confirms some of the issues raised in the literature by Patro et al. (2008) and Smith et al. (2006); it also

considers the influence of some factors on the degree of perception of quality. Several factors identified, such as the health status of the service users, their knowledge of available services, and their expectations, could influence the level of satisfaction with the services provided.

Patro et al. (2008) conducted a study in New Delhi on community perceptions and client satisfaction, and also expressed concern related to the factors that may influence the service users' perceptions of services provided. The authors are of the view that factors such as illiteracy or lack of education could affect the level of satisfaction as these factors influence the awareness or ignorance about services.

Clearly there is sufficient evidence from literature to confirm that studies exploring service users' opinions of health care service provision is an important component of evaluating public satisfaction with health services provided. Furthermore, satisfaction studies provide an opportunity for identifying and defining problems, needs and expectations.

However, there are a number of concerns raised by several authors regarding service users' satisfaction surveys. According to Murante (2009–2010:7) the models and the measuring instrument may reflect the providers' perspective. Smith et al. (2006:2) explained that most service users' satisfaction surveys are likely to focus on areas that have policy implications. Satisfaction surveys that are policy-inclined are less likely to accommodate the desires of the service users. Another concern is the likelihood of bias as perception and judgement of quality is personal, unique and highly dependent on a number of determinants (Smith et al., 2006:594).

A number of suggestions on alternatives for successful satisfaction were found in literature. One of the suggestions stated in Murante (2009–2010:15) is using both the rating scales and involvement of service users in a reflective approach wherein they have to in detail talk about their experiences of the service. Smith et al. (2006:594) propose an alternative way of monitoring consumer satisfaction about health services.

In summary, evaluating service users' satisfaction with health services is an important component of improving services. Users' satisfaction with the services provided depends highly on successful provision of functionally available, affordable and accessible health services based on the WHO (1978) principles of PHC. The WHO (1978) PHC principles are heavily reliant on and become a reality in a setting where there are sufficient numbers

of appropriately trained health service providers in terms of knowledge, skills and attitude to effectively function in a rural or remote health care environment.

2.2.2 Service Providers 'Live my Work Factors'

According to the WHO (2010:3) one of the most complex challenges is ensuring that people living in rural and remote areas have access to sufficient numbers of trained health care providers who have the necessary skills to work effectively and comfortably in these areas. There is a serious shortage of health service providers in remote and rural areas.

In study conducted by Couper et al. (2007:1084), the results showed that a health professional's decision to work in a rural or remote area is influenced by personal factors, academic factors, and financial and job satisfaction. Personal factors are related to the desire to live and work in a rural setting or dislike of the urban life. The opportunity for further studies, and job satisfaction derived from working autonomously in a diverse environment, also serve as motivation.

While some factors encourage the decision to work in a rural area, other factors could be discouraging, such as the geographical setting, availability of basic amenities, and resources for management of the health care service. In addition, issues pertaining to the job content and workload may pose a challenge to health workers choosing to go and work in remote and rural areas.

2.2.2.1 Geographical factors

Most of the remote and rural health settings are geographically isolated (Hayashi et al., 2009). A geographically isolated area is also associated with problems related to access to basic amenities.

Secondly, in many of the facilities, the health service provider works alone and is the first person or point of contact. This situation is challenging especially in a context where there are no other health professionals available. A single health service provider has to take the initiative and full responsibility of service provision. Geographical isolation could also impact career development. Often there is a lack of opportunities for growth, advancements or promotion. In some areas, health service providers have limited or no access to continuing education opportunities. Yet they are expected to excel in their jobs and provide the service comfortably and with confidence (Seright, 2011:2).

However, a positive aspect of this type of situation was reported in a study by Cioffi et al. (2010:68) regarding a multidisciplinary team caring for clients with chronic conditions in Australia. The results showed that being the main service provider played an important role in developing a trusting relationship with clients.

2.2.2.2 **Job demands**

It is well known that providers are at risk of exposure to high job strain (Demerouti et al., 2000). The challenge in many rural or remote settings is the exposure to heavy workload and strenuous long working hours. The impact of diseases such HIV and AIDS and others cause high volumes of service users to be attended to on a daily basis, and high job strain could have a negative impact on the health workers' health (Schmidt and Diestel, 2010:2). Chipeta (2014:230) confirms the association of ill health with high job strain. Other factors that may predispose individuals to ill health are factors related to heavy workload, lack of autonomy or control, and poor supervision.

Nonetheless, Schmidt and Diestel (2010:2) report that much progress has been achieved in gaining insight into the relationship between work-related psychosocial and physical risks and employee health. The most widely used and validated theoretical framework in this context is the Job Demand-Control (JDC) model developed in the 1980s (Karasek, 1979:285). Karasek's JDC model offers clarity into three factors that should be considered in investigating possible causes of psychological work-related health problems. Wood et al. (2011:2) refers to the factors in the Karasek model as the 'trinity of demands, control, and support'.

According to Karasek (1979), the workload demands present in the work environment are called 'job demands'. 'Job control' is called 'decision latitude'. The third element 'job strain' in an outcome in a setting where there is high job demands and low decision latitude. Karasek's model explains that the impact of a high job demand is dependent upon the level of control the individual has in the workplace as well as the perceived support (Karasek 1979:24).

Halpern (2005:159) further explains that exposure to high job demand does not necessarily or automatically have a negative impact on the health of the individual. The extent that an individual feels they have control over a job plays an important role in preventing ill health. An individual with control over a job feels able to devise strategies of how to do the job better or to cope with stress.

Schmidt and Diestel (2010:2) conducted a study focused on decision latitude in relation to job strain among elderly care nursing staff in 11 nursing homes located in Germany. The results showed that in nursing it is difficult to exercise one's own personal decisions and devise strategies of how to cope, especially in an environment that is managed through high bureaucratically structures and patient management protocols coupled with a problem of staff shortage.

Schmidt and Diestel (2010:2) highlight the importance of health service providers creating work environments and practices that enable them to have more control of work and devising strategies to cope. According to Karasek and Theorell (1990), having the opportunity and ability to control how one performs the task acts as a buffer against high job demands. Devising strategies of how to cope promotes well-being as well as keeping an individual motivated, learning in the process and gaining personal growth.

However, not enough is known about health service providers' perceptions of job demand, decision latitude and support, especially in environments with students placed for service learning where there is a high job demand. Cwirko (2002:67) reaffirms that since there is lack of information on workers' awareness or perceptions of the working environment, it is important to conduct studies on job demand, control and support, especially as stress causes health problems associated with high job demand, lack of control and poor social support. The service providers in a 'live my work' setting are not immune to stress.

2.2.2.3 **Occupational risks**

Since there is no work environment that is completely free from safety risks, the experiences of this kind of 'live my work' setting could pose physical, emotional or social risks for service providers. In this section, the possible risks of a 'live my work' setting are discussed in the context of possible occupational risks on the Transnet-Phelophepa HCT.

A number of research studies and occupational health textbooks have identified a wide range of possible occupational risks in a work setting. On the Transnet-Phelophepa HCT, as in any other work/home setting, there could be aspects that expose service providers to occupational risks (Colla, Bracken, Kinney and Weeks, 2005:364).

The Transnet-Phelophepa HCT service providers could be exposed to biological hazards. The service providers are exposed to different environments and communities with endemic diseases, as well as to disease outbreaks.

There is a lower likelihood of exposure to chemical hazards, as the only chemicals used are for cleaning purposes.

Ergonomic-related hazards are an important factor. Most of the Transnet-Phelophepa HCT activities have an impact on body position. Some involve standing or sitting for long hours, such as in the eye-testing department. In addition, monotonous activities could predispose service providers to fatigue as these are a daily routine.

A fourth relevant category is the physical hazards, which are agents that can cause tissue trauma or other damage (Acutt and Hattingh, 2012:152). For example, vibrations are an inevitable physical hazard associated with the Transnet-Phelophepa HCT moving from one railway station to the next. There is also exposure to different extreme temperatures, as some of the diagnostic tests, such as the vital observations and the eye tests, are done outside on the railway platform space. Physical hazards are the most prominent and common risks on the Transnet-Phelophepa HCT. Nevertheless, Garcia, Boix and Canosa (2004:240) have pointed out that in most post-industrial societies, physical environments now are much less strenuous and dangerous than before.

Organisational culture-related occupational hazards are becoming more relevant in many workplaces. Organisational culture reflects on the nature of leadership style, institutional goals, shared care and concerns. The scope goes beyond the job and task level. Factors associated with workers' ill-health and increased risk of work-place injuries, such as from heavy workload, lack of autonomy or control and poor supervision, are highlighted (Gershon, 2000:212).

An organisation's culture is a reflection of sense of the safety attained and of management's commitment or non-commitment to safety in the work place. Furthermore, safety culture has also been recognised as an important determinant of the safety and health of employees (Danna and Griffin, 1999:368). Failure to adequately address organisational culture-related aspects could predispose an individual to psychologically hazardous stress.

2.2.2.3.1 Work stress

Work stress is described as an important component and major problem of everyday life, threatening individual, organisational and societal health (Coyle et al., 2005:202). The literature has also shown that work-related stress can cause major physical, psychological and behavioural stress reactions (Coyle et al., 2005:202). In addition, stress has a great influence on employees' wellbeing (Omar, Mohd and Arrifin, 2015).

According to Yeboah, Ansong and Antwi (2014) work-related stress is a difficult concept to examine, especially in health-care professionals as they are involved in taking care of others. The concept is highly subjective and can be defined in many ways. The NIOSH (1999:3) states that it is a known fact that work stress results from the interaction of the worker and the conditions of work. However, in worker and work interaction, there should be evidence that an individual is not coping with the excessive work demands. The NIOSH (1999:3) further elaborates and explains that there is a tendency of classifying or associating a heavy workload environment with stress. Heavy workload for some individuals is a challenge that is needed for higher achievement and attainment of higher levels of skills. Therefore, developing stress as stated by the NIOSH (1999:3) depends on an individual's inability to meet work expectations.

Karasek and Theorell (1990) further explain that the main source of stress is related to exposure to stressful working conditions, high demands and the individuals' perception of these demands.

Yeboah et al. (2014) explain that although stress can be categorised as work-related, there is no single source point, and there is definite indication of a possible overlap in some areas. A possible area of overlap, as cited by Omar et al. (2015), is home and family-related stress that affects an individual to the extent of not being capable of functioning efficiently at work. Karasek and Theorell (1990) further state that the amount of decision-making required also plays an important role. In addition, Chuang and Lei (2011:551) emphasise that stress could also be related to the amount of decision–making latitude an individual has and how an individual responds to the situations' demands.

Work stress is regarded as an important component and a major problem of everyday life for most, and health workers are no exception.

According to DiGiacomo and Adamson (2001:106), work stress is a prevalent issue among health professionals, health science students and graduates upon entry into the workforce. Molassiotis et al.'s (1995) findings in Rout (2000:304) support DiGiacomo and Adamson (2001:106), regarding the prevalence of work stress among health professionals. In Molassiotis et al. (1995), the majority of health professionals were reported to have experienced problems in their personal lives that were directly linked to stress at work.

2.2.2.3.1.1 Job conditions that may lead to stress

Investigating sources of stress in health care is anticipated to be most likely difficult (McVicar, 2003:634). In the health care setting, stress could be due to both work conditions and unique pressures of the health care field (Hayashi, Selia and McDonnell, 2009:597). The primary source of stress in health care is the challenge of providing high quality care while simultaneously adjusting to both the new demands of a rapidly changing health care system and changing disease profiles (DiGiacomo and Adamson, 2001:106). Furthermore, the quality of health care rendered relies heavily on multidisciplinary teamwork, collaborative relationships and liaisons within the team and with other stakeholders (Lloyd, Mckenna and King 2005:91).

The greatest challenge in health care is that work stress does not only affect an individual employee. Stress may result in poor output performance of the team (Hayashi et al., 2009:597). Research has indicated the following factors listed below as the most common sources of stress that may impact wellbeing and the quality of life (De Bruin and Taylor 2006; Coetzee and de Villiers, 2010 and Omar, 2015).

- The Design of Tasks

  The design of tasks, work roles and conflict are three related terms indicating a work setting wherein there could be a problem between the worker and his work.

It is the responsibility of management or the person delegating a task to make sure that there is compatibility between the job design and the employee. Stress arises due to worker inability to match the task. De Bruin and Taylor (2006) state that the contributing factors to job role ambiguity are lack of information on how to do the job, a level of incompetency or excessive workload. Stress related to excessive work is reported in Lloyd et al. (2005) among social workers and occupational therapists in Australia.

- Career Advancement

  This aspect relates to stress experienced due to lack of time for further studies or other aspects that contribute to career advancement. Included in this category are poor promotion opportunities and discrepancies in salary remuneration (De Bruin and Taylor, 2006).

- Management Style

  Work stress related to management is characterised by bureaucratic constraints as well as top-down communication and lack of involvement of workers in decision-making. Mansor, Wai and Shah (2012:524) conducted a study to explore the relationship between management styles and employee wellbeing in a bank setting in Malaysia. The results showed a positive relationship between the workers and the other managers, while the branch manager was reported to be paternalistic and difficult to work with.

  McCann et al. (2009:192) commented on the association of higher levels of stress with lower employment grades in a study conducted among pharmacists. They commented that the lower grade hospital pharmacists reported higher levels of stress than management and higher grade pharmacists.

- Interpersonal Relationships

  The aspect of relationships encompasses both work and non-work relationships. Swanepoel, Strydom and Nieuwenhuizen (2010:58) are of the opinion that poor or unsupportive relationships with colleagues or management are a potential source of stress. Relational stress could also be due to little or lack of communication channels as well as the manner in which communication takes place. Communication is important between co-workers

and supervisors for support and guidance. In a setting where there is no communication, workers feel isolated. Stress is thus associated with uncertainty and mistrust.

- Work Roles

  Role ambiguity-related stress occurs when there is lack of information about requirements of the job (De Bruin and Taylor, 2006:3). Logically, where there is uncertainty about the requirements of the job, then there is a likelihood of role conflict and work overload. Community pharmacists reported role conflict, work overload and lack of autonomy in a study conducted by McCann et al. (2009:191).

- Career Concerns

  According to the NIOSH (1999:5), stress in this category is caused by uncertainty about continuing to be employed, as well as perceived lack of opportunities for growth, advancement or promotion. Another source of stress is a work setting where there are sudden changes in the workplace without sufficient consultation with and preparation of the workers.

2.2.2.3.2 Measuring stress

In South Africa, De Bruin and Taylor (2005)used the Karasek (1979) job-demands-control model to develop a General Sources of Stress Scale (GWSS) and eight Sources of Work Stress Inventory (SWSI) scales. The SWS eight subscales measure role ambiguity, relationships, tools and equipment, career advancement, job security, lack of autonomy, work/-home interface and workload. Other similar work-stressors models and inventory scales have been identified from the literature in NIOSH (1999) and Cartwright and Cooper (2002, in Jackson and Rothmann, 2006:77). Scales developed by Cartwright and Cooper (2002) and the NIOSH (1999) are comprehensive and compare well with De Bruin and Taylor's (2005) SWS inventory. All three scales were reviewed, and all have directly or in some way included the three major sources of work stress among health workers in remote or rural contexts, working in multidisciplinary teams or in community-based settings. The three common sources of stress identified are resources, role ambiguity and career advancement.

In summary, in this section the possible occupational hazards on the Transnet-Phelophepa HCT were discussed. More emphasis was placed on stress, as this is a hazard that could be experienced in a work setting and at home, as well as on the social setting of the service providers. In any setting, it is important for management to explore the people's experiences of that environment. Zohar (1980) introduced the concept of exploring safety climate in an occupational setting by involving the people concerned.

2.2.3 **Safety Climate**

The concept of safety climate is often used interchangeably with the interrelated concept of safety culture. Safety culture is defined as the product of individual and group values, attitudes, perceptions and patterns of behaviour that determine a team or organisation's commitment to safety (NHS, 2010). In simple terms, 'safety culture' describes the way in which safety is managed in a workplace.

Safety culture is based on organisational contextual factors such as leadership style and institutional goals (Gershon, 2000:212).

On the other hand, safety climate refers to the measurable components of safety culture (Zohar, 1980). Safety climate is an organisational factor commonly cited as an important antecedent of safety, as it relates to the workers' shared perceptions of the organisation's policies, procedures and practices related to safety in the work environment (Huang et al., 2012:45a).

Individuals develop workplace safety perceptions and expectations by observing the safety actions and perceptions of their supervisors and managers (Huang 2012:46 a). Therefore, perceptions of workplace safety is a reflection of the extent an individual perceives the organisation as being supportive and committed to their wellbeing and satisfaction (Gyke, 2005:298).

2.2.3.1 **Measuring safety climate**

Safety climate is typically measured using a questionnaire, and the survey results provide a 'snapshot' or summary of perceptions of the current environment or prevailing conditions that impact upon safety (Fu et al., 2006:215).

The expressed prevailing conditions are surface features of the underlying safety culture (Flin et al., 2006:110). It is for this reason that Vosoughi and Oostakhan (2011:74) perceive safety climate as a subset or an example of organisational culture. Researchers Fu et al. (2006:216) are of the opinion that safety climate is a leading indicator of safety performance. The process of surveying organisational safety-related culture is a diagnostic process. The diagnosis serves as a basis for improvement and also offers insight into the organisation's safety performance.

A range of studies have been conducted in various industrial sectors for developing and validating safety climate instruments, focusing on specific industries including manufacturing (Zohar, 1980; Brown and Holmes, 1986) and the construction industry (Dedobbeleer and Beland, 1991; Gillen et al., 2002).

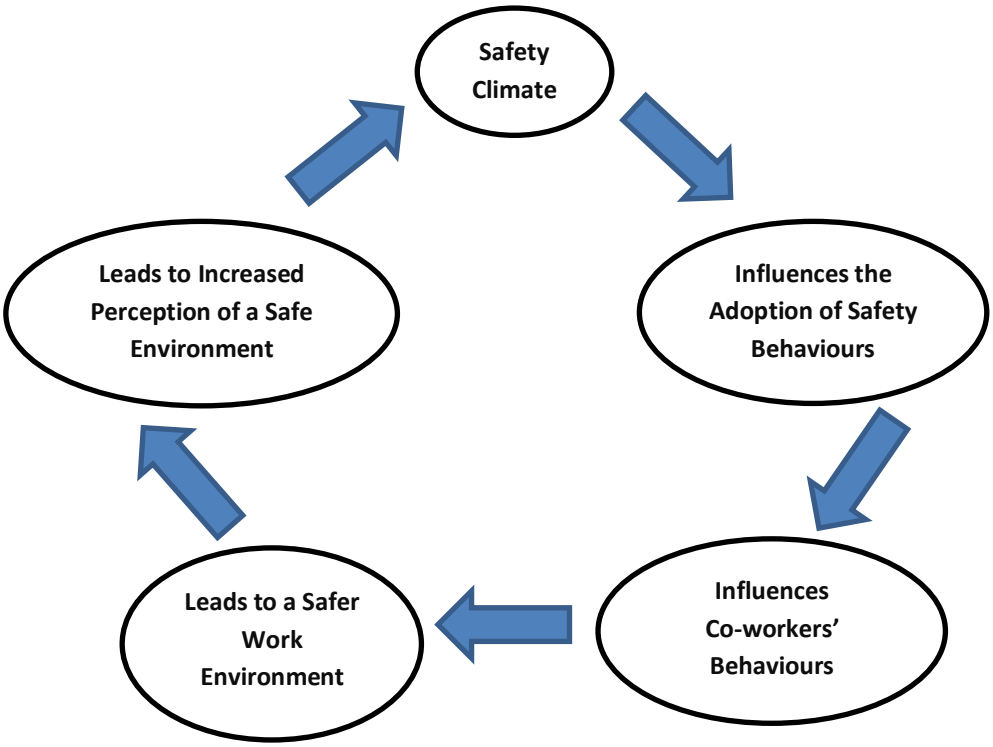
Garcia et al. (2004:240) commented on the scarcity of consultation with industrial workers on their perceptions and experiences in relation to occupational health and safety. Furthermore, there is lack of consideration of the workers' input during the designing or updating of safety programs. Thamrin, Pisaniello and Stewart (2010) further explain that understanding workers' safety perceptions and experiences would contribute towards generating strategies to reduce work-related injuries.

In response to growing concerns, organisations have started giving attention to organisational and management impacts on safety. As a result, a substantial body of research has accumulated over the past 30 years (Zohar, 2010:1517). In health care settings, studies have been conducted for validating safety climate instruments and exploring different health-related dimensions. Some of the studies conducted in health include developing a tool for safety climate (Gershon et al., 2000) and examining the psychometric properties of safety climate in health care (Flin et al., 2006; Hahn and Murphy, 2008); the dimensions of different safety levels, including patient safety (Holden et al., 2009 and Colla et al., 2005); and perceptions of health and safety management in public hospitals (Abdullah et al., 2009).

However, not enough is known about workers' perceptions of work environments, particularly those that are dynamic and variable such as on the Transnet-Phelophepa HCT.

According to the Occupational Health and Safety Act (Act 85 of 1993), the employer has a responsibility to ensure a safe work environment through detecting hazards and establishing and implementing measures of control. In the early 1990s, Reason (1998:294) alluded to the fact that the process of hazard surveillance should be an ongoing process, even when there are no hazards identified to develop an informed safety culture. Reason (1998:294) further stated that 'it is very dangerous to think that an organisation is safe because no information is saying otherwise'. The findings from Sukadarin, Suhaimi and Abdull (2012:176) revealed that although the employees have positive perceptions towards safety management systems and procedures, they expressed negative perceptions towards management's commitment to safety. These findings appear to concur with those of Reason (1998:294) relating to the importance of involving the employees in order to develop an informed safety culture.

According to Hahn and Murphy (2008:1047), information-gathering on perceptions related to safety is important as it is an indication to workers that management is concerned about their safety. Based on this activity the workers are likely to develop perceptions and expectations on safety, and are likely to develop safety behaviour and also to comply with the set standards. Sofie (2000:125) echo the sentiment that employees' perceptions about the safety of their workplace could influence their adoption of safe work practices. Neal et al. (2000:105) conducted a study at a large Australian hospital investigating the mechanism by which safety climate affects individual safety behaviour. The model developed showed that perceptions of organisational climate affected the safety climate and that perception of safety climate influenced workers' safety performance through their safety knowledge and motivation (Neal et al., 2000:105). Gershon et al.'s (2000:212) model of influence of safety climate (Figure 3.1) supports and endorses Sofie (2000:125) and Neal et al. (2000:105) regarding impact of a safety climate programme.



(Source: Gershon et al., 2000)

Figure 2.3: Influence of safety climate

2.2.3.2 **Safety climate factors**

A number of different instruments are used to measure safety climate. However, the safety climate factors included vary, as they are based on the safety model or framework adopted by the researchers. As a result, there is no consensus among the researchers regarding which safety climate factors are most important (Yule, Flin and Murdy, 2007:138). Fu et al. (2006:218) supports these views and further explains that although the factors included in the questionnaires are not the same, they are nonetheless interrelated.

A systematic and thematic content analysis of safety climate factors showed that the two most commonly included and prioritised factors were management commitment to safety and worker involvement (Dedobbeleer and Beland, 1998; Fu et al., 2006; Flin, Burns, Mearns et al., 2006).

For the purpose of this study, Dedobbeleer and Beland's (1991:102) safety climate model was adopted to guide the literature search and data collection. The model's factors are 'management commitment to safety' and 'workers' involvement in safety'. As stated in Dedobbeleer and Beland (1991:102),'management commitment to safety' comprises

workers' perceptions about management's attitude towards safety practices and workers' safety, their perceptions of the foreman's behaviour, and the availability of proper equipment and safety instructions. The second factor, 'workers' involvement in safety', is related to workers expressing the perceptions of susceptibility to injuries, risk-taking, perception of control over one's own safety, and holding regular safety meetings.

2.2.3.3 **Management commitment to safety**

Management commitment to safety is defined as 'the extent to which management is perceived to place a high priority on safety, communicate about safety issues and act on safety issues respectively' (Hamdi et al., 2015:2).

A number of studies have been conducted on employees, management or both, exploring management commitment to safety. Studies vary with regards to safety area researched, the type of industry, and the participants. Rundmo and Hale (2002) conducted a study among managers focused on safety and accident prevention. Huang et al. (2012a) conducted two studies in the restaurant industry in the USA. The first study involved restaurant supervisors and employees with a focus on perceptions in association with future injuries. The second study focused on workers' perceptions of safety training. Michael et al. (2005) explored management's commitment to safety in relationship with non-safety outcomes in the USA, and Hamdi et al. (2015) focused on safety elements for mitigating accidents in the construction industry in Malaysia.

Management commitment to safety is also described as an essential key factor of safety and a predecessor for excellence (Fu et al., 2006:215). Fu et al. explain that when management is committed to safety, then there is support for safety development and provision of all the necessary human, financial and material resources needed. Furthermore, management attitudes and behaviour towards safety has an influence on supervisors' and co-workers' attitudes to safety.

Gershon et al. (2000:212) and Fu et al. (2006) explain the importance of management commitment to safety in relation to safety culture, which is a guide as to how employees should behave in the workplace. These authors furthermore explain that if management is seriously committed to adherence to safe work practices, then workers are more likely to comply.

Some of the features of lack of management commitment to safety, as described by Hamdi et al. (2015), are: incomprehensive accident prevention programmes, poor safety development programs, insufficient education programmes as well as lack of leadership. Lack of leadership, coupled with negative attitude and behaviour to safety, could act as a barrier to workers' behaviour change and involvement in safety practices.

2.2.3.4 **Workers' involvement in safety**

The use of safety climate surveys is recognised as an effective strategy to involve workers in building an informed safety culture by getting them to reflect on management's safety attitude and behaviour, as well as expressing their perceptions about risks involved in their jobs (Fu et al., 2006:218).

Risk in general terms is described as 'a measure of the probability and severity of adverse effects' (National Safety Council, 2014:3). In relation to safety, the concept of risk is used in the context of hazards, danger and of potential harm to workers (Dedobbeleer and Beland, in Feyer and Williamson, 1998).

Acutt and Hattingh (2011:65) are of the opinion that the concept of risk is associated with the workers anticipated possibilities of the actual or predicted hazard exposure resulting in injury or illness. Risk perception is defined as the ability of an individual to discern a certain amount of risk (National Safety Council, 2014:2). Rundmo and Hale's supposition (2003:559) on studying risk perception is that it affects risk behaviour and also the probability of accidents and health injuries.

There are a number of studies showing that risk perception and behaviour are significantly associated. First of all, Rundmo's explanation (2000:1) is that behaviour and safety is dependent on the extent to which an individual feels safe or unsafe at work. The National Safety Council (2014:2) explains that an inaccurate interpretation or assumption of risk may lead to high risk behaviour.

Gershon, Vlahov, Felknor et al. (1995:231) conducted a study on compliance with universal precautions among health care workers and found that respondents with a low perception of personal risk were less likely to comply with the universal precautionary measures.

Five years later, in a follow up study for development of a tool related to universal precautions, Gershon, Karkashian and Groschetal (2000) obtained results that confirmed the relationship between risk perception and behaviour. The employees' perceptions about the safety of their hospital had significantly influenced their adoptions of safe work practices. Furthermore, the results in a study conducted in Spain (Garcia, Boix and Canosa, 2004:244) confirm and concur with the literature on the association between risk perceptions and safety behaviour. The results showed that the workers with a negative safety climate perception exposed themselves to risks at work and were less likely to comply with safety rules.

Literature reviewed confirms an association between perception, satisfaction and risk behaviour. Gyke (2005:292) explains that the frequency of accidents is influenced by the extent to which workers perceive their organisation as being 'supportive, concerned and caring' and further states that workers who were dissatisfied with management safety concerns recorded a higher accident rate. A year later, Gyke conducted a comparative study among industrial workers in Ghana. A noticeably 'positive and constructive' perception was reported among workers in the lower accident category, with the opposite for workers with high accident frequencies (Gyke, 2006:38). This study validated his views on risk perceptions.

A conclusion drawn from literature is that employees' perceptions about their safety do have an influence on safe practices as accidents often occur due to misjudgement or inappropriate decisions. Involving workers in risk perception assessment raises awareness regarding managements' commitment to safety. In addition, the workers gain knowledge related to safety expectations and their own responsibilities. Therefore they are in control of what happens to their safety. Furthermore, once the workers are aware of the most likely risk related to the hazards that they are exposed to, they are in a better position to predict the likelihood of injuries in their work environment.

2.2.4 **Life Experience and Quality Of Life**

Experience as a general concept comprises knowledge and skill gained through engaging in an activity or through an event that had an impact on an individual's life (Oxford Dictionary, 2015). As individuals engage in everyday activities, a sense of meaning of life develops. According to King's motivational, developmental and meta-model, individuals develop meaning in everyday life experiences, by developing a sense of belonging through

engagement in meaningful relationships and activities as well as gaining an understanding of oneself and the world (King, 2004:72).

People gain life experience through participating in different roles. In this study, roles are viewed in the context of work and non-work as defined in the literature on work/life balance (Greenhaus et al., 2002:512). The work-related roles are those of being an employee or a career person, spouse and/or parent (Francis, Lingard and Gibson 2004:1). Francis et al. (2004:2) explain that a role that people consider as being more significant determines their level of participation and has an impact on their work/life experience gained. The life experience stories that people share serve as a mirror of self-assessment of their perceptions regarding their present life circumstances. The life experiences mirror also reflects an individual's perception of their position in life in the context of their culture and the value system in which they live (Camfield and Skevington, 2008:765). Life experience stories have both positive and negative aspects and each person places a value on being in that particular state (Barofsky, 2011:2).

Diener (2006:400) defines one's internal judgement regarding the circumstances in which one lives, and the events happening to them physically, psychologically and socially, as a subjective wellbeing (SWB) assessment. On the other hand, objective wellbeing (OWB) is described in the context of evidence of one's material possessions and social indicators, such as opportunities for education, employment, level of income, standard of living, quality of one's social and natural environment, and one's needs. (Alatartseva and Barysheva, 2015:38; Galloway et al., 2005:20).

Diener's (2006) description of SWB sounds similar to the WHOQOL Group's (1995) definition of quality of life. The World Health Organisation WHOQOL Group (1995) defines Quality of Life (QOL) as '*individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad-ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment*.'

The fundamental features in both concepts include self-assessment of situations in which people live and the physical and psychological components of an individual. Another key important feature in these concepts is that the self-assessment valuation is based on life satisfaction or dissatisfaction.

Findings from a literature search conducted by Galloway (2006:327) showed that three out of eight studies reviewed and operationalised QOL in terms of life satisfaction. In an article titled 'Subjective Wellbeing and Quality of Life', Camfield and Skevington acknowledge that there are similarities between SWB and QOL. They also recognise life satisfaction (LS) as an indicator of QOL and SWB. However, a number of questions were raised regarding the association of these concepts, as in some literature they are used interchangeably. Furthermore, there is no clarity with regards to which concepts have an overarching impression and which ones are subordinate in valuation of perceptions regarding life circumstances (Camfield and Skevington, 2008:770).

Galloway et al. (2005:30) explain that the concept of SWB is defined and measured as both satisfaction with life in general (uni-dimensional) and satisfaction with specific aspects or domains of life (multi-dimensional). QOL is also a multidimensional concept. Compared to the SWB concept, comprehensive assessment of quality of life uses both subjective and objective components. The conclusion drawn from Camfield and Skevington (2008:770) is that SWB cannot be used synonymously or interchangeably with QOL. However, SWB and subjective QOL were assumed to be synonymous. Life satisfaction (LS) was found to be a subordinate component in both SWB and QOL, and wellbeing (WB) was described as being related to, but separate from the concept of QOL.

The question then is: how does wellbeing relate to quality of life? Veenhoven indicated that there was no consensus on the meaning and the usage of the terms 'quality of life' and 'wellbeing' (2000:5). Both terms have been used interchangeably as general terms to assess health status or people's feelings about their living conditions. In some instances, the term 'wellbeing' has been used to denote quality of life as a whole and the term 'quality of life' used for valuation of features suggestive of good living among societies (CDC,2011).

Findings of a systemic review conducted by Taillefor et al. (2003) found that the concept of wellbeing was found in 30.9% of the articles reviewed. However, wellbeing was regarded as a 'concept related to, but a separate concept from quality of life'. On the other hand, in Shalock's model (2004) as reported in Galloway et al. (2005), the concepts are described as being very closely related. However, wellbeing is assumed to be the determinant of QOL, since the definition of QOL contains three domains associated with specific aspects of wellbeing. The 'QOL domains' consists of a set of factors exploring personal wellbeing.

Galloway et al. (2005) conducted a literature review study exploring the definition of quality of life and wellbeing in the context of culture, arts and sport. An attempt was made to explore the relationship of these two concepts of QOL and wellbeing. The results from the literature review showed no consensus on the definition or on how these concepts relate, as well as how they should be implemented. This is in agreement with Shalock's (2004) definition of association. However, Galloway et al. further described quality of life and wellbeing as multidimensional, vague concepts and expressed the need for more research to clarify the nature of the relationship between these concepts (2005:10, 30).

Gullberg, Hollman-Frisman and Ek (2010:751) contributed to the ambiguity regarding QOL and wellbeing, as the definition of quality of life is based on an individual's perception regarding their position in life. However, the definition also *includes* wellbeing, happiness, satisfaction, existence, and the difference between the real and the ideal self. Alatartseva and Barysheva (2015:37) acknowledge the challenges related to definitions for the concepts of QOL and wellbeing. They further state that the difficulty is associated with inconsistency in the terminology and the assessment measures used, and the question of which of the terms is more comprehensive or serves as an umbrella term.

However, QOL is increasingly being recognised as a relevant measure in health status and health promotion research, despite the lack of consensus regarding how it should be defined and measured. QOL research has been implemented across the spectrum of primary, secondary and tertiary health prevention dimensions.

Primary prevention is stated as measures designed for health promotion in general for optimum health level or the specific protection of man against disease agents (Hattingh, Dreyer & Roos, 2011:51). The focus is on improving the overall health of individuals, families and population groups. At primary prevention level, quality of life valuations are used to identify individuals at risk for poor health outcomes through conducting individual and broad community satisfaction studies**.** Sirgy, Rahtz and Cicic et al. (2000; in Sirgy, Gao & Young, 2008:83) had developed and tested a community-based QOL measure in an attempt to elicit community-based services that could potentially put individuals at risk. The findings from the study showed that satisfaction with community services as well as with community conditions influences community wellbeing, leading to general life satisfaction with QOL (Sirgy et al., 2008:83). The latter is an example of a social indicators study that renders judgement on the major aspects of a society.

Another set of research instruments that are commonly used at primary prevention level is the WHOQOL-100 and the WHOQOL-BREF self-administered questionnaires, developed by the WHOQOL Research Group. Both instruments can be used in a variety of cultural settings exploring how 'satisfied or bothered' people are by important aspects of life (WHOQOL Group, 1995:1402).

The WHOQOL-BREF is an abbreviated 26-item version of the WHOQOL-100. The 26-item WHOQOL-BREF is described as a cross-cultural instrument that can be easily administered on both sick and healthy respondents, measuring physical, psychological, social and environment-related aspects (Skevington, Lofty and O'Connell, 2004:299). Three of the WHOQOL-BREF domains (physical, psychological and social) are related to aspects that directly affect an individual's health. The focus in this area of evaluation is similar to the domains of the Health-Related QOL (HRQOL) instruments. Both measures can be used in both sick and healthy individuals and populations. Huang, Wu and Frangakis (2006:15) conducted a study in a Taiwan population to investigate if the HRQOL Short Forms (SF) 36 and WHOQOL-BREF measured the same constructs**.** The findings showed that the HRQOL SF 36 specifically measured health-related QOL while the WHOQOL-BREF measured global QOL.

Health-related quality of life (HRQOL) is an assessment of how the individual's wellbeing may be affected by a disease or disability (CDC, 2011:2). Guyatt, Feeny and Patrick (2004:1) assert that HRQOL assessments are mostly implemented to inform patient management and policy decisions. Okunseri, Chattpadhyay and McGrath (2005:2) elaborate further by suggesting that HRQOL studies conducted to explore the relationship between socio-demographic factors have lead to a paradigm shift from just managing the presenting health problem into a holistic approach that takes into consideration all the socio-economic environmental factors that have an impact on health. In Canada, Walter, Woronuk and Tan et al. (2007:153a-e) conducted a study in three Northern Dental Outreach Clinics. The purpose of the study was to investigate the influence of various socio-demographic and clinical variables on oral health-related quality of life (OHQOL). The results showed that the clientele of the outreach service was mostly young and that missing anterior teeth had an approximately twenty-one fold greater risk of impairing Oral Health Quality of life. The results also showed a need for an individual patient-centred approach when dealing with populations in rural areas.

At secondary prevention dimension this is a period when an individual has been exposed to a disease. Research assessments are conducted for early identification of a health problem. Studies are also conducted on people who already have been diagnosed with a health problem (Hattingh et al., 2011:51). There is almost always a likelihood of an overlap in the purpose of the study at secondary or tertiary prevention levels. In most studies the purpose is to measure the impact of the disease on an individual's functional capacity and wellbeing, on their financial costs and on the population in general.

There are a number of instruments used to measure the sickness or disease impact on individuals. Among these are the Medical Outcome Study Short Forms (SF-12 and SF-36), the Sickness Impact Profile and the Quality of Wellbeing Scale (CDC (2011:2). The CDC further indicates that the HRQOL SF-36 was a commonly used instrument and is now used for finance administration, health quality assurance and data information purposes. In view of the fact that use of HRQOL instruments has been on the increase, Nemeth (2006) conducted a literature review search for the most commonly used HRQOL instruments. The results showed that the SF-36 was the most commonly used instrument, especially in studies involving spinal disease, and it has been shown to be acceptable for use in people with disabilities (Nemeth, 2006:44, 45).

Health-related quality of life studies are conducted on all aspects of health and different target groups. However, there is a scarcity of HRQOL studies exploring the health status of health personnel. Two studies were found in literature: the first one was conducted in Greek hospitals and the second among health professionals in the primary health care centres in Anatolian city in Turkey (Tountas, Demakakos, Yfantopoulos et al., 2003; Guler and Kuzu, 2009). The results in Tountas et al. (2003:5) showed that participants in Greek hospitals that were 50 years and older reported a generally better health status compared to the younger age groups. On the other hand, Guler and Kuzu (2009:1547) highlighted the socio-demographic related differences. Poorer health status was reported in nurses and midwives compared to physicians and health technicians and in women than men. These results indicate an importance HRQOL among health care personnel.

The Healthy People 2020 in literature on improving quality of life emphasises the importance of HRQOL. Wellbeing is furthermore considered a concept closely related to HRQOL as it measures factors related to positive aspects, whereas HRQOL focuses on the impact that health status has on quality of life (www.healthypeople.gov.2020).

Wellbeing is further described as ‘a resource for everyday living and a result of individual and community assets which contribute to one’s overall HRQOL’.

Based on the Healthy People 2020 definition of wellbeing, this study identified aspects of daily living, assets or areas of participation that could be used as an indicator to measure how happy people are with their health, other aspects of life, and how satisfied they are with and on the Transnet-Phelophepa HCT.

According to the Healthy People 2020 (2010), data collected offers complementary information for understanding HRQOL and wellbeing, and for suggesting areas of improvement.

2.3 SUMMARY

In this chapter, the underpinning theoretical framework used to contextualize the Transnet-Phelophepa HCT community, as well as identifying key constructs and terms of the phenomena of health and wellbeing, have been described. This was followed by literary discussion of the aspects related to the challenges of working in a rural or remote setting, including aspects that have an impact on health and wellbeing on the Transnet-Phelophepa HCT community. The next chapter addresses the research strategies implemented to achieve the objectives of the study.

CHAPTER THREE

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

The purpose of this chapter is to present and discuss the overall research strategy used to investigate health and wellbeing of the Transnet-Phelophepa HCT community. The study participant selection process as well data collection and analysis is described. The measures used to ensure the rights of the participants, and the process followed to obtain permission from the academic and the Transnet-Phelophepa HCT authorities as well as from the study participants are presented.

3.2 PURPOSE AND OBJECTIVES OF THE STUDY

The overall purpose of this research project was to explore and describe service providers' and service users' experiences of the Transnet-Phelophepa HCT in order to make recommendations for health and wellbeing on the health care train.

The following objectives were formulated to facilitate quantitative and qualitative data collection from the service providers and service users:

a) To describe the safety climate on the Transnet-Phelophepa HCT as perceived by the health sciences students.
b) To describe health science students' perceptions of decision latitude and social support on the Transnet-Phelophepa HCT.
c) To determine the levels and sources of work stress among permanent service providers on the Transnet-Phelophepa HCT.
d) To describe the permanent service providers' perception of their quality of life on the Transnet-Phelophepa HCT.
e) To explore the permanent service providers' experiences of life on the Transnet-Phelophepa HCT.
f) To describe the service users' opinions of the health care provision on the Transnet-Phelophepa HCT.

3.3 RESEARCH DESIGN

An appropriate research design was chosen to achieve the purpose and objectives of the research and to purposefully increase the researcher's control over factors that could interfere with the validity of the findings (Grove, Burns and Grey, 2013:214). In this study

the concept of research design was used to describe the entire strategy, from the problem statement to data collection and analysis.

The main consideration was to find a design that would facilitate a study of different groups of people at different levels. To answer the research questions and achieve the objectives, a convergent parallel mixed-methods case study research design was adopted (Yin 2003:43, Johnstone 2004:259). In this study the term 'embedded' is used in the context of the study participants and in describing the design.

3.3.1 **Case Study Design**

The term 'case study' as stated by Maree, Creswell, Eberson et al. (2012:75) has multiple meanings. Some authors describe it as a methodology or a type of design in qualitative research (Creswell, 2013:97), a unit of study or analysis (Rule and John, 2011:5), or a comprehensive research strategy (Denzin and Lincoln, 2005). Rule and John (2011:8) acknowledge that there are multiple definitions and types of case studies and describe the unit of analysis as an identified case that is studied. In the context of an individual, an important concept to consider would be life history. Merriam (2002:9) states that one of the features that bring out the uniqueness in the description of a case study is that it is a 'bounded system' with a clear unit of analysis.

The rationale for adopting a case study design for this particular study is based on the fact that a case study is a preferred approach for examining a new phenomenon about which very little is known (Merriam, 2002:6). Furthermore, it is a comprehensive research approach that facilitates the use of multiple sources of data in order to gain insight into the studied phenomenon, the Transnet-Phelophepa HCT. No studies have been conducted related to health and wellbeing or people's experiences of the Transnet-Phelophepa HCT. Therefore, a case study approach would facilitate in-depth study of the Transnet-Phelophepa HCT within a real life context, using multiple sources of data in order to gain insight and develop a view and understanding of aspects related to health and wellbeing on the Transnet-Phelophepa HCT (Flyvberg, 2004:22). This is an embedded case study of the Transnet-Phelophepa HCT. The embedded units are the permanent employees, the health sciences students and the service users who have experience of the unique environment (Yin, 2003:43).

Creswell, Eberson, Eloff et al. (2012:76) state that a case study is largely a qualitative enquiry, however it may also include quantitative data. This case study of health and

wellbeing on the Transnet-Phelophepa HCT used both qualitative and quantitative methods in a mixed methods approach.

3.3.2 Nature of Mixed Methods Research

In an attempt to justify the preliminary decision of adopting a mixed methods design, a literature review of the different paradigms and dynamics related to mixed methods was conducted.

On reviewing the literature, Bazeley's analogy (2002:2) of the designs shows that 'qualitative' and 'quantitative' approaches have similar distinguishing features. However, the description could just as well be based on the presumed world of meta-science (paradigms), which is the positivists or interpretive/critical, and rationalistic or naturalistic, to name a few. The purists' stance on paradigms (Guba and Lincon, 1985, cited in Greene, 2008:12) is that differences are real and they represent fundamentally different and incompatible assumptions about human nature. Therefore it is neither possible nor sensible to mix different inquiry paradigms within a single study or project. In the same publication (Greene, 2008:12), the complementary strengths stance researchers, namely, Brewer and Hunter (1989) and Morse (2003), solidified the purists' sentiments that methods should be kept separate and preserved, to maintain methodological integrity. Likewise, these researchers agree that the paradigms are different; however, they express the view that they are not fundamentally incompatible.

In relation to compatibility, Reichardt and Rallis (in Ivankova, Creswell and Plano Clark, 2010) also pronounce that quantitative and qualitative methods have enough similarities in fundamental values to allow their combination within a single study.

Commensurate with the different paradigm stances expressed, the pragmatists, according to Patton (in Greene and Caracelli, 1997:8), acknowledge that there are philosophical differences between various paradigms of enquiry. However, conversely stated, the philosophical assumptions are logically independent, therefore they can be 'mixed and matched, in conjunction with choices adopted for the study'. Consequently, a new paradigm, new movement or discourse research paradigm emerged in the 20th century in response to researchers who believed in the combination of qualitative and quantitative research, i.e. mixed methods.

According to Johnson, Onwuegbuzie and Turner (2007:118), mixed methods research has become the most used design. The term 'mixed methods research' is also referred to as triangulated, multiple-method, integrated, hybrid, combined or mixed methodology research and these terms are used by some researchers interchangeably. Denzin's publication (2010:419) on paradigms used the terms *mixed methods born anew, a new emperor; new clothes.* These comments signify the surfacing of paradigm compatibility theory, and the acceptance of the combination of qualitative and quantitative data. Johnson et al. (2007:113) conducted a study to establish how the field of mixed methods is being defined. In this project, working 'towards a definition of mixed methods research' with a neutral stance, mixed methods research is referred to as 'mixed research'. A review of the nineteen definitions and summaries in articles published by leaders in the field of mixed method research was conducted. The emerging themes from fifteen of the nineteen reviewed confirmed the popularity of a mixed method design as the type of research in which qualitative and quantitative research approaches are combined, mixed or integrated.

Based on the evidence from Johnson et al. (2007), the term 'mixed methods design' was adopted for the purpose of this study. A mixed methods approach was adopted to explore and generate an understanding of the service providers' and users' experiences related to health and wellbeing on the Transnet-Phelophepa HCT.

3.3.2.1 **Convergent parallel research design**

A convergent parallel mixed methods design was adopted for the purpose of achieving the objectives of the study. The purpose of the convergent design is to collect different data sets that contribute to the same topic. In this study, both qualitative and quantitative data were strategically collected in a simultaneous but independent manner (Creswell and Plano Clark, 2011:70).

Creswell and Plano Clark (2011:63–68) present a range of key aspects that serve as a guide in deciding on the type of mixed method design suitable for meeting the objectives of study. The four key decisions involved in choosing an appropriate mixed methods design are: the level of interaction between the strands, the relative priority of the strands, the timing, and the procedures for mixing the strands, as shown in Table 3.1 (Creswell and Plano Clark, 2011:63–68).

- Interaction

  Refers to the extent to which the strands are kept independent or interact with each other in the research process. In this study, data from the five quantitative surveys and the qualitative study interviews were collected concurrently but independently

- Priority

  Concerns the strand that is considered the most important in answering the study's questions. Although data were collected from the service providers and service users of the Transnet-Phelophepa HCT, using different types of methods, all data is regarded as equally important as it forms part of the building blocks towards developing an understanding of health and wellbeing on the Phelophepa train community. The ultimate outcome of developing recommendations for health and wellbeing of the Transnet-Phelophepa HCT service providers and service users was achieved through an integrative merging strategy.

- Timing

  Timing pertains to implementation and the relationship of the qualitative and quantitative strands in the research process. In a convergent design, data is collected simultaneously, while in a sequential design, data collection begins with qualitative data followed by quantitative data in an exploratory sequential. Elsewhere in an explanatory sequential design it is the opposite. In this study, data from the five quantitative surveys and the qualitative study interviews were collected concurrently but independently.

- Mixing

  Mixing refers to the period of combining and interrelating the study's quantitative and qualitative strands. In this study, mixing occurred during the overall interpretation. All the qualitative data sets were first analysed independently. Then, the data set from the students' quantitative surveys, safety climate and job content results were merged in order to identify decision latitude and social support related factors that may have an impact on students' experiential learning on the Transnet-Phelophepa HCT.

The next data mixing process involved merging of the permanent employees' quantitative quality of life data with the qualitative health and wellbeing data sets.

The final process involved analysing all the results of the combined safety climate and job content results, students' results, the combined results on quality of life and health and wellbeing (together with the service users), and the permanent employees' stress survey.

Table 3.1 illustrates how Creswell and Plano Clark's key decisions (2011:63–68) in choosing a mixed methods design were implemented in this study, indicating 'where and how to mix' data strands. The figure incorporates the definitions of the key areas for choosing a mixed methods design and the options adopted in order to answer this particular study's research questions.

Table 3.1: Key decisions in choosing a mixed methods design

<table>
<tr><th></th><th>Interaction</th><th>Priority</th><th>Timing</th><th colspan="4">Mixing</th></tr>
<tr><td>Research Strands</td><td>The extent to which the strands are kept independent or interact with each other in the research process</td><td>The strand that is considered the most important in answering the study's questions</td><td>Pertains to implementation and relationship of qualitative and quantitative strands in the research process</td><td colspan="4">Interrelating of the study's quantitative and qualitative strands</td></tr>
<tr><td colspan="4"></td><td>Level of design</td><td>During data collection</td><td>During data analysis</td><td>During data Interpretation</td></tr>
<tr><td>Quantitative</td><td>Independent: five quantitative surveys</td><td rowspan="2">Both equal priority</td><td rowspan="2">Concurrent data collection</td><td rowspan="2"></td><td rowspan="2"></td><td>Safety climate and JCQ</td><td rowspan="2">During data interpretation</td></tr>
<tr><td>Qualitative</td><td>Independent: one qualitative survey</td><td>QOL and HWB</td></tr>
</table>

(Source: Creswell and Plano Clark, 2011:63–68)

In summary, a convergent parallel mixed methods design was adopted for the purpose of achieving the objectives of the study. A convergent parallel mixed-methods based research design accommodates the flexibility needed to utilise components of the design required to address a set of related questions in meeting the objectives of the study (Creswell and Plano Clark, 2011:100).

A more detailed description of the approach used to achieve each of the six objectives, the related reliability and validity methods, as well as data analysis and discussion, are presented in Chapters Four, Five and Six. The process followed to formulate a recommendation for health and wellbeing on the Transnet-Phelophepa HCT is presented in Chapter Seven.

3.4 STUDY OBJECTIVES AND RELATED RESEARCH METHODS

This subsection focuses on an overview of the research methods in relation to the objectives of the study. The population and sampling strategy, the data collection process as well as data analysis for each objective are presented.

3.4.1 Health Science Students

Objectives 5(a) and (b) involve describing the health science students' perceptions of the safety climate and decision latitude and social support on the Transnet-Phelophepa HCT.

- Population and sampling

  The accessible population (n=666) included students from different health science disciplines, namely optometry, nursing, dentistry and psychology, allocated for a period of two weeks, and the pharmaceutical fields, allocated for one week. A representative sample of participants (n=333) was calculated based on a confidence level of 99% allowing for a marginal error of 5% (Raosoft, 2004). All the health science students were considered eligible for the study and were provided with a participant information letter (4.1) inviting them to participate in the study. The hotel and tourism students were excluded on the basis of them not being in the health science field.

- Data collection instrument

  A self-administered questionnaire (Appendix 4) consisting of both the Safety Climate Measure for Construction Sites and the Job Content Questionnaire scales were implemented simultaneously.

  The Safety Climate Measure for Construction Sites is a 9-item scale measuring three factors. The first factor 'management commitment to safety' comprises workers' perceptions of management's attitude towards safety practices, and workers' safety, workers' perception of supervisor's behaviour and availability of proper equipment and safety instructions. The second factor, 'workers involvement in safety', is related to

workers expressing perceptions of susceptibility to injuries, risk taking, perception of control over one's own safety and holding of regular meetings.

The Job Content Questionnaire explores aspects related to work demands, control over work conditions and social support. However, the work-related demands such as Physical exertion, Psychological demand and the Job security scales were excluded as these questions are intended for individuals in an employment capacity as opposed to students placed on the Transnet-Phelophepa HCT for experiential learning. The tasks performed on the health train are assigned according to core competencies of the different disciplines' curricula. Therefore, the focus was on Decision Latitude and the Psychological Job Demands scale.

The Decision Latitude aspect consists of two subscales (skills discretion and skill authority) and has a possible low score of 24 with a possible high score of 96. The Social Support scale has a possible low of score of 8 with a possible high score of 32; with each subscale (Co-worker Support and Supervisor Support) having a possible low score of 4 and a possible high score of 16.

- Data collection process

  Data were collected over a period of four months. The researcher travelled to where the Transnet-Phelophepa HCT was stationed and met the new students on their first day to orientate them about the study. With subsequent groups, the researcher arrived on the last day of the two weeks' allocation period and stayed on until the next Monday to meet the new group.

  Data were collected by distributing participant information letters explaining the purpose of the study (Appendix 4.1), followed by the questionnaires (Appendix 4). These were distributed every second week for the Nursing, Optometry, Dental and Psychology students and on a weekly basis for the Pharmacy students. Each had a specific code for categorisation and was numbered to ensure anonymity. In the researcher's absence, the managers of the four clinics and of the pharmacy were requested to remind students to return the questionnaires (in an envelope supplied by the researcher) and to place them in a box marked 'research box' at their respective clinics and in the pharmacy area. All the ethical requirements were adhered to as indicated in Chapter Four.

A convenience sampling strategy was used to select a sample size (n=333).

- Data analysis

  The returned questionnaires were collected from the research boxes placed in the Optometry, Nursing, Dental, Pharmacology and Psychology departments. The questionnaires were organised by numbers according to the different categories of students. The questionnaires were coded, followed by entry in a Microsoft Excel spreadsheet, and analysed using the into IBM SPSS 22 statistical package for data analysis. Descriptive statistics were then used to summarise, organise and present the data.

3.4.2 **Permanent Service Providers**

Objectives (c) and (d) area description of the two quantitative studies exploring stress in the work place and the opinions regarding quality of life, while objective (e) focuses on the qualitative data investigation of information related to experiences of life on the Transnet-Phelophepa HCT.

- Population and sampling

  The permanent service providers population (n=19) includes twelve multidisciplinary health care professionals, one dental nurse, an infection control nurse, one catering manager and an assistant, a financial manager and two general workers. No specific sampling strategy was applied for achieving objectives (c) and (d) conducted on the permanent service providers due to the limited population. Therefore, all of the permanent service providers (n=19) were invited to participate in the Sources of Work Stress and the Quality of Life (QOL) surveys.

3.4.2.1 **Source of work stress inventory**

- Data collection instrument

  A self-administered Source of Work Stress Inventory instrument was used for achieving objective (c). However the Sources of Work Stress Inventory (SWSI) is not included in this research report, as the data collection instrument is classified as a psychological test that can only be administered under supervision of a psychologist (Appendix 5 and 5(1)).

  The first part is the General Work Stress Scale, which consists of 9 questions concerning level of stress caused by work, and the second part is the Sources of

Stress scale, which consists of 50 statements regarding aspects of work that may cause stress. The Sources of Stress scale refers to eight sources of work stress, namely: Role ambiguity, Relationships, Tools and equipment, Job security, Career advancement, Lack of Autonomy, Work/Home interface and Workload.

- **Data collection process**

  All permanent service providers that had agreed to participate in the study were individually approached and provided with a participant information letter (Appendix 5.1) and handed an unmarked sealed envelope with a questionnaire (Appendix 5). They were requested to fill in the questionnaire during their spare time and to place the sealed envelope with the completed questionnaire in a box placed in the dining coach. However, on completion of the questionnaire the service providers individually handed the sealed completed questionnaires back to the researcher during a one-week period where the researcher was on the Transnet-Phelophepa HCT. A completed questionnaire implied consent to participation in the study. The researcher handed over the 17 sealed envelopes to an accredited psychologist for data analysis as per the signed agreement in Appendix 5(1).

- **Data analysis process**

  Data were entered on a Microsoft Excel spreadsheet and the raw scores were converted to McCall's T-scores (Mean=50, SD=10) for easy interpretation. Data analysis was done using the SPSS version 19. Cronbach's coefficient alpha calculations were done to assess the manner in which all participants responded to similar questions that measure a particular aspect. A one-sample Kolmogorov-Smirnov (K-S test), which is a non-parametric test, was conducted using SPSS version 19 to compare the T-scores for the group to the mean and standard deviation of a normal T-score.

3.4.2.2 **Quality of life**

Objective (d) was achieved by administering a 26-item WHOQOL-BREF tool (Appendix 6). The WHOQOL-BREF questionnaire addresses two aspects. The first aspect contains two items assessing the individual's perception of his/her Global Quality of Life and Health-Related Quality of Life. The second aspect contains four domains, which are each assessed within its own facet. The domains assessed are the Physical, Psychological, Social and Environmental.

- **Data collection process**

  The same process as described in section 3.4.2.1 was followed. However, the questionnaires were distributed during the second-last week of the Transnet-Phelophepa HCT service provision period, so that the service providers' opinions of their quality of life was based on self-reflection of the whole time period in that year.

- **Data analysis process**

  The 17 questionnaires collected were thoroughly checked for completeness before being coded into a Microsoft Excel spreadsheet using a password-secured personal computer. After data coding and input into Microsoft Excel, the data was imported into IBM SPSS 22 for analysis. Descriptive and inferential statistics were used to analyse the data.

3.4.2.3 Experiences of life on the Transnet-Phelophepa HCT

Objective (e) pertains to permanent service providers' experiences of life on the Transnet-Phelophepa HCT.

- **Population and sampling**

  A purposive sampling strategy was used to select the participants for the qualitative study. However, all the permanent service providers (n=18) met the criteria for purposive sampling as they were employed by Transnet and were working and living on the Phelophepa HCT. Therefore, they were considered as having broad general knowledge and considerable experience of the phenomenon being studied.

- **Data collection process**

  Data collection was achieved by explaining the purpose of the research (Appendix 7.1) and obtaining consent (Appendix 7.11) and then collecting data through individual in-depth interviews using a semi-structured interview guide (Appendix 7). The interview guide consisted of one main question and several probing questions to expand on and clarify aspects related to working and living on the Transnet-Phelophepa HCT.

- **Data analysis**

  Thematic content analysis was used for data analysis of the experiences of the permanent service providers. Each of the interviews from the audio recordings was transcribed verbatim.. Transcripts were read and analysed and the most descriptive wording was identified and sorted into categories and themes. The process of thematic analysis used to identify and categorise the data that describe the experiences of the Transnet-Phelophepa HCT permanent service providers is described in detail in Chapter Five.

3.4.3 Service Users

A single study was conducted among the service users to explore the service users' opinions of the health care provision on the Transnet-Phelophepa HCT as in objective (f).

- **Population and sampling**

  The target population for this survey was all the service users who presented themselves for health care consultation in the fifth week in a location where the Transnet-Phelophepa HCT was stationed for 6 weeks. The population size was determined based on the assumed weekly accessible population in the province where the Transnet-Phelophepa HCT was stationed. Convenience sampling was used to select the study participants. For the purpose of this survey the assessable population is sample (n=400) of adult service users attending the health clinic on a weekly basis.

- **Study Population and Sample**

  The researcher's intention was to access the service users presenting at the pharmacy department at the end of the consultation process. Some service users were excluded in consideration of procedure-related discomfort and pain. The majority of the Optometry service users were also excluded as they left immediately after they had their eye glasses dispensed. The other service users excluded were people who came in organised transport such as taxis or hired cars. The researcher used a non-probability convenience sample to access a sample size of 124 (n=124) service users who participated in the study in a period of one week.

Data Collection

- **Data Collection Process**

Data were collected during the fifth week of the Transnet-Phelophepa HCT service provision period. The researcher travelled to where the Phelophepa train was stationed. Every morning the researcher addressed all the service users sitting in the waiting areas of the different clinics after the clients' service registration process. Service users were verbally provided with information about the study. The service users were then approached again after consultation at the pharmacy medication dispensing coach. (This is where the cashiers are stationed and all service users go through to this point for payment for the service.) Then, service users were approached individually, and participant information letters explaining the purpose of the study (Appendix 8.1) were provided. Service users agreeing to participate were requested to sign the consent form

and then invited to the tent that was used specifically for data collection. A convenience sampling strategy was used to select a sample size (n=197) of service users. Service users that had dental extraction as well as those that were very sick were excluded from the study. Service users who were not included in the study were scholars below the age of sixteen and some dental and optometry service users due to the service flow plans. Approaching service users that were at the pharmacy coach that met the inclusion criteria is described as a non-probability convenience sample (Grove et al., 2013:362).

Data were then collected through one-on-one interviews conducted by the researcher using a questionnaire with both open-ended and close-ended questions (Appendix 8), with interviews being conducted over a period of one week.

- **Data analysis**

The interview schedules were checked and numerically organised, then coded. Data were entered on Microsoft Excel software and analysed using the Statistical Package IBM SPSS 22. Descriptive statistics were used to summarise, organise and present data. The findings relate to the research objectives and are presented in four sections according to the interview questionnaire.

Open-ended questions were analysed using the qualitative content analysis process, whereby the researcher read the responses several times. Similar words and concepts were identified and colour-coded in order to derive an understanding of the opinions and concerns presented regarding the service provision on the Transnet-Phelophepa HCT.

3.5 VALIDITY AND RELIABILITY

Validity and reliability are measures applied for the purpose of ensuring good quality and reliable research data during the collection process, data analysis and interpretation of the results (Creswell 2011:210). These measures are applicable to quantitative as well as qualitative approaches. However, the focus and application is dependent on the research approach applied in the study. Qualitative researchers focus on the realistic account of the research process with care taken to make sure that the process applied is correct and can be trusted (Creswell 2011:210). On the other hand, quantitative researchers focus mainly on the instrument used for data collection as well as the quality of the scores and the conclusions drawn (de Vos et al., 2005:160).

3.5.1 Trustworthiness in Qualitative Research

In qualitative research, the value of the findings is measured through the strategies of trustworthiness (Shenton, 2004:63). Lincoln and Guba's (1985) model of trustworthiness is based on identification of four aspects of trustworthiness: credibility, dependability, transferability and confirmability. A detailed description of how the measures of trustworthiness were implemented is described in Chapter Five (5.7.2.2.1).

- **Credibility**

  Three strategies: prolonged engagement with the participants, peer examination and member checks were implemented to enhance credibility of this study. Prolonged participant engagement during the data collection process afforded the researcher an opportunity to identify recurring concepts, themes and to reflect on what has been achieved in terms of gaining understanding of experiences of life on the Transnet-Phelophepa HCT. An independent coder was consulted for validation of the results. Member checking was done for clarification with the service providers during the data collection and analysis as well as the formulation of recommendations for health and wellbeing on Transnet-Phelophepa HCT.

- **Transferability**

  Transferability of the research process is maintained through a thick description of the purposively selected study participants as well as a very detailed description of the results. The description of the results is supported by direct quotations from the participants and applicable literature.

- **Dependability**

  The strategies of ensuring that consistency was applied in this study included supplying an in-depth account of the data collection process, how the audiotapes were transcribed, and how raw data were analysed. Furthermore, an independent co-coder was consulted to audit the data and assist with objectively analysing it.

- **Confirmability**

  A detailed methodological description was presented in this chapter to enable the reader to make a value judgement regarding the extent to which the emerging results can be accepted.

3.5.2 Validity and Reliability

Validity and reliability are concepts that are used in quantitative studies to measure the extent of the accuracy and consistency in measuring the phenomena studied (Polit and Beck, 2012:236). Reliability measures of an instrument can be achieved through conducting a pilot study to test for inter-rated reliability among researchers and also for testing internal consistency (Cronbach) of the data collection instrument. On the other hand content validity can be achieved through presenting the research proposal and the instruments to a panel of experts.

Based on the fact that this study is a mixed methods study that consists of five quantitative studies, the reliability and validity strategies implemented in this research project are integrated in the discussion of the data collection and analysis process in Chapters Four, Five and Six.

3.6 ETHICAL CONSIDERATIONS

Research ethics provide guidelines on how to conduct research in a morally acceptable way. Basic ethical measures must be taken to protect participants from any form of harm. These are described below.

3.6.1 Institutional Permission to Conduct the Study

- Ethical clearance was granted by the University of the Witwatersrand Committee for Research on Human Subjects to ensure ethical compliance (Appendix 1).
- Permission to conduct the study was granted by the Research Postgraduate Committee of the Health Sciences Faculty of the University of the Witwatersrand to ensure compliance with academic standards (Appendix 2).
- Permission was sought from and granted by the Transnet Foundation and the Transnet-Phelophepa HCT management to gain cooperation with regards to availability of the service providers at suitable times to avoid disruption of the services Appendix (3).

3.6.2 Data Collection Instruments

- A letter of approval was obtained regarding use of the modified Safety climate and Job decision latitude and support instrument (Appendix 4.II).
- Permission was sought and granted for use of the Sources of Work Stress Inventory (Appendix 5.II).

- Permission to use the WHOQOL-BREF Quality of Life instrument was obtained by submitting the researcher's personal data and the purpose of the study to the WHOQOL website. Access to the QOL manual and the questionnaire implies permission to use the tools.

Based upon the fact that this study is a mixed method study using multiple data approaches, care has been taken to discuss ethical measures related to each specific method used for each objective.

3.6.3 Consent By Participants

3.6.3.1 Quantitative research

Participant anonymity was maintained by separating questionnaires from the demographic information sheets. Furthermore, the questionnaires were numbered for data analysis administration purposes. The names of the participants did not appear anywhere on the questionnaires (as these were not requested nor was space provided). Finally, the questionnaires were returned in a sealed envelope by the permanent service providers. However, for the service users, the data collection process was managed by the researcher. Completed questionnaires were accessible to the researcher only and kept in a safe lockable place.

To uphold the principle of voluntarism, participants were informed of their participation being voluntary and of their right to withdraw from the study at any time without consequences. Information about the study was disseminated and the permanent employees, health sciences students and service users were invited to participate in the study. The procedures to obtain permission are described.

Health Sciences Students

- Students were provided with a student information letter (Appendix 4.I) for the Safety Climate questionnaire and Decision latitude and Social Support surveys. A returned, completed questionnaire was considered as granting of consent to participate in the study.

Permanent Employees

- Permanent service providers were provided with information sheets explaining the study purpose of the two quantitative surveys and inviting them to complete self-

administered questionnaires (Appendix 5.I) as part of the Sources of Work Stress Inventory and (Appendix 6.I) the Quality of Life survey.

Service Users

- Informed and written consent was obtained from the Transnet-Phelophepa HCT service users (Appendix 8.I and 8.II).

3.6.3.2 **Qualitative study**

Permanent service providers were invited to participate in a qualitative study exploring their experiences of life on the Transnet-Phelophepa HCT. They were provided with an information letter (Appendix 7.I) explaining the purpose of the study and requesting permission to record audio interviews (Appendix 7.II).

Aliases were used for anonymity, to protect identities. Participants were informed that taped interviews and transcriptions would be kept in a locked cupboard for safe-keeping and to ensure confidentiality.

3.6.4 **Literature Resources**

- The use of primary and secondary sources for document review was acknowledged according to academic and scholarly requirements. Anonymity and confidentiality were assured and maintained during data collection, analysis and reporting of the research results.

3.7 SUMMARY

This chapter provided a detailed account of the research design and methods. The methods used were described in detail in relation to the objectives of the study. The ethical considerations that were implemented by the researcher during the course of the research were highlighted. A brief account of the measures implemented ensuring good quality and a reliable research process have been described. The next three Chapters: Four, Five and Six concern the specific research methods, results and discussion for each of the research objectives.

CHAPTER FOUR

HEALTH SCIENCE STUDENT SURVEYS: RESEARCH METHODS, RESULTS AND DISCUSSION

4.1 INTRODUCTION

The focus of this chapter is on the research studies conducted among the health science students working on the Transnet-Phelophepa HCT. The students are key service providers on the Transnet-Phelophepa HCT. They are part of the service provision team and work in a multidisciplinary environment, supervised by health professionals in the different clinics and the pharmacy department.

Two surveys were conducted with health science students in five of the six on-board operational clinics and outreach programs. The first survey was to explore students' perceptions of the safety climate while the second survey sought to gain an understanding of students' perceptions of decision latitude and social support, also referred to as job content, in relation to the context of their work on the Phelophepa train. In this chapter the research methods and results of the survey are presented, followed by a discussion of the survey findings. An overview of the safety climate and job content variables is provided.

4.2 SAFETY CLIMATE

Health science students on the Transnet-Phelophepa HCT, as in any clinical experiential learning setting, work within an environment that could unintentionally expose them to occupational hazards. The obligation of the management of the Transnet-Phelophepa HCT is to ensure a safe work environment as stated in the Occupational Health and Safety Act (Act 85 of 1993). Furthermore, management has the responsibility to ensure that strategies for monitoring and evaluating safety measures are in place.

The involvement of workers in evaluating safety at the workplace thus contributes towards developing an informed safety culture is well known (Health and Safety Executive 2010:6). Involving workers in safety climate assessment raises awareness among workers regarding management commitment to safety (Hahn and Murphy, 2008:1047). In addition, worker involvement helps them develop safety behaviours as they become aware of the basic aspects that should be considered for a safe work environment (Health and Safety Executive, 2010:3)

Not enough is known about service providers' perceptions of safety in their work environments, particularly those that are dynamic and variable such as on the Transnet-Phelophepa HCT. All nineteen permanently employed members are either in management positions or in roles that include managing a project; thus, they are all involved in some aspect of ensuring a safe environment on the health train. Therefore, in this context the students were regarded as the best possible participants to be included in a safety climate-related study on the Transnet-Phelophepa HCT.

4.3 JOB CONTENT

Health science students from various institutions across South Africa participate in service learning health activities on the Transnet-Phelophepa HCT. Learning takes place through participation in rendering health care services under the supervision of professional health care providers, both on the health train and through visits to schools. The clinic managers and other permanent employees monitor and supervise the students' performances and help them develop their clinical skills.

The setting on the Phelophepa train requires that students work harder and faster due to high patient numbers, increased patient activity levels, and higher prevalence of different health problems that service users present with. Hence, it is important that the health science training institutions adhere to the criteria of ensuring that students selected to go on the Transnet-Phelophepa HCT are in their final year of study, and furthermore that they have been adequately prepared for clinical placement.

The work setting in this study is similar to that reported by Johnson and Blinkhorn (2011:5) regarding a rural placement program for dental undergraduates in Australia. The dental students expressed that they worked in a heavy workload setting and as a result they had to work faster to make sure that all the patients were attended to. In a high demand job setting, supervisors may become anxious and stressed and start deciding how the job has to be done.

In most cases in this situation, the student has no control over the job; decisions are taken by the supervisors. Wood, Stride and Threapleton et al. (2011:1) state that high demand jobs with low decision latitude and a low level of control and support could have a negative impact on individual worker wellbeing. There is also evidence in literature that confirms the association between ill health and work-related aspects such heavy workload, lack of autonomy, control or poor supervision (Chipeta, 2014:230).

It is in this context that the researcher sought to gain an understanding of students' perceptions of authority and how much control they have over how to do their work, as well as the social support in the context of their work on the Transnet-Phelophepa HCT.

4.4 RESEARCH METHODS

A quantitative descriptive design was used to collect data regarding health sciences students' perceptions of the safety climate and decision latitude and social support on the Transnet-Phelophepa HCT (Grove et al., 2013:216).

4.4.1 Study Population and Sample

The accessible population consisted of all the health science students (n=666) allocated on the Transnet-Phelophepa HCT in the year that the study was conducted. The Optometry, Nursing, Dental, and Psychology students from different colleges and universities in South Africa are the main health care service providers, supervised by different clinic managers on the Transnet-Phelophepa HCT.

Non-probability, convenience sampling was applied with the goal of achieving a sample size (n=333) from all health sciences students allocated for service learning on the Transnet-Phelophepa HCT. The sample size was calculated based on a confidence level of 99% allowing for a marginal error of 5% (using the calculator at www.raosoft.com). All the health science students were considered eligible for the study and were provided with a participant information letter (Appendix 4.1) inviting them to participate in the study. The hotel and tourism students were excluded on the basis that they are not in the health science field, and because they are allocated on the train for a period of up to six months. A total of 35 health science students are allocated on the Transnet-Phelophepa HCT for a period of one to two weeks.

4.4.2 Data Collection

4.4.2.1 Data collection instruments

There was no existing data collection instrument found to measure safety climate and student learning on a mobile health care service. As such Gillen et al. (2002) self-administered questionnaire was adapted for this study. Gillen et al. (2002) modified and used Dedobbeleer and Beland's (1991:97) Safety Climate Measure for Construction Sites as well as the Job Content Questionnaire (JCQ) in a study exploring perceived safety climate and job demand, and co-worker support among construction workers in the USA.

4.4.2.1.1 Safety climate measure for construction sites

The Safety Climate Measure for Construction Sites is a 9-item scale. The Safety Climate Instruments in industry organisations were initially developed by Zohar (1980). Zohar's (1980) model as described by Dedobbeleer and Beland (1991) included the following eight dimensions: (a) importance of safety training programs; (b) management attitudes toward safety; (c) effects of safe conduct promotion; (d) level of risk at workplace; (e) effects of required work pace on safety; (f) status of safety officer; (g) effects of safe conduct on social status, and (h) effects of safety committee. Brown and Holmes (1986) validated the model on a sample of American production workers and the model was reduced to a three-factor model. Employee perceptions of management concerns and safety activities, as well as physical risk perception, were retained.

Further validation of Brown and Holmes' (1986) three-factor instrument designed for production workers was conducted by Dedobbeleer and Beland (1991:101). The three-factor model consisting of a 9-item scale was tested on construction workers. The weighted least-squares model as described by Gillen et al. (2002) was used to test the three-factor model against the two- factor model. From the results, the 9-item scale was retained and no significant difference was found between the two-factor and the three-factor model (Dedobbeleer and Beland, 1991:102). However, the two-factor model comprising perception of 'management commitment to safety' and 'workers' involvement in safety' was found to be an overall better fit for describing safety climate on the Transnet-Phelophepa HCT.

The first factor 'management commitment to safety' as stated in Dedobbeleer and Beland (1991:102) comprises workers' perceptions of management's attitude towards safety practices, and workers' safety, workers' perceptions of foreman's behaviour and availability of proper equipment and safety instructions. The second factor 'workers involvement in safety' is related to workers expressing their perceptions of susceptibility to injuries, risk taking, perception of control over one's own safety and holding of regular meetings. Table 4.1 provides a summary of the factors included in the questionnaire.

Table 4.1: Summary of factors, their description, total number of items and the rating scale

Factor	Number of Item	Description	Rating Scale
Management commitment to safety	4	Perceptions of management's attitude towards safety practices	1=very important to 3=not at all
		Perceptions on emphasis placed on safety practices	1=regularly and frequently 4=never
		Perceptions of action taken to ensure students 'safety	measured by an itemised rating scale ranging from 1 – 3
Student involvement in safety	4	Students' perception of the availability of proper equipment Safety instructions refer to the student's self-reported exposure to safety instructions on arrival Presence of regular meetings	1=always to 5=never yes or no tick yes or no tick
		Perception of control over their own safety on the job	1=almost no control 3=little control
		Perception of risk taking	1=very much to 3=not at all
		Perceived likelihood of injuries	1=very likely to 4=not at all likely

4.4.2.1.2 Job content questionnaire

There are several versions of the Job Content Questionnaire (JCQ). The instrument is based on a model that measures job strain based on the work demands, control over work situations and social support. The questionnaire scales have been used to predict job-related stress and likelihood of stress-related coronary heart disease in the United States of America (1982). The scales are also relevant for studies of worker motivation, job satisfaction, absenteeism and labour turnover. The recommended 49-item JCQ instrument consists of seven scales. The scale items in the questionnaire are scored using a four-point evaluation scale: from 'strongly disagree' or 'disagree' to 'agree' and 'strongly agree'.

In this study, only the Decision Latitude and the Social Support scales were applied in the study of Phelophepa train students. The questions on physical exertion, psychological demand and job security were excluded as these questions are intended for individuals employed in a full-time capacity as opposed to students placed on the train for a short period of experiential learning. The tasks performed on the health train are according to the different disciplines' curriculum core competencies.

The scales used in this study are described below:

- Decision Latitude consists of two subscales: skills discretion and skill authority, with a possible low score of 24 and a possible high score of 96.
- The Psychological Job Demands scale has a possible low score of 12 with a possible high score of 48.
- The Social Support scale has a possible low of score of 8 with a high score of 32; with each subscale (Co-worker Support and Supervisor Support) having a possible low score of 4 and a possible high score of 16.

4.4.2.1.3 Reliability and validity of the instruments

The reliability validity process of the Safety Climate and Job Content instruments were conducted simultaneously. The items on the questionnaire were reviewed by the researchers in this study and the wording was slightly modified to suit the health care setting. No changes were implemented on the Job Content instrument during and after the pilot study. However, changes made to the Safety Climate instrument included:

- changing the word 'foreman' to 'clinic managers';
- changing 'employee/worker' to 'student';
- changing 'perceived likelihood of injury in the next 12 month period' to 'period of placement'.

The Safety Climate and Job Content questionnaires were not separated; hence, the pre-test was conducted on the same sample of students (n=28). Section A recorded the following demographic data: age, gender and category of the health science students. Section B explored the health science students' perceptions of safety climate, and Section C explored the health science students' perceptions of decision latitude and social support on the Transnet-Phelophepa HCT.

The researcher travelled to where the Transnet-Phelophepa HCT was stationed. Permission was obtained from the managers of the different clinics to address the students in a group or individually. Students were provided with information about the study (Appendix 4.1) on the first day of placement. Subsequent to this, those who agreed to participate were requested to fill in the questionnaire (Appendix 4). The instrument pre-test process was conducted among students allocated to the Phelophepa Health train for research for a period of two weeks. The responses were analyzed to test for suitability of the modified questions, understanding of the

terms, and the length of the questionnaire as applied to a health setting. In addition, Cronbach's alpha was used to test for internal reliability of the two scales.

The Cronbach's alpha coefficient for the 9-item Safety Climate scale was 0.81. The result compared well with Baltz, Gassel, Kirsch and Vaccaro (2002) and Gillen et al. (2002). Cronbach's reliability tested 0.78, and construct validity was 0.95.

4.4.3 Data Collection Process

The health science students were categorised according to their professional orientation, and data were collected once during their period of placement for clinical service learning, as suggested by Grove et al. (2013:221). The two scales were implemented simultaneously as in Gillen et al. (2002), on the same population and sample of health science students. The results of both surveys are presented in two separate sections. The Safety Climate survey results and the decision latitude and social support are presented in sections 4.6.2 and 4.6.3 respectively.

Data were collected over a period of four months. The researcher travelled to where the Transnet-Phelophepa HCT was stationed, to meet the new students on their first day to orientate them about the study. With subsequent groups, the researcher arrived on the last day of the two-week allocation period and stayed on until the next Monday to meet the new group. Letters explaining the purpose of the study (Appendix 4.I), and the questionnaire (Appendix 4), coded for categorisation and numbered to ensure anonymity, were distributed every second week for the Nursing, Optometry, Dental and Psychology students, and on a weekly basis for the Pharmacy students. The managers of the four clinics and of the pharmacy were requested to remind the students to place the questionnaires in the 'research box' in their respective clinics and in the pharmacy area. All ethical requirements were adhered to as indicated in Chapter Three.

4.5 DATA ANALYSIS

The returned questionnaires were collected from research boxes placed in the Optometry, Nursing, Dental, Pharmacology and Psychology departments. The questionnaires were organised by numbers according to the different student categories. The questionnaires were coded and entered into Microsoft Excel spreadsheets and analysed using the Statistical Package SPSS 22 in consultation with a statistician. Descriptive statistics were then used to summarise, organise and present the data. Data was collected from 257 health science students who returned the questionnaires, except where indicated.

4.6 RESULTS

4.6.1 Demographic Data

A total of 257 out of 333 questionnaires were completed, yielding a response rate of 77.2%. The majority of the students were aged between 20 and 24 years (68.09%, n=175); 23.73% (n=61) were between 25 and 29 years and 8% (n=21) were between 30 and 46 years. The mean age of all the student respondents was 24 years (SD=4.74).

Table 4.2 displays the distribution of gender and professional category of health science students who participated in the study. Optometry students constitute the highest proportion of the sample (27.2%, n=70) while the least represented sample was the psychology group (10.5%, n=27). The majority of the students were female (66.9%, n=172), and the majority of the female respondents were nurses (85.5%, n=59). On the other hand, males were in the majority in the Pharmacy group (57.1%, n=16).

Table 4.2: Distribution of gender and professional category of the sample (n=257)

Gender		Optometry	Nursing	Dental	Pharmacy	Psychology
Male	85 (33.1)	34 (48.6)	10 (14.5)	24(38.1)	16(57.1)	1 (4)
Female	172 (66.9)	36 (51.4)	59 (85.5)	39(61.9)	12(42.9)	26 (96)
Total	257	70 **(27.2%)**	69 **(26.9%)**	63 **(24.5%)**	28 **(10.9%)**	27 **(10.5%)**

The majority of the students (85%) were in the 20–29 age group, and the majority (67%) were female. Safety climate scores were not related to personal variables such as age and gender. However, the literature has evidence of association between safety climate scores, age, gender and employment status. Studies by Garcia, Boix and Canosa (2004) and Thamrin, Pisanieloo and Stewart (2010) show the relevance of gender and age in safety climate studies. Garcia et al. (2004:8) found that women expressed a slightly worse perception of safety climate than men in a study at a pottery industry in Spain. Delph et al. (2000, in Thamrin et al., 2010:60) reported that younger workers (15–24 years) were twice as likely to experience work-related injuries and accidents as older workers.

In summary, demographic factors should be considered in safety climate studies, especially as higher accident frequencies were reported among temporary employees when compared with permanent employees in a literature review conducted by Luria and Yagil (2010:1424). This could be relevant as the students on the Transnet-Phelophepa HCT are younger workers.

4.6.2 **Perception of Safety Climate**

4.6.2.1 **Clinic managers' commitment to safety**

In this section a total of five questions were asked. The first three questions explored students' perceptions of the clinic manager's concerns about safety and dangerous activities. The last two questions determined whether there was safety orientation on arrival and whether proper equipment was available to perform tasks on the Transnet-Phelophepa HCT. The majority of the students (85.2%, n=218) stated that safety practices were very important to the managers, while one optometry student and two dental students reported that management were not concerned at all (Table 4.3).

Table 4.3: Students' perceptions of managers' concern over safety (n=256)

Import	Optometry	Nursing	Dental	Pharmacy	Psychology	Total
High	**58**	**59**	**51**	**26**	**24**	**218**
	26.6	27.1	23.4	11.9	11.0	100.0
	84.1	85.5	81.0	92.9	88.9	**85.2**
Relative	**10**	**10**	**10**	**2**	**3**	**35**
	28.6	28.6	28.6	5.7	8.6	100.0
	14.5	14.5	15.9	7.1	11.1	13.7
None	**1**	**0**	**2**	**0**	**0**	**3**
	33.3	0.0	66.7	0.0	0.0	100.0
	1.5	0.0	3.2	0.0	0.0	1.2
Total	**69**	69	63	28	27	256

A follow-up question asked the students to comment on efforts aimed at safety practice awareness. More than half of the students (n=140, 54.90%) reported being made aware of dangerous work practices on a regular basis. Only 1.18% (n=3) stated that the managers never mentioned danger or safety practices (Table 4.4).

Table 4.4: Perception of safety awareness practices (n=255)

	f(%)
Regularly makes us aware of dangerous practices on the Transnet-Phelophepa HCT	140 (54.9)
Occasionally points out the most dangerous work practices and conditions	89 (34.9)
Seldom mentions danger or safety practices	23 (9.0)
Never mentions danger or safety practices	3 (1.2)

A further question was asked to determine students' perceptions related to actions taken by managers to ensure safety. The majority of the students (72.3%, n=185) were satisfied with the managers' efforts to promote safety on the Phelophepa train. However, a few (23%, n=58) indicated that managers could do more to promote safety, and 5% (n=13) perceived managers to be more concerned about getting the patients seen to quickly than promoting safe practices (Figure 4.1).

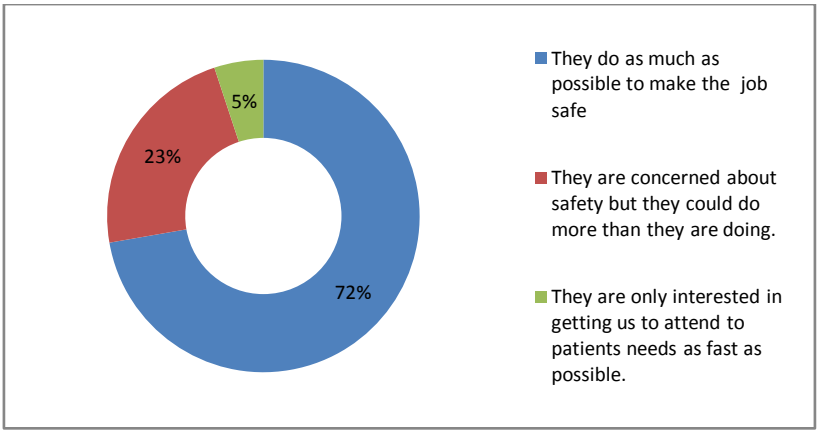


Figure 4.1: Students' perceptions of actions taken to ensure safety (n=256)

Two questions were asked to gain students' perceptions related to safety awareness instructions on arrival and the availability of proper equipment. The majority (78.7%, n=200) of the students stated that they received safety awareness instructions on arrival on the Transnet-Phelophepa HCT. Slightly less than fifty percent (49.8%, n=126) indicated that the necessary equipment to perform clinical tasks was always available.

4.6.2.2 Students' involvement in safety

The majority of the students (72%, n=181) indicated that there were no regular safety meetings in their respective clinics or in the pharmacy. Students were asked three questions regarding their perception of risks on the train: firstly, the extent to which they had control over their safety on the Transnet-Phelophepa HCT; secondly, whether they perceived train work activities as dangerous; and lastly, the perceived probability of sustaining injuries on the train. The majority (n=159, 63.1%) felt that they had almost total control over their personal safety on the Phelophepa train (Figure 4.2). Five students did not respond to this question.

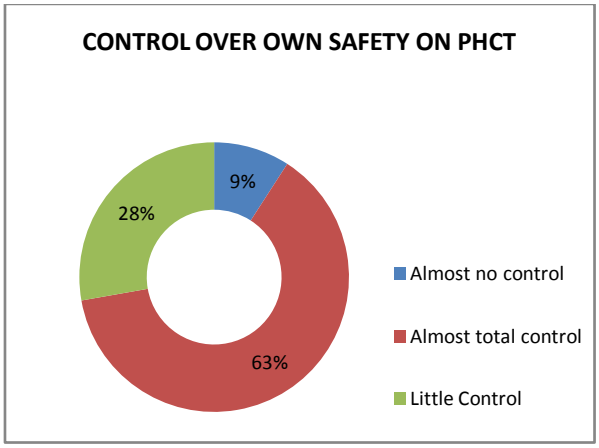


Figure 4.2: Control over safety on the Transnet-Phelophepa HCT (n=252)

In a follow-up question, 33.7% (n=84) of students stated that their job activities on the Phelophepa train did not involve taking risks, and only 18.1% (n=45) felt that the job did involve risk-taking. Further analysis by discipline showed that 40% (n=18) of dental students, 35.6% (n=16) of optometry students and 17.9% (n=8) of nursing students perceived risk-taking to be part of the job (Table 4.5).

Table 4.5: Students' perceptions of risk taking (n=249); missing data (n=8)

	Optometry	Nursing	Dental	Pharmacy	Psychology	Total
Very much	16 **35.6** 24.6	8 **17.9** 11.8	18 **40.0** 29.5	3 6.7 10.7	0 0.0 0.0	45 100.0 **18.1**
Somewhat	27 22.5 41.5	37 30.8 54.4	26 21.7 42.6	14 11.7 50.0	16 13.3 59.3	120 100.0 48.2
Not at all	22 26.2 33.9	23 27.4 33.8	17 20.2 27.9	11 13.1 39.3	11 13.1 40.7	84 100.0 **33.7**
Total	65	68	61	28	27	249

The last question related to perception of safety climate explored the students' views of the possibilities of sustaining injuries on the Transnet-Phelophepa HCT. Figure 4.3 indicates that for a small group (n=30, 11.9%) of the students the possibility of being injured was very likely. The nursing students (n=9, 30%) and the dental students (n=14, 46.7%) perceived injuries as being more likely than did the rest of the students (Optometry: 13.3% (n=4); Pharmacology: 6.7% (n=2) and Psychology: 3% (n=1)).

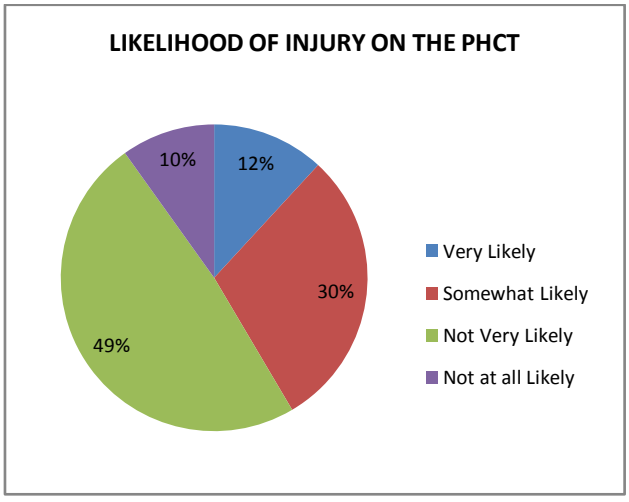


Figure 4.3: Perceived likelihood of injuries

4.6.3 Decision Latitude and Social Support

4.6.3.1 Decision latitude characteristics

Nine questions were asked to explore decision latitude characteristics. The decision latitude scale consists of two subscales: the Skills Discretion and the Decision Authority. To establish perceptions of tasks performed and skills required, the students were expected to reflect on tasks taking place on the health train. They then stated their perceptions of whether the tasks involved learning new things, developing abilities, a lot of repetitive work, creativity or a high level of skills, or variety. The results for Skills Discretion showed that the sentimental mean scores lie in the 'agree' category (Table 4.6).

Table 4.6: Decision latitude characteristics

Job requirements and opportunities	Strongly Disagree	Disagree	Agree	Strongly Agree	Sentimental Mean
	1	2	3	4	
Job requires a high level of skill	1%	3%	33%	62%	3.57
Job enables me to do a variety of different things	1%	6%	46%	47%	3.39
Job requires learning on the job	1%	4%	44%	52%	3.46
Job requires creativity	0%	9%	43%	47%	3.38
Opportunity to develop own special abilities	1%	4%	41%	55%	3.49
Allows me to make a lot of decisions on my own	3%	11%	39%	48%	3.31
Freedom to decide how to do work	12%	26%	37%	26%	2.77
Able to talk about what happens	6%	19%	51%	24%	2.93
Involves a lot of repetitive work	2%	17%	44%	37%	3.15

When analysing the data according to student group, 95.29% of the students seemed to be content that the tasks on the health train offer students the opportunity to learn on the job**.** Further responses from 95.66% (n=243) of the students expressed that the job requires a high level of skill and 92.91% (n=236) stated that they have an opportunity to develop their own special abilities on the health train. Regarding actual tasks performed, more than 90% of the students expressed that they are able to do a variety of different things (n=236) and that the tasks require creativity (n=228). On the other hand, 80.7% (n=206) stated that the tasks involve a lot of repetitive work. Noteworthy is the fact that less than thirty percent (25.9%, n=7) of the Psychology students perceived their tasks to be repetitive. Almost all (96.26%, n=26) stated that they are able to do a variety of different things on the health train (Table 4.7).

Table 4.7: Perceived decision latitude according to sample (n=257)

Characteristics	Strongly /Agree responses	Optometry (n=70)	Nurses (n=69)	Dental (n=63)	Pharmacy (n=28)	Psychology (n=27)
Skills Discretion						
Job requires learning on the job (n=255)	243 (95.29)	(n=69) 67 (97.10)	(n=68) 67 (98.53)	(n=63) 55 (87.3)	27 (96.43)	27 (100.00)
Involves a lot of repetitive work (n=255)	206 (80.7)	69 55 (79.7)	68 62 (91.1)	55 (87.3)	27 (96.4)	**7 (25.9)**
Job requires creativity (n=251)	228 (90.8)	(n=67) 61 (91.04)	(n=68) 65 (95.58)	53 (84.13)	27 23 (85.18)	26 26 (100)
Job requires high level of skill (n=254)	243 (95.66)	(n=69) 67 (97.1)	(n=68) 66 (97.05)	57 (90.47)	(n=27) 27 (100.00)	26 (96.29)
Able to do a variety of different things (n=254)	236 (92.91)	(n=69) 66 (95.65)	(n=68) 66 (97.05)	(n=62) 54 (87.09)	24 (85.71)	26 (96.29)
Opportunity to develop own special abilities (n=253)	242 (95.6)	69 67 (97.1)	68 65 (95.58)	59 (93.65)	26 24 (92.31)	27 27 (100)
Decision Authority						
Allows me to decide on my own (n=254)	219 (86.22)	69 59 (85.51)	67 60 (89.55)	60 (95.24)	**15 (53.57)**	25 (95.59)
Freedom to decide how to do work (n=254)	159 (62.5)	68 42 (61.7)	66 48 (70.5)	43 (68.2)	**13 (46.4)**	**13 (48.1)**
Have a lot to say about what happens (n=253)	190 (75)	68 47 (69.1)	68 55 (80.5)	45 (71.4)	27 21 (77.7)	22 (81.4)

The last three questions explored students' decision authority on the health train. More than 80% (n=219) stated that the job allows them to make many decisions on their own. The group of students with the highest agree scores was the Dental students (95.24%, n=60), followed by the Nursing students (89.55%, n=60) and the Optometry students (85.51%, n=59). The Pharmacy students had slightly more than fifty percent (53.57%, n=15) scores in the agree category.

In the next question, students responded to a statement with regards to freedom to decide how to do their work. The results showed a 'disagree' mean score of 2.77. The majority of students (n=159, 62.5%) felt they had freedom to decide how to work. The sentimental mean score for this question lies in the 'agree' category (3.31). However, two groups had low agree scores – the Pharmacy (46.4%, n=13) and Psychology (48.15%, n=13) students. This implies that these two student groups perceived the health train environment as allowing them to decide how to do their work.

Overall, the responses indicated that slightly more than seventy percent (75.09%, n=190) of students believed they have a say about what happens on the job.

4.6.3.2 Social support

The two subscales of the Social Support scale (Supervisor support and Co-worker Support) have four questions each. The entire sentimental mean scores lie in the 'agree' ranking. The supervisors on the health train were perceived to be supportive (Table 4.8).

Table 4.8: Supervisor and co-worker support

	Strongly Disagree	Disagree	Agree	Strongly Agree	Sentimental Mean
	1	2	3	4	
Helpful in getting job done	2%	2%	45%	51%	3.45
Successful in getting people to work together	2%	7%	44%	48%	3.38
Is concerned for welfare of those under him	2%	8%	39%	52%	3.41
Pays attention to what I am saying	4%	2%	43%	50%	3.39
People I work with are friendly	1%	3%	38%	58%	3.53
Are helpful in getting the job done	1%	5%	40%	54%	3.48
Are competent in doing their jobs	0%	3%	41%	56%	3.52
Take an interest in me	1%	8%	47%	45%	3.35

In all the questions exploring supervisor support, more than ninety percent positive responses were obtained from participants. Findings in Table 4.9 show that 96.1% (n=243) found their supervisors to be helpful in getting their jobs done, and 91.70% (n=232) perceived their supervisors as being successful in getting people to work together. In the two questions that followed, 90.0% (n=230) stated that supervisors showed concern for the welfare of those under them and 93.25% (n=235)felt that supervisors paid attention to what students had to say.

Table 4.9: Percentage agreement of supervisor support (agree or strongly agree) with supervisor support characteristics (n=257) except where indicated

Characteristics						
Supervisor support	**Total of (agree or strongly agree)**	**Optometry (n=70)**	**Nurses (n=69)**	**Dental (n=63)**	**Pharmacy (n=28)**	**Psychology (n=27)**
Helpful in getting job done (n=253)	243 (96.04)	(n=69) 69 (100.00)	(n=67) 62 (92.53)	(n=62) 58(93.54)	(n=27) 27 (100.00)	(n=27) 27(100.00)
Successful in getting people to work together (n=253)	232 (91.69)	(n=68) 62 (91.17)	(n=67) 61 (91.04)	(n=63) 57 (90.47)	27 (6.42)	(n=27) 25 (92.59)
Is concerned for welfare of those under him/her (n=253)	230 (90.9)	(n=68) 59 (86.76)	(n=68) 60 (88.23)	(n=62) 57 (91.93)	28 (100.00)	(n=27) 26 (96.29)
Pays attention to what I am saying (n=252)	235 (93.25)	(n=69) 66 (95.65)	(n=68) 63 (92.64)	(n=60) 53 (88.83)	26 (92.85)	(n=27) 27 (100.00)

Four follow-up questions were asked to establish perceptions related to colleagues' support on the health train (Table 4.10). Over 90% of students in all groups agreed with all four statements. It is noteworthy that Psychology students unanimously agreed that their colleagues are competent in doing their jobs and are friendly towards them.

Table 4.10: Percentage agreement (agree or strongly agree) with co-worker support characteristics (n=257 except where indicated)

Characteristics						
Co-worker support	**All participants (n=257)**	**Optometry (n=70)**	**Nurses (n=69)**	**Dental (n=63)**	**Pharmacy (n=28)**	**Psychology (n=27)**
People I work with are friendly (n=254)	244 (96.06)	(n=69) 64 (92.75)	(n=67) 66 (98.5)	60 (95.23)	27 (96.42)	27 (100.00)
Are helpful in getting the job done (n=254)	240 (94.48)	(n=69) 67 (97.1)	(n=68) 61 (89.7)	(n=62) 58 (93.54)	27 (96.42)	27 (100.00)
Are competent in doing their job (n=255)	247 (96.86)	(n=69) 66 (95.65)	(n=68) 66 (97.05)	61 (96.82)	27 (96.42)	27 (100.00)
Take an interest in me (n=253)	231 (91.30)	(n=68) 61 (89.7)	(n=67) 61 (91.04)	56 (88.88)	26 (92.82)	26 (96.29)

4.7 DISCUSSION

4.7.1 Management Commitment to Safety Discussion

Management commitment to safety is identified as a key factor for understanding and exploring the safety perceptions of employees and identifying ways to improve the safety environment (Huang, 2012:95b).

The results in this study indicate that the majority of the students perceived the Transnet-Phelophepa HCT clinic managers as having a high level of commitment to safety. Eighty-five percent felt that safety practice was important. Slightly more than half of the respondents (55%) expressed that they were frequently made aware of dangerous work practices. The results further showed that 72% of the students reported that the clinic's managers do as much as possible to ensure their safety on the health train.

These findings appear to be similar to those of Gillen et al. (2002) in a study on union and non-union injured construction workers in San Francisco. The majority (60%) felt that safety practice was important to management and slightly more than half (52%) reported being made aware of safety practice on a regular basis.

Studies have shown that individuals, who view the safety climate as favourable, were likely to practise safety behaviour. In reporting on safety climate, Yule and Flin
(2007:138) confirmed the association between a stronger safety climate and compliance with safety standards.

Since the majority of the students are positive about the clinic managers' efforts to ensure their safety, it may be concluded that their wellbeing is not being compromised. An individual's positive perceptions regarding management efforts towards safety is likely to translate into satisfaction and positive attitudes as well as safe behaviour practice (Gyekye, 2005:298). Michael et al.'s conclusion (2005) in a study conducted on management commitment to safety among wood-manufacturing employees in the USA support the researchers' conclusion in this regard. They concluded that increasing employee perceptions of management's personal concern for employee wellbeing would result in positive outcomes. Michael et al. (2005:176) further confirms that non-safety outcomes in the form of attitudes and behaviours were related to perceived management commitment to safety. However, in the same study, no association was found between employees' perception of commitment and job satisfaction.

In this study it should be noted that 5% of the students were not satisfied with management commitment to making the job safe. They felt that clinic managers were more concerned about getting the job done quickly. Similar results were reported in Gillen et al. (2002) and Sukadarin, Suhaimi and Abdull (2012). In both of those studies, the workers reported that the supervisors were more interested in completing the job quickly and inexpensively. According to Sukadarin et al. (2012), management's priority was profit.

Expecting workers to work very fast could predispose them to overwork and safety hazards. Yule and Flin (2007:140) view it as important for managers to be alert, as overwork could put employees at risk for work stress as well as occupational injuries and accidents. Huang et al. (2012:46) emphasise the importance of supervisors stating that their actions regarding safety should serve as a reference point in terms of workers developing their own safety perceptions. Fu et al. (2006:218) support this view and endorse the role of the supervisors in maintaining occupational safety. The art of supervision in the control of work performance is identified as one of the greatest influencing factors in successful accident prevention (Yule and Murdy, 2007:140).

4.7.2 **Safety Orientation and Training**

Another factor that contributes to successful accident prevention is safety awareness and training-related activities such as formal orientation programmes, subsequent follow-up safety meetings and training pertaining to safety practices. The benefits and positive effects of safety awareness and training-related activities, as stated by Huang et al. (2012:95b), include increased awareness of potential hazards and thus increased safety performance.

Safety awareness and training is vitally important on the Transnet-Phelophepa HCT, as the majority of students working (68.1%) are within the age range of 20 to 24 years. This age range is classified as the 'young worker' group, and there is evidence from the literature that these young workers are more susceptible to high risk injuries in the workplace due to lack of awareness of work-related hazards, among other causes (Thamrin et al., 2010:60).

On arrival on the Transnet-Phelophepa HCT, all students are given an orientation talk that includes safety aspects. However, they indicate having different opinions on the safety instructions given and on the job safety meeting; only 78.7% confirmed that they were given safety instructions on arrival and less than 30% confirmed that there was a job safety

meeting in their clinics. Similarly inconsistent perceptions were reported by restaurant workers in the United States of America on management commitment to safety in relation to employee-perceived safety training (Huang et al., 2012:99b). The results showed that the restaurant workers had different perceptions, despite the fact that they worked at the same place and were supposed to have had similar training.

In conclusion, Huang et al.'s suggestion (2012:46) for implementation of research strategies aimed at implementation of training programmes consistently would also benefit the Transnet-Phelophepa HCT. Students will have a shared common vision of the safety orientation and training-related activities.

With regards to availability of equipment on the Transnet-Phelophepa HCT, equipment relates to the apparatus that students need to perform diagnostic and other procedures. It also includes resources used for protection against exposure to potentially harmful blood and body fluids as a result of cuts and blood splashes.

Gillen et al. (2002:13) state that it is imperative that workers are routinely provided with proper equipment so that they can perform their jobs safely and more efficiently.
Hypothesis testing findings from a study conducted by Hahn and Murphy (2007:1061), for validation of a short scale for measuring safety climate, revealed a positive correlation between reported high levels of safety climate and the consistent availability of proper equipment to do the job.

The findings in this study revealed a significant correlation in the responses (p=0.000). Only fifty percent of the students stated that equipment to perform tasks was always available. Gillen et al. (2002:7) reported similar findings in a study conducted among union members and non-union members who were part of the construction industry in California. Less than fifty percent of the construction workers reported that they were always provided with equipment to safely do the job. In summary, lack of available equipment to do the job is of concern as this could be a barrier against engaging in safe work practices. Furthermore, students could be exposed to infectious diseases due to lack of protective resources against infections.

4.7.3 **Students' Involvement in Safety**

The perception of risk on the worksite is closely linked to the concept of workers' involvement or responsibility for safety (Fu et al., 2006:218). Involving workers in regular

safety meetings promotes a sense of belonging and thus being more accountable for safety in their workplace (Abdullah et al., 2009:57). Developing a sense of being part of the safety programme is important especially in the context of Transnet-Phelophepa HCT as students are allocated for a short period of time. Rundmo (2000) supports these views and further states that involving workers in safety meetings promotes their spirit of responsibility and accountability.

The results in this study showed that although more than 50% (n=140) of students reported regularly being made aware of dangerous work practices (Table 4.4), the majority of students (72%) mentioned that there were no regular job safety meetings. The findings suggest a lack of an organised ongoing safety awareness programme. Safety awareness is on an ad hoc basis. Yule and Flin (2007:148) explain that lack of training programmes might lead to workers developing a negative attitude and engaging in risk-taking behaviour, as they perceive that management is not concerned about safety. The other benefit of involving workers in regular safety meetings is that through participation, they become aware of the possible hazards and learn about accident prevention measures in place. This empowering process leads to workers being aware of the safety environment, and in turn makes the workers feel that they are in control of what happens around them.

The results in this study indicate that the majority of students (63%) felt they had almost total control over their own safety on the Transnet-Phelophepa HCT. Furthermore, 66% of the students' responses regarding risk taking ranged between 'very much' and 'somewhat'. Students were split on the issue related to the likelihood of injuries with almost 60% saying they are not likely to get injured and the other 40% perceiving injury as 'very likely' and 'somewhat likely'. The results are consistent with the setting on the health train as susceptibility to injuries in some areas is mostly dependent on the service provided. However, this could be problematic, as those individuals with a low perception of personal risk were less likely to comply with precautionary safety measures (Yule and Flin, 2007:141).

A conclusion drawn from Yule and Flin (2007:141) supports the views that employees' perceptions about their safety influence the adoption of safe practices, thereby reducing exposure to risk.

Therefore, it can be concluded that involving workers in risk perception assessment raises awareness regarding managements' commitment to safety. In addition, the workers gain

knowledge related to safety expectations and their own responsibilities. Safety knowledge influences their safety practice. Therefore they are more in control of what happens to their safety. Furthermore, once the workers are aware of the most likely risks related to the hazards that they are exposed to, then are in a better position to predict the likelihood of injuries in their work environment

4.7.4 **Decision Latitude**

Decision latitude is a concept that relates to freedom to decide and devise strategies for achieving an objective. The concept is also associated with stress as failure to meet objectives can result in stress (Halpern, 2005). In the context of the students on the Transnet-Phelophepa HCT, this applies to students' perceptions of the nature of work activities, the authority they have or don't have, and the impact with regards to personal growth.

The results of the students' perception of decision latitude showed that the Transnet-Phelophepa HCT is perceived as an environment that requires a high level of skill, while on the other hand it contributes to student learning. However, the mean scores in Table 4.6 showed that some of the students felt restricted in terms of freedom to make decisions and to express their opinions. An environment associated with the need for higher skills could be associated with greater job demands, leading to stress. Wood et al. (2011) state that high levels of support and control respectively can mitigate the worst effects of demands on anxiety and depression. This suggests that support and control are, to an extent, an interchangeable buffer against the negative impact of demands.

4.7.5 **Social Support**

According to Bateman (2009:2), research related to social support in the workplace is becoming increasingly important. The area of focus in social support research is supervisor support and co-worker support.

Bateman's study (2009:2 on employees' perceptions of co-worker support reported that core worker support was strongly associated with job satisfaction and furthermore, it has been found to reduce stress in the workplace. Lack of co-worker support was found to be one out of ten sources of stress in a study on job stress and general wellbeing among medical, surgical and home care nurses in the United States of America (Salmon and Ropis, 2005:301). Some other stress sources they reported were related to travel, the weather, and work environment. However, further analysis of the results showed that five

of the sources of stress were related to people not doing their jobs and not being willing to help others. On the contrary, the findings from the Transnet-Phelophepa HCT show that in all categories, more than 90% of each category indicated that there was co-worker support and that co-workers were competent in doing their jobs. It is noteworthy that students reported high levels of co-worker support, with more than 90% in agreement regarding this aspect. Although aspects of stress and job satisfaction were not explored in this study, the result implies a supportive environment, as more than 90% of all hotel and tourism students said that their colleagues were friendly and took an interest in them.

Inadequate support or lack of support from a supervisor was also identified as a source of priority stressors among medical, surgical and home care nurses in the United States of America (Salmon and Ropis, 2005:301). The possible contributory aspect was identified as increased job demands. In this Transnet-Phelophepa HCT study, students perceived supervisors to be helpful, encouraging teamwork, and considerate of students' opinions.

4.8 SUMMARY

The majority of the students on the Transnet-Phelophepa HCT during the period under study were satisfied with the management and supervisor's efforts to ensure safety on the health train.

There were shared perceptions of management commitment to safety, and the health train was perceived to be a low-risk environment. Low risk perception in this study may be associated with lack of knowledge of the possible occupational hazards and risks on the Transnet-Phelophepa HCT. Despite the fact that safety awareness was part of the welcome and orientation talk, students' perceptions were inconsistent regarding availability of safety training. Furthermore, responses regarding being informed about safety awareness practices ranged between 'occasionally', 'seldom' or 'never'. The majority of the students indicated that they were not likely to get injured; however, they admitted that the job involved taking risks.

Notwithstanding the limitations of this study, these findings provide baseline information on students' perceptions related to safety, the job content, and being in a position of decision-making and exercising authority. All of these aspects are a valuable contribution towards formulation of recommendations for the Transnet-Phelophepa HCT.

CHAPTER FIVE

PERMANENT EMPLOYEES: RESEARCH METHODS, RESULTS AND DISCUSSION

5. CHAPTER OVERVIEW

The focus of this chapter is on the research studies conducted with the permanent service providers on the Transnet-Phelophepa HCT. The Transnet-Phelophepa HCT is a 'live at work' setting for those participants who are permanent employees on the Transnet-Phelophepa HCT for 35 weeks of the year. The Transnet-Phelophepa HCT is a complex environment in the sense that the service providers' day to day life is confined to a limited space or restricted surroundings. Added to this is the diversity of the work setting. As the Transnet-Phelophepa HCT train travels to the next health service provision area, the permanent employees are expected to adapt and adjust to and cope with the complexities of that area. An inability to cope in this setting could predispose them to stress and burnout. Factors such as stress and burnout have a negative impact on quality of life and health and wellbeing of the permanent service providers on the Transnet-Phelophepa HCT. There are also factors that could have a positive impact on their quality of life. Firstly, the Transnet-Phelophepa HCT affords the permanent employees an opportunity to get away from busy urban areas and ushers them into a type of tourism, potentially visiting up to eight provinces in South Africa. Secondly, the Transnet-Phelophepa HCT offers an opportunity to be exposed to rural and remote areas.

SECTION A: WORK STRESS AMONG TRANSNET-PHELOPHEPA HCT PERMANENT EMPLOYEES

5.1 INTRODUCTION

No work environment can claim to be completely stress-free (Okeke and Dlamini, 2013:8). Sources of stress among permanent service providers on the Transnet-Phelophepa HCT need to be examined, since this is a unique community-based setting that partly fulfils the description of a mobile health care service on rail, and on the other hand, that of a district PHC facility. Findings from the literature indicate that levels and sources of stress may be different between hospital and community settings as well as between different rural and remote areas (Lenthall et al., 2008:209).

In the health care service in general, providers are at risk of burnout due to emotional responses to stressful situations such as an inability to meet work expectations, managing

very sick patients and experiencing administrative problems (McCann et al., 2009:189). Lenthall et al. (2008:210) explain that community health settings, especially in rural or remote areas, are characterised by factors such as geographical, social and professional isolation, as well as difficulty in accessing resources, among other factors that could lead to stress. Therefore the purpose of this research was to determine the levels and sources of work stress among permanent service providers on the Transnet-Phelophepa HCT.

5.2 RESEARCH METHODS

A quantitative descriptive study design was used to identify the level of general work stress and the perceived sources of work-related stress on the Transnet-Phelophepa HCT.

5.2.1 Study Population and Sample

The target population consisted of all the permanent employees (n=19) who worked on the Transnet-Phelophepa HCT for 35 weeks in the year of data collection. Due to the limited population size, no specific sampling technique was applied, and questions on biographical information, namely cultural group, gender and age, were declared optional to avoid the possible identification of respondents. Permanent service providers were invited to participate in this survey. Those who agreed based on the study information provided (Appendix 5.1) were included in the study. No additional inclusion or exclusion criteria were applied. Eighteen permanent employees agreed to participate (n=18).

5.2.2 Data Collection

5.2.2.1 Data collection instrument

Data were collected using the self-administered paper and pencil version of the Sources of Work Stress Inventory (SWSI), which was handed out to participants along with return envelopes. The SWSI is a 59-item psychometric instrument developed in 2005 by Taylor and de Bruin (2005). The SWSI is designed to provide a measure of general levels of stress, as well as to identify possible sources of stress. The SWSI (Appendix 5) is divided into two parts: the General Work Stress Scale and the Sources of Work Stress Scale. These are described below.

5.2.2.1.1 General Work Stress Scale (GWSS)

The purpose of the General Work Stress Scale is to examine to what extent work is stressful for an individual. A list of nine questions attempts to establish how frequently workers experience feelings of stress related to their work. The range of responses on a 5-point Likert scale are ‘never’ (1), ‘rarely’ (2), ‘sometimes’ (3),

'often' (4) and 'always' (5). Sample statements include: 'Does work make you so stressed that you wish you had a different job?' and 'Do you spend a lot of time worrying about your job?'

A high level of stress is indicated by a mean score of 60 and above. Mean scores of between 40 and 60 indicate a moderate level of stress, and mean scores of 40 or less indicate that employees are able to cope with stress or that they do not perceive their work environment to be too stressful.

5.2.2.1.2 Sources of Work Stress Scale (SWSS)

The Sources of Work Stress Scale consists of eight subscales, each having six statements on average. Participants respond to 50 statements in total, to determine sources of stress at work. The range of responses on a 5-point Likert scale are 'none at all' (1), 'very little' (2), 'some' (3), 'quite a lot' (4) and 'very much' (5). Aspects of work that are perceived to be a high source of stress are indicated by a mean score of 60 and above, and mean scores of 40 to 60 indicate an average or moderate source of stress. Mean scores of 40 or less indicate sources are perceived as low stress or as not stressful at all. The scale's eight sub-scales are as follows:

1. Role Ambiguity

   This 7-item subscale relates to the amount of stress experienced by an individual due to vague specifications or constant changes regarding the expectations, duties and constraints that define the individual's job. Sample statements query aspects such as: 'Having to do extra things that are not part of my job' and 'Doing tasks that are totally unrelated to each other'.

2. Relationships

   This 8-item subscale provides an indication of the amount of stress a person experiences due to poor interpersonal relationships with colleagues and superiors, or due to being subjected to interpersonal abuse. Sample statements query: 'Being unfairly criticised for my work' and 'Hearing people at work make unkind remarks about me'

3. Tools and Equipment

   This subscale comprises five items that measure the stress experienced by an individual due to tools and equipment being inaccessible or inappropriate, broken or complex. Sample statements query 'Working with equipment that is outdated' and 'having to wait for the equipment I need to do or complete a task'.

4. Career Advancement

   The five items in this subscale focus on stress that individuals may experience when unable to advance along the career path they have chosen. They experience stress as a result of a perceived lack of opportunities for advancement in their careers. Statements range from 'having poor promotional prospects', 'being paid less' and 'progressing slower in my career than I hoped I would'.

5. Job Security

   This subscale has 4 items and gives an indication of the degree of stress experienced by individuals due to uncertainty about their future in their current job. Sample statements that explore an individual's feelings of vulnerability to job loss include 'being unsure about what the future holds for my organisation' and 'being uncertain about how to keep my job secure'.

6. Lack of Autonomy

   Seven indicators in this subscale help determine stress due to lack of decision-making authority in an individual's workplace, possibly due to working in a rigid or structured environment. Examples of queries are: 'Being unable to be creative in my work' and 'Having to ask permission before doing anything'.

7. Work/Home Interface

   This 8-item subscale centres on the stress experienced by an individual due to conflicting demands at home and at work. Stress experienced could be due to lack of social support at home or from friends, and work/non-work-related issues. Sample statements include: 'Balancing the demands at work with the demands at home' and 'having events at home that affect the quality of my work'.

8. Workload

   This subscale consists of 6 items that explore stress experienced by the individual due to the perception that he or she is unable to complete tasks in the time available.

   Examples of statements include 'having too few hours in the day to get all my work done' and 'having to cut back on my social life to get my work done'.

5.2.2.2 **Reliability and validity of the SWSI**

The SWSI instrument was validated by two samples in two different academic institution settings (Taylor and de Bruin, 2003). The psychometric properties were found to have a satisfactory internal consistency and good structural validity. The Cronbach's alpha coefficients ranged from 0.86 to 0.95 for the first version and 0.86 to 0.94 for the second (de Bruin and Taylor, 2006:764). A preliminary trial of the tool was not conducted for this study due to the small total population size. Furthermore, there was no known project in South Africa wherein the context and the sample composition was similar to that of the Transnet-Phelophepa HCT. Nonetheless, in this study, all scales on the SWSI demonstrated satisfactory internal consistency (α=0.70), apart from the job security scale (α=0.596), which could have been because there were only four items in this scale and there was little variance in responses in the group.

5.2.3 **Data Collection Process**

All permanent service providers who agreed to participate in the study were individually approached and handed an unmarked sealed envelope with a questionnaire. They were requested to complete the questionnaire during their spare time, and to place the sealed envelope containing the completed questionnaire in a box in the dining coach. Completion of the questionnaire implied consent to participation in the study. The researcher collected the sealed envelopes and handed them over to an accredited psychologist for data analysis as per signed agreement.

5.3 **DATA ANALYSIS**

Data were entered in a Microsoft Excel spreadsheet and the raw scores were converted to McCall's T-scores (Mean=50, SD=10) for easy interpretation. SPSS version 19 was used for analysis of data. Cronbach's coefficient alpha was calculated to assess the manner in which all participants responded to similar questions that measure a particular aspect. A one-sample Kolmogorov-Smirnov (K-S) non-parametric test was conducted using SPSS

version 19, comparing the T-scores for the group to the mean and standard deviation of a normal T-score.

5.4 RESULTS

Data were gathered from a sample of 18 permanent employees (n=18) who agreed to participate in the study. Sixteen questionnaires were completed and returned, yielding a response rate of 88.9%.

5.4.1 Population Characteristics

Demographic data presented in this section is based on information obtained from the Transnet-Phelophepa HCT human resource records, given that demographic information for this small population was declared optional. The records showed that slightly more than fifty percent (52.6%, n=10) of the participants were male. Concerning age distribution, more than half of the respondents (52.6%, n=10) were in the age range of between 20 and 39 years and eight respondents (42.06%) were between 40 and 59 years. Only one respondent (5.25%) was older than 60 years at the time of data collection. Thirteen respondents (68.4%) had had tertiary education. Slightly more than half of the permanent employees (52.9%, n=10) were single.

With regard to years of employment, 42.1% (n=8) had been employed for one year. Equal numbers of participants (n=3, 15.8%) had worked for 2 to 3 years, 4 to 6 years, and 13 to 15 years respectively.

5.4.2 Levels of Work Stress

The first objective was to establish the extent to which the permanent service providers' work environment was perceived to be stressful. The overall results in Table 5.1 show that reliable scores were obtained, with the Cronbach's α=0.851 for the level of stress scale. The result (M=42.9, SD=9.9) indicates a moderate level of stress.

Table 5.1: General work stress of the sample (n=16)

Scale	Minimum	Maximum	Mean	Std Deviation	Cronbach's Alpha
General work stress	24	56	42.9	9.970	.851

5.4.3 Sources of Work Stress

In Table 5.2, the sources of work stress were ranked in descending order, according to the means obtained. The SWSS scores showed that the perceived sources of stress fell into two categories. More than 60% (n=5) of the sources of stress were scored as average (moderate) and 37.5% (n=3) were rated as low. Participants did not rate any of the sources of stress as high.

The means of the five sources of stress perceived as moderate ranged from 44.88 to 56.63. The work/home interface scale score (M=56.63, SD=8.14) was the highest and was profoundly inclined towards 60. As the highest moderate source of stress, it could develop into a high source of stress if not attended to. The second-highest moderate source of stress was role ambiguity (M=47.31, SD=5.65), followed by tools and equipment (M=46, SD=10.86), relationships (M45.19, SD=13.35), and workload (M=44.88, M=10.05).

The three sources of stress with low perceived scores were career advancement (M=38.06, SD=7.99), job security (M=36, SD=5.06) and lack of autonomy (M=37.06, SD=11.5).

Table 5.2: Sources of work stress of sample (n=16)

Sources of Work Stress	Minimum	Maximum	Mean	Std Deviation	Cronbach's Alpha
Work/home interface	43	69	56.63	8.148	.784
Workload	27	56	44.88	10.059	.855
Role ambiguity	41	60	47.31	5.654	.765
Relationships	0	64	45.19	13.353	.962
Tools and equipment	37	79	46.00	10.863	.920
Career advancement	30	52	38.06	7.996	.713
Lack of autonomy	24	56	37.06	11.532	.789
Job security	30	43	36.00	5.060	.596

5.5 DISCUSSION

Males made up the majority (52.6%) of the sample, and an almost equal number of respondents (n=11, 52.9%) were single or widowed. Thirteen respondents (68.4%) had tertiary education, and more than forty percent (42.1%, n=8) had been employed for a year or more. Statistical correlation of demographic characteristics and work stress could not be explored due to staff members' concerns about confidentiality.

5.5.1 **Level of Work Stress**

The level of general work stress on the Transnet-Phelophepa HCT had a mean value of 42.9, with a standard deviation of 9.9. These results indicate or suggest a moderate level of work stress.

The level of work stress reported on the Transnet-Phelophepa HCT are similar to the findings of a preliminary study on stress among district nurses in the north-west of England (Rout, 2000:305), where mean scores on a scale of one to five indicated medium stress levels.

Hayashi et al. (2009:600) assert that working in the community can be more stressful than working in in-patient services. In Australia, Opie et al. (2010:239) found high levels of work stress among nurses working in remote areas and community-based settings, with higher levels of stress than hospital-based employees. Opie et al. (2010:235) describe the remote context as very demanding, with conditions such as professional isolation, limited career opportunities, inadequate management support, and heavy job demands, as predisposing health employees to elevated levels of stress.

The moderate stress levels (mean score of 42.60) on the Transnet-Phelophepa HCT are closer to the low stress area (mean score of 40 and below). The most likely scenario is that the Transnet-Phelophepa HCT permanent employees have adjusted well and have developed coping mechanisms for their job expectations.

The researcher's assertion is influenced by Rout's findings (2000:307) in a study where, despite the fact that the district nurses had experienced stress in some areas, generally the work itself was a source of considerable satisfaction because of job variety and support from co-workers.

In summary, the results indicate a moderate level of stress among the contracted employees on the Transnet-Phelophepa HCT. The results have been interpreted with caution, as this was a group assessment, and yet there are specific occupational stressors that vary depending on the particular stress facing each professional group. Therefore, the perceived levels of stress could be different for each professional group and for the minority group of non-professional employees on the train.

5.5.2 Sources of Work Stress

The top three moderate sources of stress identified from data analysis were: work/home interface, workload and role ambiguity. Although there were no items rated as high sources of stress, the work/ home interface mean score 56.63 lies closer towards 60, indicating a tendency towards high stress. Therefore, work/home interface is the highest reported moderate source of stress.

De Bruin and Taylor (2006:4) describe the work/home interface as the balance between the individual's home and work environments. Chuang and Lei (2011:563) state that work/home factors such as role conflict, role overload and excessive work demands could predispose or contribute towards experience of stress.

Greenhaus, Collins and Shaw et al. (2003:512) explain the importance of balancing work and home activities for wellbeing, and how to achieve this by approaching each role – work and home/family –with an approximately equal level of attention. Omar, Mohd and Ariffin (2015) agree that wellbeing is possible if an individual attains balance; however, they also allude to the challenges of achieving a balanced life. Kreiner, Hollensbe and Sheep (2009:705) explain that stress occurs due to pressure from irreconcilable expectations and challenges associated with the work/home balance. Irreconcilable expectations could be due to being expected at work when there is a family-related role to be fulfilled.

Demands in both areas as indicated by Greenhaus et al. (2003:54) could have an impact on one's quality of life, eventually reducing an individual's capacity to fully engage and to be satisfied with both their work role and family role. The work/home interface's mean score of 56.63 suggests that the permanent employees experience stress related to inability to achieve a favourable work/home balance.

For the work/home interface to be perceived as the highest source of stress on the Transnet-Phelophepa HCT is not unusual, as there are similar results in a number of studies.

A study conducted on health care providers in an underserved community in Washington D.C. showed that family responsibility versus work life were ranked in the top five sources of stress (Hayashi et al., 2009:597). The results further showed that the stress was associated with lack of personal and family resources available to staff. However, the focus in the Transnet-Phelophepa HCT study was to establish stress related to 'arguing with

family over work-related issues'; 'having happenings at home that affect the quality of work' and 'being too busy to have a hobby'. Chuang and Lei (2011:557) studied job stress among casino hotel chefs in the USA. The results showed that long hours at work can lead to personal life imbalances, by not leaving enough time for any engagements with family or others after work.

Based on the above explanation it is evident that stress related to the work/home interface is a complex aspect to study due to the two environments being inter-related and interdependent. Given that the work/home interface was perceived to be the highest source of stress for Transnet-Phelophepa HCT employees, it is important to explore and establish ways to make work/life and family life more compatible.

Role Ambiguity

Omar et al. (2015:53) describe role ambiguity-related stress as a situation where there is failure to comply due to unsuitable demands placed on the employee. De Bruin and Taylor (2006:3) stated that role conflict is associated or interconnected with role ambiguity. However, in some studies the two concepts are investigated as separate sources of stress (Chandraiah et al., 2003:8). Some of the aspects explored in this study are related to employees 'not being sure about the expectation[s]', 'receiving unclear assignments' and 'being treated in a degrading manner'.

Uncertainty and confusion about scope of work or responsibilities are work features that have been reported among health workers working in community-based settings or in multi-disciplinary teams (Lloyd, Mckenna and King, 2005; Cioffi et al., 2010).

Role clarification was highlighted as a key tension-causing issue that needed to be addressed among members of a multidisciplinary team where allied health professionals expressed frustration with community nurses' inability to multitask in order to meet the health needs of their clients (Cioffi et al., 2010:67–68).

In the Transnet-Phelophepa HCT study, the focus was on role ambiguity. With a mean score of 47.31, it was the second-highest moderate source of stress identified. These findings appear consistent with those of Chandraiah et al. (2003:8) who found that role ambiguity was ranked the second-highest source of stress among industrial managers in India.

A multidisciplinary team consisting of nurses, optometrists, dentists and psychologists facilitates service provision on the Transnet-Phelophepa HCT. In this setting, there is a possibility of role overlap, where for example a nurse could prescribe eye treatment without referring a client to the eye clinic.

In a study conducted by Lloyd et al. (2005:90) occupational therapists and social workers reported stress caused by role self-doubt. The results further showed a correlation between professional self-doubt and younger ages. Lloyd et al. (2005:90) commented that this type of stress is not surprising in the context of changing roles and responsibilities, especially if the employees have not been adequately prepared for the setting or have not acquired the necessary knowledge and skills.

A correlation of role-ambiguity related stress with age and number of years working on the Transnet-Phelophepa HCT was not done. However, it is noted that 59.7% of the permanent employees were below the age of 50, and 42.1% of these had been on the Transnet-Phelophepa HCT for at least a year.

In summary, this section presented stress related to role ambiguity in the context of uncertainty regarding one's role and responsibilities, and furthermore, performing tasks that are not part of one's job description.

- Workload

  Role ambiguity is generally found to be closely associated with workload in a number of studies. In this study, role ambiguity is the second-highest moderate source of stress with a mean score of 47.31, while workload with a mean score of 44.88 is the lowest-rated moderate source of stress. Yet, the Transnet-Phelophepa HCT is considered to be a high-volume work setting characterised by long working hours.

  In addition, employees on the Transnet-Phelophepa HCT could experience stress related to inability to complete their tasks efficiently and effectively, or to meet their client's needs due to factors such as lack of expertise, limited time and heavy workload (Coyle et al., 2005:208).

  Chuang and Lei (2011:563) identified long hours and high work volume as the most significant contributors to stress among casino chefs. McCann et al. (2009:188) also found that a heavy workload contributes to high stress levels. Similar results were

reported among health professionals in northern Jordan (Boran, Shawaheen, Khaderand Rice, 2011:146), where workload was rated as the highest source of stress.

Moreover, apart from workload-related stress, McCann et al. (2009:188) found that pharmacists reported stress due to lack of variety, or to not being challenged by their work**.** According to Trivellas, Reklitis and Platis (2013:723) work stress related to workload has detrimental consequences and is significantly negatively associated with job satisfaction.

Work/home interface, workload and role ambiguity in this study are ranked as the top three of the moderated sources of stress. The outcome ranking in order of priority is congruent with the study conducted by Omar et al. (2015) to identify the effects of workload and role conflict towards employees' work life. It is interesting to note that in this study on the Transnet-Phelophepa HCT, workload and role conflict are closely related to work/home balance.

- Relationships and availability of tools and equipment

  Several studies have shown that one of the most common sources of stress when working in community-based care or multidisciplinary teams is relationships. Relationship-related sources of stress reported include lack of communication in general as well as lack of resources (Lloyd et al., 2005:81), and stress related to lack of communication concerning client care (Sveinsdottir, Bieringand and Ramel, 2006; Cioff et al., 2010).

  Research studies by Hayashi et al. (2009) and Lloyd et al. (2005) highlighted relationships and conflicts with co-workers or other professional sources of stress. Poor relations with superiors as well as bureaucratic constraints were reported in Chan et al. (2000) while gender-related issues affected relations in Haq, Iqbal and Rahman (2008).

  Lloyd et al. (2005:91) express the importance of good working relations among members of a multidisciplinary team and of establishing collaborative relationships and liaisons with external organisations, as quality of care is highly dependent on relationships. They are of the opinion that relationships and collaborations with external agencies are prerequisites for successful execution of health programmes.

Throughout the day on the Transnet-Phelophepa HCT, there is communication among the employees and management regarding the number of clients being attended to on that day. Furthermore, information is shared regarding the progress made towards achieving the day's objectives. The most important aspects of relationships on the Transnet-Phelophepa HCT are fostering and nurturing relations with external agencies such as the local health services, policing forum structures, community-based organisations and waste-management structures, to mention a few.

The Transnet-Phelophepa HCT findings appear to be consistent with those of Ahsan et al. (2009:127) in a study conducted among university staff in Malaysia. The association between relationships with others and job stress was not found to be a significant factor (Ahsan et al., 2009:127), leading to their assumption that 'most probably all the faculty members are very friendly and cooperative'. It is possible that the permanent employees on the Transnet-Phelophepa HCT are like a close-knit family due to the integrated nature of their work, home and social environment. In this kind of environment, individuals may discover how much they need one another; they tend to become friendly, take care of one another and to be cooperative. Hence, relationship-related stress is not considered to be a major source of stress.

- Tools and Equipment

  Resource-related stress has been reported in a number of studies. In De Bruin and Taylor (2006:8), resource-related stress in the SWSI is investigated specifically in relation to the availability of tools and equipment. In contrast, in a number of studies, the scope of resource-related work stress reported goes beyond the availability of tools and equipment. Stress associated with human-related resources was reported in McCann et al. (2009). In Chuang and Lei (2011), high levels of stress were related to irregular provision of medical supplies.

  On the other hand, in Hayashi et al.'s (2009) study the greatest resource-related source of stress was associated with patients' inability to access services due to lack of medical insurance or unavailability of some speciality services at the health centre.

  The results in this study showed that tools and equipment are rated as the third-highest moderate source of stress (with a mean score of 46.00). Despite being seen as a moderate source of stress, this aspect could have an impact on effective and efficient service delivery on the Transnet-Phelophepa HCT, especially in the context of

outreach teams rendering programmes in all the communities visited by the Transnet-Phelophepa HCT.

Gillen et al. (2002) highlight the importance of routinely providing workers with proper equipment, so that tasks can be performed safely and more efficiently. According to Hahn and Murphy (2007:1061), employees who are supplied with proper equipment are less likely to report that their jobs or tasks are unsafe.

On the Transnet-Phelophepa HCT, tools and equipment are an essential component for smooth operations and efficient, effective service provision. Lack of tools and equipment in one department could lead to delays in referring patients to other departments. This in turn could impact negatively on relationships with others.

5.5.3 Low Sources of Stress

Three low sources of stress among permanent service providers on the Transnet-Phelophepa HCT, with mean scores below 40, include career advancement (38.06), lack of autonomy (37.06) and job security (36).

- **Career Advancement**

  In this study, career advancement with a mean score of 38.06 was the highest of the reported low sources of stress on the Transnet-Phelophepa HCT. Information was not obtained on employees' involvement in further career advancement studies or of their progress in such studies. Nonetheless demographic data illustrate that almost 70% (n=13) of the employees on the health train already have a tertiary education qualification. According to De Bruin and Taylor's (2006:9) interpretation of the scales, it may be concluded that the Transnet-Phelophepa HCT employees are satisfied with their careers and see opportunities for growth. However, it should be noted that the mean score lies closer to the moderate source of stress area (mean score 40–60). These results could have been influenced by conducting the survey on both professional and non-professional permanent employees, with different career advancement aspirations and opportunities. In addition, permanent employees are employed on yearly renewable contracts. Therefore, they may have lesser expectations regarding management-driven career development opportunities. Nonetheless, the career development indicator was perceived as a low source of stress.

Given that the Transnet-Phelophepa HCT has a small population, with the majority being unit managers, there are likely to be limited prospects for promotions and career development. Findings from a study conducted on district nurses in England by Rout (2000:308) appear to be congruent with the Transnet-Phelophepa HCT setting wherein there are limited opportunities for career development due to working in smaller units. Rout's study (2000:308) showed that district nurses were dissatisfied because their colleagues, who were working in bigger settings such as hospitals, had better promotion prospects. Similar findings were reported in a study exploring job stress among community health workers in Pakistan (Haq, Iqbal and Rahman, 2008:4). The results showed that slightly more than half (53%) of the health workers expressed dissatisfaction with their jobs due to lack of prospects for professional development and lack of a career path. Absence of career advancement was rated as a moderate to very high source of stress.

In summary, career advancement stress is experienced due to no career advancement program, no promotion prospects, or slow progress in one's career. Career advancement would potentially place a person on a more advanced level, with more decision authority or more independence, and this is desirable for various reasons, including job satisfaction and goal fulfilment.

- **Lack of Autonomy**

  The lack of autonomy aspects explore issues related to 'creativity in carrying out the tasks', 'decision making' and 'authority related aspects'. Lack of autonomy was the second-ranked low source of stress with a mean score of 37.06. The low source of stress can be interpreted as an indication that the permanent employees are relatively satisfied with the amount of decision-making authority they have at work. The findings are congruent with the Transnet-Phelophepa HCT work environment, as in this setting, employees work in small units. A small inclusive team manages each clinic or service with each member specializing in a specific area. Overall there is one person in charge. However, each group member has authority to decide how to achieve the specific task. The level of stress related to conflicts with superiors and colleagues is thus relatively low.

  There are indications from previous research that working in small units increases the potential for working autonomously. Findings from a study conducted by Rout (2000:308) showed that district nurses in England experienced satisfaction from their

jobs as they had decision-making authority as well as job variety and good relations with other health professionals.

Chan et al. (2000:1421) regards stress related to lack of autonomy as being associated with the type of profession or job. In Chan et al. (2000:1421) doctors reported the lowest levels of stress related to job autonomy, as they run their own clinics and have the decision latitude to control their practices. On the other hand, in the same study, high sources of stress were reported among nurses as lack of autonomy, bureaucratic constraints and poor job prospects. Similarly, McCann et al. (2009:192) reports that people with lower grade jobs tend to be more stressed, as they have to follow instructions from other health professionals and have less control over their jobs. Notably, on the health train, the permanent staff members work in small teams and specialise in their own areas. It can be inferred that they are satisfied with decision latitude over their jobs, as lack of autonomy was rated as the second last low source of stress.

- **Job security**

  Mauno, Kinnunen, Makikangas and Natti (2005) state that the concept of job insecurity among scholars is associated with non-permanent employment as well as low levels of job satisfaction and work engagement.

  Mauno et al. (2005) conducted a study which showed that permanent employees had lower job satisfaction and work engagement compared to fixed-term employees. The job security related factors explored among the permanent service providers include among others 'being unsure about what the future holds about the organisation' and 'being unsure about how to keep my job secure'.

  The results showed that job security was ranked as the lowest source of stress with a mean score of 36.00. Although aspects related to job insecurity were not investigated on the Transnet-Phelophepa HCT, the findings are congruent with Mauno et al.'s (2007) findings. The permanent service providers are on a yearly renewable contact and yet this factor was not ranked as a moderate or high source of stress indicating dissatisfaction.

  Similar findings were reported in Hayashi et al. (2009:601). Job security was ranked second from the bottom last on a list of twenty possible sources of stress among

service providers in underserved communities in Washington DC. Contrasting results to the current study of sources of stress on the Transnet-Phelophepa HCT were reported in a study conducted exploring work-related stress on teachers in secondary schools in Swaziland (Okeke and Dlamini, 2013:9). The first and major source of work-related stress was a result of contractual problems. The possibility of the contracts not being renewed resulting in job loss was the sources of stress for the teachers. Notable is Burgard, Brand and House's (2009:778) explanation of how job insecurity predisposes one to stress. Job insecurity related stress is associated with an individual persistent uncertainty about whether the job loss is going to occur or not.

Burgard et al. (2009:778) are of the opinion that the perceived insecurity is more stressful than actual job loss or unemployment as this is an internal experience and it is difficult for an individual to plan for the job loss due to uncertainty.

Based on the fact that the Transnet-Phelophepa HCT permanent employees are on yearly renewable contracts, a high level of stress was expected due to their having 'no job guarantee'. Regardless of the poor internal consistency (α=0.596) the results are surprisingly not congruent with other scientists' assumptions and research evidence. The results suggest that permanent employees in this setting have accepted their contractual conditions irrespective of their job status or profession.

Mauno et al. (2007) further state that the expectancy of renewal of a contract or of getting a permanent job helps raise employee motivation. Hence, job security was perceived as the lowest low source of stress on the Transnet-Phelophepa HCT. Nonetheless, job security remains an important source of work stress to be addressed, as unlike job loss and unemployment, it is experienced internally. The effect of job insecurity could have an impact on employees' psychological wellbeing and on their family relationships.

5.6 SUMMARY

In the existing body of literature there is evidence that stress has many different sources, and furthermore, the level of stress experienced is contextual. In this study, work/home interface, workload and role ambiguity were rated as the top three moderate sources of stress, with the mean rating of work/home interface stress lying closer to the high source of stress rating.

Stress therefore has consequences not only for the health and wellbeing of employees but also for the communities served. Stress also has an impact on the employers' budget due to absenteeism and poor functioning at work. Hence, it is important that adequate strategies for investigating and reducing stress be investigated to contribute towards health and wellbeing of the employees.

SECTION B: PERMANENT SERVICE PROVIDERS' QUALITY OF LIFE AND EXPERIENCES ON THE TRANSNET-PHELOPHEPA HEALTH CARE TRAIN

5.7 INTRODUCTION

The focus of this sub-section is on the overall approach used to investigate the permanent service providers' perception of their quality of life and their experiences of life on the Transnet-Phelophepa HCT. Discussion points include the research methods, the results and the emerging recommendations for health and wellbeing on the Transnet-Phelophepa HCT.

5.8 RESEARCH METHODS

Two research design types were used to address objectives related to permanent service providers. A quantitative descriptive design was used to collect data regarding service providers' quality of life, while a qualitative, contextual, descriptive and explorative approach was used to gain an understanding of their experience of life on the Transnet-Phelophepa HCT.

5.8.1 Population and Sampling

No specific sampling strategy was applied for studies conducted on the permanent service providers due to the limited population. Therefore, all the permanent service providers (n=19) were invited to participate in the Quality of Life (QOL) survey (Appendix 6.1) and in the qualitative study (Appendix 7.1).

Seventeen permanent service providers (n=17) agreed to participate. All the permanent service providers met the criteria for purposive sampling as they were employed on a yearly renewable contract and were working and living on the Transnet-Phelophepa HCT. Therefore, they were considered as having a broad general knowledge and considerable experience of the phenomenon being studied.

5.8.2 **Data Collection**

5.8.2.1 **Quality of life: WHOQOL-BREF**

The WHOQOL-BREF is an abbreviated 26–item version of the WHOQOL-100 instrument. The WHO (1995) developed these two instruments with the aid of 15 collaborating centres around the world. The WHOQOL-BREF, as reported by Skevington et al. (2004), contains one item from each of the 24 facets of the WHOQOL-100.

The WHOQOL-BREF questionnaire addresses two aspects. The first aspect contains two items assessing the individual's perception of his/her Global Quality of Life and Health-Related Quality of Life. The second aspect contains four domains that are each assessed within their own facet. The domains assessed are:

1. Physical health with 7 aspects (Pain, medication, energy, mobility, sleep and rest, activities and capacity).
2. The Psychological Domain with 6 aspects (positive feelings, life meaning, cognition, esteem, body image and negative feelings).
3. The Social Domain relates to three aspects (social relationships, social support and sexuality).
4. The Environment Domain addresses seven aspects namely safety, physical environment, finance, services, information, leisure and transport.

Each of the aspects is addressed on a 5-point Likert scale. The questionnaire consists of an assortment of assessment questions, for which participants are expected to state: 'how much certain things happen', 'how completely', 'how often', 'how good' or 'how satisfied' they felt in the last two weeks. The WHOQOL-BREF was found to be a global QOL instrument measuring both health-related and non-health-related QOL. The domains of living, such as family, friends, work, neighbourhood, community, health education and spirituality, among others, are included in the assessment of quality of life.

5.8.2.1.1 Reliability and validity

The WHOQOL Group conducted the psychometric properties test of the WHOQOL-BREF in 23 countries (Skevington et al., 2004). Pearson correlation between the WHOQOL-100 and the WHOQOL-BREF domains was conducted. The Cronbach Internal consistency test, as well as a discriminate validity test, was conducted. A sample of (n=11 830) participants was drawn from sick and healthy adult populations in different settings. The population included communities in

public places, hospitals, rehabilitation centres, and primary health care settings serving patients with physical and mental disorders. Results as reported by Harper and Power (1993) showed high correlations between the domain scores. Correlations ranged from .89 to .95 for domain 3 (physical health) and the social relationships (domain 1) respectively. The Cronbach alpha values for each of the four domain scores ranged from .66 (for domain 3) to .84 (for domain 1), demonstrating good internal consistency. The conclusion from the WHOQOL Group (1993) psychometric properties test is that both the WHOQOL-100 and the WHOQOL-BREF have a good discriminant validity, content validity and test-retest reliability.

In this study, the domain scores as well as the individual facet scores were analysed and discussed. Exploring perceptions of the quality of life is part of a broad mixed methods project on health and wellbeing on the Transnet-Phelophepa HCT. Therefore the results will offer policy-makers an indication of areas that warrant further research or policy changes.

5.8.2.2 **Experiences of life on the Transnet-Phelophepa HCT: interview guide**

Data collection was achieved through conducting individual in-depth interviews, using a semi-structured interview guide (Appendix 7). The interview guide consisted of one main question and several probing questions to expand on and clarify aspects related to working and living on the Transnet-Phelophepa HCT. Demographic data were not collected as participants had raised the issues of anonymity and confidentiality earlier on.

5.8.2.2.1 Trustworthiness

In qualitative research, the quality of the findings is measured through the model of trustworthiness (Shenton, 2004:63). The model of trustworthiness based on that of Guba (1985) was applied in this study. The model is based on identification of four aspects of trustworthiness: credibility, dependability, transferability and confirmability.

5.8.2.2.1.1 Credibility

Is an evaluation of the extent to which the research findings represent a true presentation and interpretation of the data drawn from the permanent service providers on the Transnet-Phelophepa HCT (Lincoln and Guba, 1985:296).

- Prolonged engagement

  Independent interviews were conducted. The in-depth and lengthy engagement with the participants gave the researcher an opportunity to identify recurring concepts and themes and to reflect on the understanding gained regarding experiences of life on the Transnet-Phelophepa HCT. The researcher engaged with participants until data saturation was reached, and this is reflected in the transcripts of the audio recordings that were done following the interviews.

- Peer examination

  To further enhance credibility, data were coded by an independent coder and a consensus discussion was held with the researcher. The co-coder is an expert in qualitative research. Furthermore, discussions were held with the supervisor to confirm the findings.

- Member checking

  Member checking was done for clarification with the service providers during the data collection and analysis, as well as while formulating recommendations for health and wellbeing on the Transnet-Phelophepa HCT.

5.8.2.2.1.2 Transferability

Krefting (1991:216) states that transferability is the extent to which the findings can be applied to other contexts and settings. Transferability is furthermore referred to as the applicability of the research findings in another setting.

Applicability of this research process to other settings was ensured through providing detailed background information on the setting as well as sufficient contextual information about the field work.

A thick description of the purposively selected study participants as well as a very detailed description of the results is provided. The description of the results is supported by direct quotations from the participants and applicable literature.

5.8.2.2.1.3 Dependability

Dependability refers to the criterion of consistency in the qualitative approach (Krefting, 1991:217). Shenton (2004:71) further explains that dependability can be

achieved through accurately reporting the methods used for data gathering, analysis and interpretation.

The strategies applied in this study to ensure consistency include:

- Audit trail strategies

  Audit trail strategies involve the process of data management. In this study, an in-depth account of how the data collection was conducted, how audiotapes were transcribed and how raw data was analysed is described systematically. An independent co-coder was consulted to audit the data and assist with objectively analysing it.

5.8.2.2.1.4 Confirmability

Confirmability is a measure of how well the inquiry's findings are a reflection of the participants' experiences and ideas of the informants, as well as how well these are supported by data collected (Lincoln and Guba, 1985:318). One of the strategies suggested by Shenton (2004:72) is a detailed methodological description that will enable the reader to make a value judgement regarding the extent to which the emerging results can be accepted.

5.8.3 **Data Collection Process**

All permanent service providers were individually provided with the information, and then invited to participate in the Quality of Life (QOL) survey (Appendix 6.1) and the qualitative study (Appendix 7.1). The permanent service providers were made aware that these were two separate studies and that the methods of data collection were not the same.

The data collection process for the two studies is discussed below.

5.8.3.1 **Quality of life survey**

The researcher travelled to where the train was stationed for the purpose of data collection. All permanent service providers were individually approached and provided with a participant information letter (Appendix 6.1) inviting them to participate in the study.

The service providers who agreed to participate in the study were handed an unmarked sealed envelope with a questionnaire (Appendix 6). They were requested to complete the questionnaire during their spare time and to place the sealed envelope with the completed questionnaire in a box placed in the dining coach. However, on completion of the

questionnaire the service providers individually handed the sealed completed questionnaires back to the researcher during a one-week period when the researcher was on the Transnet-Phelophepa HCT. Completion of the WHOQOL-BREF questionnaire implied consent to participation in the study.

5.8.3.2 **Experiences of life on the Transnet-Phelophepa HCT**

The researcher scheduled appointments with the permanent service providers after their work hours. Data were collected during the month when they had completed the nine months' period of service provision and were being accommodated at a hotel specifically for report-writing and preparations for the coming year. Appointments were scheduled at a time and in a venue that was convenient for the participants.

Data was mainly collected through in-depth interviews using a semi-structured interview guide (Appendix 7). The purpose was to explore and describe each participant's inner world-view of the Transnet-Phelophepa HCT. Once more, each participant was given the information letter to read, and was then offered forms to sign for consent to the interview and the audio-recording. Furthermore, the researcher reassured the participants that confidentiality would be maintained throughout so that they would feel free to share their experiences. Once the two consent forms had been signed, the two tape recorders were switched on and the interview process began with a single open-ended question:

'Tell me about working and living on the Phelophepa Health Care Train'

The open-ended question was followed by probes and follow-up questions. The interviews ranged between 45 minutes and two hours in duration.

The interview process with each individual continued until data saturation was achieved, which occurred after eight interviews had been conducted.

The tape recorders were switched off at the end of each interview, followed by an opportunity for the participant to ask questions.

Apart from the data collected through the interviews, the researcher also kept a written account of the sequence of events, aspects of the interviews such as words or phrases used or reactions of the participants, as well as the researcher's own experience during the data collection field work. Polit and Beck (2012:548) encourage researchers to keep a detailed account of the research process, stating that field notes are important in all types

of research as they help the researcher to reflect and gain understanding of the data and can also be a source of data for analysis. The following is an explanation of the field notes recorded:

- **Demographic notes** were recorded of each participant's appointments, and the time, date and place where the interview was conducted. With regard to the demographic characteristics, only the gender was noted, as the small multidisciplinary team had easily identifiable professional characteristics.

- **Methodological notes** were recorded that served as a self-reflection tool for the data collection process as well as reminder for the methodological approach (Polit and Beck, 2012:549).

- **Personal notes** are based on the researchers' reflections and self-evaluation of one's own feelings so that the researcher could bracket feelings that might have an impact on the findings of the study.

5.9 DATA ANALYSIS

5.9.1 Quality of Life

The collected questionnaires were thoroughly checked for completeness before being coded into Microsoft Excel using a password-secured personal computer. A total of 17 returned copies of questionnaire were coded and entered into a Microsoft Excel spreadsheet, and the data were then imported into IBM SPSS 22 for data analysis. Descriptive and inferential statistics were used to obtain the results of the study. The following statistical tests were used.

- Descriptive statistics in term of frequency and percentage were used to discuss demographic data.
- The Pearson Correlation coefficient was used to test for significant relationships between different domains.
- Questions were further grouped into domains and items in each domain were summed together to get the domain raw score. Then, the mean scores are multiplied by four, with a minimum of 4 and a maximum of 20, to make these values comparable with the scores used in the WHOQOL-100, and finally transformed to a scale from 0–100, with 0 as the minimum and 100 as the maximum. Testing was done at a 0.05 level of

significance (p=0.05) with a 95% confidence interval; all percentages were rounded up to one decimal place.

5.9.2 Experiences of Life on the Transnet-Phelophepa HCT

Data analysis for experiences of the permanent service providers began with verbatim transcription of each of the interviews from the audio recordings. The researcher then read through all the transcripts to obtain a global impression of the content and to have a pattern of emerging aspects relevant to the research question. Data were then analysed using thematic content analysis. The process involved constant comparison and coding of the generated data.

The data analysis process commenced with:

- Verbatim transcription of the each of the interviews from the audio recordings. The researcher then read through each transcript to obtain a sense and an impression of the content, tracking patterns from the actual words used by the participants (Henning, 2004:105).
- Each transcript was summarised with the focus of establishing the perspective of each participant.
- The transcripts were individually read again, looking for similarities in the actual words of the participants.
- While reading, colour pens were used to highlight terms that were then sorted out in a systematic process of looking for frequencies, omissions and declarations.
- A particular descriptive code label was assigned to each colour code to facilitate easy retrieval for horizontal comparison and analysis. This process resulted in a list of frequent terms and identified non repetitive, non-overlapping units.
- Data were then coded, compared to other data and assigned codes, and clustered to categories and arranged into columns.
- The list of themes was re-analysed in comparison to the original data and supportive statement identified.

The process of thematic analysis was used to identify and categorise the data that describes the experiences of the Transnet-Phelophepa HCT permanent service providers.

5.10 RESULTS: QUALITY OF LIFE (QOL) SURVEY

Eighteen permanent service providers (n=18) had agreed to participate in the QOL survey. However, seventeen questionnaires (n=17) were completed and returned, resulting in a response rate of 94.4%.

5.10.1 Demographic results

The demographic data presented in this section is illustrated in Table 5.3. The majority of the participants in this survey 52.9% (n=9) were male while 47.1%(n=8) were female. The results showed an equal distribution (47.1%, n=8) for the single and married participants while 5.9% (n=1) were widowed. The result further showed that the majority (68.4%, n=13) had tertiary education while only four (31.5%) had obtained grade 8–12 education. The majority of the participants (64.7%, n=11) had been employed on the Transnet-Phelophepa HCT for more than five years.

Table 5.3: The socio-demographic characteristics of the sample

		Number	%
Gender	Females	8	47.1
	Male	9	52.9
Age	20–29	7	36.8
	30–39	3	15.7
	40–49	1	5.26
	50–59	7	36.8
	≥60	1	5.26
Education	Grade 1–7	0	0
	Grade 8–12	4	31.6
	Tertiary	13	68.4
Marital Status	Single	8	47.1
	Married	8	47.1
	Widowed	1	5.9
Years working on the T-PHCT	<5 years >5 years	11 6	64.7 35.3

5.10.2 Quality of Life Results

Questions 1 and 2 that pertain to the Global Quality of life (GQOL) and Health- Related Quality of Life were analysed separately, as suggested by the WHOQOL Group (1995). The results are presented in Table 5.4. Included in the results is the supporting evidence from Table 5.5 related to facets of the WHOQOL-BREF tool.

The results for Global Quality of Life (GQOL) showed that the majority of permanent service providers (87.6%, n=15, mean score=4.12) perceived their quality of life as 'good' and 'very good'. The remaining providers (11.8%, n=2) said it was neither poor nor good (Table 4.5 and 5.6:1).

The results of a follow-up question on how satisfied they were with their health obtained a mean score of 4.06 (interval 1 to 5) with the majority (82.4%, n=14) being 'satisfied' and 'very satisfied' with their health (Table 4.4 and 5.6:2).

These results are similar to the Chilean hospital nurses GQOL results (mean score of 3.99, interval of 1–5 with 80.4%) and HRQOL results (mean score of 3.97,79.8%) as per Barrientos and Suazo (2007).

Table 5.4: Global quality of life, health-related quality of life and the domain scores

	Number	Mean	Minimum	Maximum
Global Quality of Life	17	4.12	3	5
Health-Related Quality of Life	17	4.06	2	5

On analysis of the QOL per Domain, the findings indicate high quality of life in the Psychological Domain, mean score = 72.06, while the Physical Domain received the worst rating, with a mean score of 58.824 as indicated in Table 5.5.

In this section the results of the Global Quality of Life and Health-Related Quality of Life were presented. The results per domain shown in Table 5.5 as well as the aspects of the Quality of Life in Table 5.6 are discussed in section 5.10 in relation to the findings of the qualitative study.

Table 5.5: Permanent service providers' quality of life according to domains

		Mean	Standard Error	Std deviation	Minimum	Maximum
Domain 1: Physical Health	17	58.824	2.891	11.920	39.29	82.14
Domain 2: Psychological Health	17	72.059	4.254	17.541	41.67	100.00
Domain 3: Social Relationships	17	63.196	4.302	17.735	33.33	100.00
Domain 4: Environmental Health	17	63.052	3.657	15.078	34.39	87.50

Table 5.6: Frequency responses (%) for facets of the WHOQOL-BREF (n=17)

	Very Poor	Poor	Neither	Good	Very Good
	1	2	3	4	5
(1) General QOL	0(0)	0(0)	2(11.76)	**11(64.1)**	**4(23.53)**
(2) General Health	0(0)	1(5.88)	2(11.76)	**9(52.94)**	**5(29.41)**
Physical Health Domain					
(3) Pain and comfort	1(5.88)	3(17.65)	1(5.88)	**4(23.53)**	**8(47.06)**
(4) Dependence on medication	0(0)	0(0)	3(17.65)	**4(23.53)**	**10(58.82)**
(10) Energy and fatigue	0(0)	1(5.88)	6(35.29)	5(29.41)	5(29.41)
(15) Mobility	0(0)	1(5.88)	7(41.18)	5(29.41)	4(23.53)
(16) Sleep and rest	1(5.88)	3(17.65)	3(17.65)	9(52.94)	1(5.88)
(17) Activities of daily living	0(0)	0(0)	2(11.76)	8(47.06)	7(41.18)
(18) Working capacity	**0(0)**	**0(00)**	4(23.53)	7(41.18)	6(35.29)
Psychological Domain					
(5) Positive feelings	0(0)	0(0)	5(29.41)	**7(41.18)**	**5(29.41)**
(6) Life meaningful	3(17.65)	0(0)	3(17.65)	**6(35.29)**	**5(29.41)**
(7) Memory and concentration	1(5.88)	0(0)	2(11.76)	10(58.82)	4(23.53)
(19) Self-esteem	0(0)	0(00	4(23.53)	7(41.18)	6(35.29)
(11) Body image	0(0)	4(23.53)	1(5.88)	4(23.53)	8(47.06)
(26) Negative feelings	0(0)	0(0)	**9(52.94)**	0(0)	0(0)
Social Domain					
(20) Personal relations	0(0)	3(17.65)	2(11.76)	8(47.06)	4(23.53)
(21) Sex	1(5.88)	4(23.53)	6(35.29)	4(23.53)	2(11.76)
(22) Practical social support	0(0)	0(0)	4(23.53)	10(58.82)	3(17.65)
Environment Domain					
(8) Physical safety and security	0(0)	2(11.76)	6(35.29)	5(29.41)	4(23.53)
(9) Health of environment	0(0)	2(11.76)	7(41.18)	6(35.29)	2(11.76)
(12) Financial resources	0(0)	3(17.65)	8(47.06)	5(29.41)	1(5.88)
(13) Information and skills	0(0)	2(11.76)	7(41.18)	5(29.41)	3(17.65)
(14) Recreation and leisure	1(5.88)	5(29.41)	8(47.06)	2(11.76)	0(0)
(23) Physical environment	0(0)	1(5.9)	7(41.2)	6(35.3)	3(17.6)
(24) Access to health care	0(0)	0(0)	3(17.6)	6(35.2)	8(47.1)
(25) Transport	3(17.6)	0(0)	3(17.6)	3(17.6)	8(47.1)
(23) Living conditions	1(5.9)	0(0)	7(41.2)	6(35.3)	3(17.6)

5.11 INTEGRATED DISCUSSION AND LITERATURE CONTROL

This section is a discussion of the thematic content analysis findings of the permanent service providers' experiences of life on the Transnet-Phelophepa HCT in relation to the associated quality of life domains. The discussion in this section also includes related literature review control for the qualitative component.

Data analysis coding was guided by the open coding method and the following central question: **'Tell me about working and living on the Phelophepa Health Care Train'**
Four themes, five categories and thirteen sub-categories were identified from constant comparison thematic content analysis as shown in Table 5.7.

The first two themes identified concerned the participants' positive and negative experiences of working and living on the Transnet-Phelophepa HCT. The third theme deals with aspects that were raised regarding safety, while the third and the fourth themes address availability of support and participants' suggestions respectively.

Following the constant comparison analysis process, the emerging themes, categories and subcategories were reviewed to establish aspects of the permanent service providers' experiences of life on the Transnet-Phelophepa HCT that were indicative of or associated with the Physical, Psychological, Social and Environmental Domains of quality of life. In the literature, the domains of quality of life have been used as indicators of health and wellbeing (Sirgy et al., 2008:81–105). It is in this context that the quality of life domains are used as the predominant topic to usher in the discussion related to the emerging themes, categories and sub-categories of the aspects related to permanent service providers' lives on the Transnet-Phelophepa HCT.

Table 5.7: Themes, categories and sub-categories identified

Theme	Category	Sub-category	QOL Domains	Rating
1. Positive & negative experiences of **working** on the T-PHCT	Participants experience of **working** on the T-PHCT	Exciting and inspiring	Psychological	1
		Team as family/ T-PHCT as family		
		Humbling, memorable experience with patients		
	Participants experience **working** on the T-PHCT as **challenging**	Long working hours	Physical	4
		Workload		
2. Positive & negative experience of **living** on the T-PHCT	Participants experience l**iving** on the T-PHCT as **challenging**	Space challenge	Environmental	3
		Unhealthy living environment		
		Challenges to professional development		
		Lack of social life		
		Being away from home		
3. Safety & security & occupational hazards	Participants recognise that T-PHCT is safe but there are **risks involved**			
4. Support structure	Support available	Management support	Social	2
		Family/ significant other		
		Team /student support		

5.11.1 **Theme 1**

5.11.1.1 **Psychological domain**

The psychological domain aspect relates to psychological wellbeing, which is a reflection of a person's evaluations and interpretation concerning the self. Included in this aspect is the concept of self-control, adjustment and coping mechanisms, life experiences, and expressions of life's meaning, which could be positive or negative feelings (Teles, Barbosa and Vargas, 2014). Psychological wellbeing has an influence on an individual's quality of life.

The results from the QOL survey showed that the Psychological Domain mean score = 72.06 indicating it is the first highest positive rated quality of life as illustrated in Table 5.5.

The findings in Table (5.6:5 and 6) are consistent with the permanent service providers high quality of life in the Psychological domain. The results showed that the majority of the participants (70.6%, n=12) expressed positive feelings towards life enjoyment and a majority (64.7%, n=11) also said they live a meaningful life ('considerably' or 'very much so').

Positive and negative experiences of working on the Transnet-Phelophepa HCT are the psychologically related themes identified from the permanent service provider qualitative study as indicated in Table 5.7 (Theme 1). Linked to Theme 1 are one category and three sub-categories.

Sub-category: Exciting and Inspiring

The first sub-category relates to participants who experienced working on the Transnet-Phelophepa HCT as exciting and inspiring (Table 5.7). The following statements support this sub-category.

One participant said '…*I must say it's very exciting to see the structure of the train of having all the services which are normally offered in a clinic, a well built up clinic in the community but coming to Phelophepa nobody can expect a train to have so many eh health facilities…*' (Int. 6)

Another participant added that:

'*Besides exciting? It's a phenomenal experience; it's something that you wouldn't get anywhere else…*' (Int. 1)

One participant commented on the experience of working among a diverse team of people, expressed in this way:
'*Life on the train is very exciting. First of all its cultural integration, with different cultures, different religions, different everything…*' (Int. 3)

Another participant added that their excitement was not only about working in a diverse team but also from being exposed to different places:
'*…ok I enjoyed it because you get to see different places and meet different people all the time; it's not a routine kind of a thing cause I'm one person who is like very dynamic cause I like things that change not routine…'* (Int. 8)

With regards to differences in background and origin, a participant had this to say:
'*….Despite us coming from different backgrounds and whatever but when we come to the train we become one family and then we work towards the same goal so I think that is important*'.

The statements above indicate diversity self-awareness and diversity awareness among the permanent service providers. Jeffreys (2008:37) explains that diversity awareness is important as people are able to reflect on their own identity based on culture, values and beliefs, and to recognise differences within other cultural groups. Furthermore, it is important to create workplaces that embrace diversity among health care workers. Jeffreys (2008:37) in addition warned against ignoring diversity as this could lead to disharmony and workplace conflict, and it could adversely affect patient care.

A statement from one of the permanent service providers (*'I think once you're on Phelophepa team you learn to become a family…'* in Int 2) suggests that permanent service providers embrace diversity. They have gone beyond the boundaries of diversity, wherein they recognise and regard themselves not only as a team, but also as family. Furthermore, they recognise the importance of being a strong team role player within the interdisciplinary team for successful service provision, as reflected in the discussion in sub-category 1.1.2.

Sub-category: Phelophepa as a family

The emerging concept of 'team as a family' or 'Phelophepa as a family' within a working environment, suggests characteristics of an interdisciplinary team that is able to work through the traditional professional boundaries.

Nancarrow, Booth and Ariss (2013:11) reported on findings of a systematic review aimed at identifying principles of good interdisciplinary team work. Responses from two of the permanent service providers in this study are in line with four of the ten principles emerging from Nancarrow et al.'s findings (2013).

One of the principles as stated by Nancarrow et al.'s (2013) is 'individual characteristic[s] that support interdisciplinary team work'. One of the participants mentioned the importance of recognizing one's position and strength in successful team work as evidenced by:
'*Phelophepa is more like a family, you know; it's more like a chain and none of us can afford to be the weak part of it, we all have to be the strongest link.*' (Int. 2)

The above statement is again in line with the principle of working in a 'supportive team climate' and 'respecting and understanding roles of others'.

The statement below suggests that the permanent service providers also recognise that they need one another as a source of psychological support and also of creating a supportive environment as indicated below:
'….*that's your family away from home and you need to survive because without it you can lose your mind on this train; because when something has upset you, you need to talk to someone.*' (Int. 2)

Sub-category: Humbling, memorable experiences with patients
Two participants mentioned that their source of inspiration is the appreciation of the service users as stated by one of the participants:
'…*to see the recipients of this eh eh eh services are so grateful, you know that humbles me. Because as they call it a miracle train*…' (Int. 6)

Another participant described it as a memorable experience:
'…. *when you get to see patients and at the end of the day when they have to thank you, you know that's, that's, that's a memorable experience.*' (Int. 1)

Work can be experienced as positively or negatively affecting health and the quality of life, as Teles et al. (2014) have stated. The findings from the QOL survey and the qualitative study showed that the permanent service providers expressed a positive sense of psychological wellbeing. However, it is important to note that 47.1% (n=8) of the

participants did not respond to the QOL question that explored experiencing negative feelings. Fifty-two percent (n=9) admitted that they often had feelings suggestive of stress or depression (Table 5.6:26). Stress and depression are some of the mental health issues that can have a major impact on general wellbeing. Duyan, Aytac and Akyildiz et al. (2013:15) point to the importance of organisations developing processes aimed at employee effectiveness and happiness. In line with this suggestion, Duyan et al. (2013) recommend that institutions should focus on measuring the quality of work life and job related wellbeing, since the quality of working life is one of the determinants of quality human resources.

5.11.1.2 **Physical domain**

The focus of measuring the Physical domain is on aspects that could have a positive or negative impact on the body as well as the individuals' energy and capacity to do work-related functions and activities of daily living. The Physical Domain in this study received the lowest mean score of 58.82, indicating a low quality of life (Table 5.5). The results showed that twelve (70%) of the participants reported experiencing physical pains that prevented them from functioning optimally and fourteen (82.4%) were dependent on medication (Table 5.6:3; 4).

It is noted that, although the majority of the participants had reported physical pain and discomfort as well as being dependent on medication, the results show that none of the participants were dissatisfied with their working capacity or with engaging in activities of daily living (Table 5.6; 17 and 18).

The results from the qualitative enquiry showed that long working hours and workload were the only two Physical Domain related sub-categories.

Sub-category: Long working hours

Participants recognise that working on the Transnet-Phelophepa HCT is strenuous due to long hours and heavy workload. Furthermore, they expressed feeling tired and stated that this has an impact on their capacity for work.

In this regard, a participant stated that:

'…*here there are no time frames. You just start work good enough at 8 and you may go home at 9 o clock in the evening…*' (Int. 2)

Another participant clarified that:
'….but the worst part is that we do not have time to knock off, and my department is very tough, because you stand the whole day; I don't even get a chance to sit down so I can feel that 'ah no iyangikathalisa [it exhausts me] too much…' (Int. 7)

Sub-category: Workload

The workload was described as being strenuous and some expressed difficulty with coping. Two participants expressed the following with respect to workload:
'…*the workload I must say eh is quiet strenuous to be honest because you cannot leave this train until the last patient is seen, a patient who has registered…*' (Int. 6)

The same participant further stated that:
'…*the number of patients coming onto the train; the staff cannot cope with the number of patients...*' (Int. 6)

Another participant stated that:
'*… 9 months so having to consider another year having the same workload, you find like sometimes that your body can't take it any more you know, it's like you rest assured like now I can't, so which means if you get a new person on a yearly basis they can perform towards ... their maximum*..' (Int. 4)

A third participant also felt that it is strenuous working on the Transnet-Phelophepa HCT, and expressed respect toward fellow colleagues as the work is demanding and also has an element suggestive of a monotonous routine, as evidenced by this comment:
'…I've got a high respect for people who serve in this train, continuously for 35 you know weeks as it's mentioned. It's not an easy task because all what you do, you work, you wake up in the morning, you eat breakfast, the food is good and there after you go and work. Work Work Work!' (Int. 6)

It is interesting to note that in this study the Physical Domain is the quality of life facet that was given a high rating compared to the others, despite the fact that there were aspects that could have a negative impact on their physical wellbeing. Working on the Transnet-Phelophepa HCT is described as being strenuous due to workload and long hours on duty. However, these conditions seem not to affect the participants as almost 60% (n=10) responses had 'much' and 'very much' energy for everyday life as indicated in Table 5.6

(10). The same percentage of participants reported being satisfied with their sleep patterns and rest periods (Table 5.6:16).

Similar results were reported in another study conducted in Iran, measuring quality of life in health-care staff, where the highest mean satisfaction rating was for the Physical Domain. According to Gholami, Jahromi, Zarei and Dehghan (2012:813) the high satisfaction rate implies positive activities in daily living, less dependence on medical substances, and less pain and discomfort, among others.

The results from this current study are similar to Gholami et al. (2012:813). Physical Domain was ranked the lowest and the majority of the Transnet-Phelophepa HCT permanent service providers reported experiencing pain and discomfort to a greater extent as well as being considerably dependent on medication to function in their daily lives. Yet another study showed similar results. In a study conducted on the factors associated with quality of life in Chilean female hospital nurses, the Physical Domain was rated as the worst (mean=54.56). Fatigue, pain, lack of sleep and working night shifts were some of the factors that had a negative impact among the female hospital nurses.

5.11.2 **Theme 2**

5.11.2.1 **Environmental domain**

Satisfaction with work environment is recognised as an important aspect as it has a direct impact on the workers' satisfaction with their jobs. Higher levels of satisfaction with the job in turn contribute towards health and wellbeing of the workers (Young Lee, 2006:343).

Work environment, in the context of the Transnet-Phelophepa HCT, refers to both the physical workplace and the 'live at work' space, as the size of the space in/on the train and the immediate external space (the train railway stage) is the same. The difference is in the interior design of the work and home space.

Ripley, Hudson, Turner and Osman-Gani (2006:43) explain that the work environment consists of all the factors and variables external to the individual employee that could have an impact on an individual's performance.

Lindberg and Vingard (2012:3033) described a 'good work environment' as a setting where factors that could expose workers to ill-health are addressed on an ongoing basis, thus promoting each individual's wellbeing.

Findings in this study showed that the Environmental Domain generally received the third lowest ranking (mean = 63.052). Similar results of the lowest ranking (mean = 13.09) were reported in Gholami et al. (2012:814). The results showed that there was dissatisfaction with financial resources, with lack of opportunities for acquiring new information and with skills and leisure.

In this study, the environmental aspects emerging from the qualitative interviews included challenges related to studying, physical space, lack of social life, unhealthy living environment, and being away from home, and issues related to safety, security and occupational hazards. It is noted that the scope of the participants' reflection on the environment is inclusive of the physical, social, psychological and environmental aspects.

Sub-category: Confined spaces

King (1981) (in George 2011:237) describes space in the context of a territory. However, King alludes to the fact that there is no absolute definition, as it is a personal definition based on the individual's subjective perception or associated with an event (King, 1981; in George, 2011:237).

Falk, Wijk and Persson (2008:717) conducted a study to determine elderly residents' quality of life and wellbeing and explained that within the physical environment, there are psychological supportive attributes that are believed to affect the individual's wellbeing. Falk et al. (2008:717) further state that features such as furnishing and elements that characterise a home-like setting should be designed to suit not only the elderly but also the needs of all patients, since these features generally contribute to wellbeing.

The WHOQOL-BREF results showed that just over half of the sample of 17 permanent service providers (n=9) were satisfied with the living conditions, while 41.2 (n=7) were neither dissatisfied nor satisfied (Table 5.6:23).

The emerging concepts from the qualitative enquiry showed that a number of participants described the limited physical space on the Transnet-Phelophepa HCT as challenging. Issues raised included the limited internal movement space. Psychologically, it felt like being in an enclosed setting similar to a solitary confinement space, as articulated by three participants:

'*…That's the bad part of it, closed spaces, confinement.*' (Int. 2)

'…… *to me I really feel as if you are in jail, I must say it's like a confinement; you can't move…*' (Int. 6)

'*That's the worst, that's the first stress for me.* [*Laughs*] *it's because the problem is that akuna space* [*there is not enough space*].' (Int. 7)

An additional participant expressed that the limited overall space had an impact on personal working space:
', it's kind of a very confined space so everyone is in everyone's face...' (Int. 8)

Despite the negative aspects raised above that could have a harmful impact on the quality of life and wellbeing, there are also positive aspects emanating from this setting as participants adapt and adjust to this environment. The Transnet-Phelophepa HCT physical environment space is described as a homely space, as evidenced by this participants' view:
'…*To me it's just another home; it's a second home to me. So I think I can just call it my second home…*' (Int. 2)

Another participant added that it is an environment where people from different backgrounds find a common ground at work:
'*The train becomes your home away from home, so despite us coming from different backgrounds and whatever, but when we come to the train we become one family and then we work towards the same goal, so I think this is important.*' (Int. 8)

Participants also perceived working on the train as being conducive to teamwork, and encouraging people to work as a team. As one of the interviewees said:
'…*we work as a team despite all that. It's very interesting and all the time it's dynamic*…' (Int. 3)

In summary, the Transnet-Phelophepa HCT physical environment space is described as being both a homely environment and an environment that stimulates and encourages team work.

However, findings from the qualitative enquiry showed concerns related to the 'healthy status' of the physical environment space as indicated in the following sub-category.

Sub-category: Unhealthy living environment

In response to the question: '*To what extent is the physical environment healthy*?', less than half of the participants (47%, n=8) described it as a *'healthy'* and '*very healthy environment*' while 41.2% (n=7) responses were '*more or less healthy*' (Table 5.6:9).

As one participant says:

'… [it] is very stressful because [of] the smell, because mine [my room] is next to the toilet so when the toilet is full that's when the problem comes because lama basin eswashelaIzandlaangenisaismell [the basins that we use to wash our hands give off a bad odour] as well as idust [dust] from the train moving.' (Int. 7)

Another confirms that:

'…*the environmental hygiene [is important] because I mean there's a whole lot of people using a very small space, so there must be proper or strict measures that are put in place in terms of the people who are responsible for the hygiene in terms of the people who clean the toilets, to make sure that the toilets are cleaned at least…*' (Int. 8)

The ICN/PC (2008) June Fact Sheet describes unhealthy work environments as one of the causes of the global health workforce crisis. This kind of setting has an impact on individuals' physical and psychological health and wellbeing. The ICN/PC (2008) advocates for the establishment of Positive Practice Environments which are will ensure the health, safety and personal wellbeing of staff.

Sub-category: Challenges to professional development

The *Mail and Guardian* newspaper of 6 May 2013 published an article titled 'Keeping Your Professional Development Continuous'. The author of this article encourages people to continue to develop themselves, as one of the benefits is protecting ones' employability (*Mail & Guardian* newspaper, 6 May 2013: Careers section).

The Transnet-Phelophepa HCT qualitative study participants indicated that they are afforded opportunities for professional development and further career advancement. However, factors such as physical exhaustion and access to information are a challenge, as stated by at least two participants:

'…enrolling for those courses, sometimes it's quite a challenge, because in other areas maybe we move, then you need internet access and it's not easy because of bad or poor

signals as such. Then if its long distance, studying using mail bags; it's quite a challenge because we get mailbags after two weeks and you need to submit your assignments so you know, it's not favourable, to ensure progress in your studies…' (Int. 4)

'*…in terms of career development it is because after work you're tired and when you start studying, uzongcinaibookobuyibheka la ebusweni [you'll end up falling asleep on the books] uphaphaebusukuibookoehlelila [and when you wake up in the middle of the night you'll find your books on your face] then maybe lomsebenziowenzayo [it's the impact of the long work hours you do]…*' (Int. 7)

The results in Table 5.6 (13) confirm the above stated challenges as less than half of the participants (46.9%, n=8) stated that the information they needed was considerable and very much available. According to the ICN/PC (2008), this is a concern as research has demonstrated that health professionals are more likely to remain in a place where opportunities for professional advancement are available. The demographic profile of this sample shows that more than a third (35.3%, n=6) of the permanent service providers have been working on the train for more than five years.

Sub-category: Lack of social life

The results in Table (5.6:14) show that only two participants' (11.8%) responses indicated the availability of recreation and leisure. Almost 50% of the participants' (n=8) responses lie in the middle rating 'more or less' as indicated by this participant's response:
'…*There's no social life here, it's just occupational that's all; mainly occupational you just work and work and then, unless you create your own*.' (Int. 2)

Participants emphasised that:
'There's not much of a social life; social life is for us to make when we are off…'
(Int. 3)

Another elaborated and said:
'…*there's no social life because you work hard, by the time you finish you're just tired. Social is minimal anyway you make it yourself, but there's no social…*' (Int. 1)

Sub-category: Being away from home (5)

Being away from home is one of the factors that has a direct impact on work-family balance and thus affects an individual's quality of life and wellbeing. Work–family balance

means that each role at work and in one's family is attended to with an approximately equal level of attention, time, involvement or commitment (Greenhaus et al., 2002:512). According to Kreiner, Hollensbe and Sheep (2009:704), having a balanced work/home life is a significant and sought-after state of being. To be balanced is desirable, especially in individuals whose work context and nature of work and the environment lends itself to being away from home for long periods of time (Couper et al., 2007:1083). Some of the common challenges experienced with working away from home is missing one's family and leaving family roles unfulfilled, as one of the participants stated:

'… *you see your loved ones after quite a period, and another thing, there might be family gatherings/family matters which are taking part on the other side of the world and you are not able to attend such events, being on the Phelophepa healthcare train. Then you see your family and loved ones after a period of just about a month, 2 weeks' time intervals you know…'* (Int. 4)

Another participant mentioned that this kind of work setting could have a negative impact on wellbeing:
'…the social wellbeing is also affected because eh you are away from your home for so long...' (Int. 6)

Despite the challenges of being far away from home and missing loved ones, the permanent service providers still felt inspired to stay on, to continue to serve the community**.** The following excerpts suggest this:

'*Being away from home, hai... being away from home is not an easy thing; it's difficult honestly, but knowing why you're there makes it kind of simpler... but not really simple…'* (Int. 1)

'*I think, more than anything else, seeing people being helped; that's what makes me happy. Other than that, I don't think there's anything that can replace that*…' (Int. 2)

Another participant expressed a sense of fulfilment from seeing the responses of the service users at the end of the consultation process, and said:

'*You just give, and only thing you get back is a smile and that means a lot, a spirit of gratitude and a smile...' (*Int. 2)

The above quotes suggest that the inspiration to stay on is motivated by understanding the needs of the community, and the sense of fulfilment experienced thereafter. These findings are in agreement with Couper et al.'s view (2007:1083) that the health professionals' ability to stay in jobs far from home is driven by their desire to serve as well as their sense of responsibility to give back to the community. Other factors stated by Couper et al. (2007) were situational factors in rural and remote areas such as quietness, less traffic on the roads, and general safety. However, a relaxed setting where there is less traffic could pose a challenge for people who do not have their own transport as geographically isolated rural or remote areas have problems related to access to basic amenities. In this study, relatively few participants (17.6%, n=3) expressed that they were very dissatisfied with transport accessibility. The majority (64.7, n=11) were 'satisfied' and 'very satisfied' as indicated in Table 5.6:24.

One of the participants expressed concern about the availability of transport for basic needs and socially-related needs as expressed below:
'…….*the Transnet rules: you're not allowed to go out with the Transnet vehicles because like before they didn't have a problem. After work, you like take a car [and] you go somewhere – come back; weekends you go like shopping – come back, so, but not now; Bayichenje* [*they've changed*] *the whole system…it does affect my social life*…' (Int. 7)

5.11.3 Theme 3: Safety and security and occupational hazards

It is management's responsibility to ensure safety of workers through establishing safety committees as well as systems of continuous monitoring and evaluation of the possible hazards in any work area.

Although the Transnet-Phelophepa HCT is regarded as a safe occupational environment, all of the participants had some concerns regarding safety on the health train. As stated by one of the participants:

'…*I move in the corridors, can't run, you know, sometimes we even think, if a fire can come where am I going to go*?...' (Int. 6)

'*Well safety... if you talk about the security, the train is under 24 hours surveillance, surveillance but I mean, that gives you know, assures me that I'm quite safe; there's nobody who can break in into my room*…' (Int. 6)

'…*We do, like especially kulama department amanye* [*in other departments*] *they get a lot of injuries, and in our department we don't really get many injuries because it is not too risky*…' (Int. 7)

'*I've mentioned at the working environment and mainly that deals with health issues, then my most fear is the issue of, then if there might be a serious virus or a bacteria you know that can be contracted through clinic areas, so which means that everyone who is residing in the train in that period of time then, they can contract the infections as such, and the other point, the train on its own it's risky you know*.' (Int. 4)

It is noted that the reported environmental related challenges could have an impact on the physical, psychological and social wellbeing of the individuals.

Ripley et al. (2006:43) emphasises the importance of conducting studies exploring employees' satisfaction with the work environment since there is evidence in research of the association between perception about the quality of the physical work environment, individuals' behaviour and job satisfaction.

Lee (2006:343) conducted a study to investigate the linkage between satisfaction with work environment and work outcomes.

The results in Lee (2006:350) showed a positive correlation between satisfaction with physical workplace and job satisfaction. The results furthermore indicated dissatisfaction related to environment that is conditions that are below the employees' level of expectation results. In addition, the results showed that a discrepancy between the employees' perceptions of the current work environment status in relation to level of expectation.

The results from the quality of life Environmental Domain validate the dissatisfaction with the environmental factors on the Transnet-Phelophepa HCT emerging from the thematic content analysis results. Rev Stewart-Sicking, an assistant professor of pastoral counselling at Loyola University Maryland in Baltimore, stated in an article that 'It is often not enough to change a person to bring about wellbeing; sometimes systems and environments also have to change' (Episcopal News Service, 2010).

This statement was expressed in a response to research findings of data collected over a period of 12 years in wellness in the Episcopal Church. The results revealed that the health and wellbeing of the Episcopal Church clergy posed a complex challenge.

The study results propose variables and resources that should be considered as a guide on the road to wellness. The variables include gender, family structures, isolation, and social support, as well as congregational stress and system analysis, among others.

The life of the clergy and the Transnet-Phelophepa HCT service providers are almost similar. The clergies in most instances do not have set office hours. Their social life is compromised as they have to be available for congregational member's needs. Noted is that clergy are reported to be happy and satisfied, and despite being stressed, they reported a high level of meaning in their work.

The suggested areas for further investigation emanating from the findings of Edwards et al. (2009) on Work-Related Quality of Life for higher education employees in the United Kingdom are similar to the aspects emerging from this study as Environment Domain challenges. Hence, the researchers recommend a Work-Related Quality of Life study.

5.11.4 **Theme 4: Social structures**

5.11.4.1 **Social domain**

The Social Health Domain concerns social relationships, social support and sexuality. The Social Domain mean = 65.196 compared to the other Domain means indicates the perception of Life rating second.

Three support-related sub-categories emerging from the experiences of life on the Transnet-Phelophepa HCT were found to be associated with the Social Health Domain. Family and significant others' support is the first category presented in this section.

Sub-category: Family/significant others

The results of the qualitative enquiry in this category showed that family support is the most valued when you are away from home, as one of the participants expressed:
'…I think the most important thing is to get their support from your family…' (Int. 8)

Another participant confirmed the importance of family support:

'…..I have a good family support structure, so if it's possible they will take a vacation and come over wherever I am, over the weekends when we're not working.' (Int. 1)

The results in Couper et al. (2007:1083) highlight the importance of family and partner support for individuals who work in areas far from home. The results of this study confirm the importance of family support. Furthermore, they highlight the influence the family or partner has in the decision to stay on, as stated by one of the participants:
'….and then he will say "*when I know your passion for primary health care but I'm supporting you so go on and on"*" (Int. 6)

The results from QOL survey showed that the majority (70.6%, n=12 and 76.5%, n=13) expressed ratings raging between 'satisfied' and 'very satisfied' for the extent of personal relationship and support given respectively.

In conclusion, support from family and friends plays an important role in facilitating an individual's ability to stay at work settings that are far away from home. Psychologically, it is very helpful to know that people understand the situation of remote-area employment. Furthermore, knowing that family understands one's passion and that there are people who will take over one's responsibilities in the family during one's absence is reassuring.

- Management support

  The permanent service providers expressed appreciation for management support for family-related issues as evidenced by the following statement:
  '…*from the management point of view, the support that they give us is… if you're having family issues and which are much more you know….. reasonable and heavier, then they do support us in such cases; they can allow you to go home*' (Int. 4)

  Participants also mentioned that management is very supportive on the issue of personal development studies. Participants were quoted as saying:
  '[*On*]*the issue of development towards your current position within* [*yawns*] *the train, they do allow you to go on workshops, courses as such.*' (Int. 4)

  '*As far as career aspirations are concerned, I think there is support, because whenever or at the end of the year, or beginning of the year, everybody is allowed to raise whatever course she wishes to do, to sort of grow in her profession.'* (Int. 3)

One of the participants observed that the Transnet-Phelophepa HCT management was doing their best in terms of offering support, saying:
'So the face that the Phelophepa team is portraying, portrays exactly what is going on in management; I think they're doing their best.' (Int. 2)

This positive support has inspired them to do their best in their day to day work activities.

- Team/student support

  Emerging themes from the qualitative enquiry also showed that the Transnet-Phelophepa HCT's permanent service providers recognise and acknowledge the support from the students and the training coordinators from different universities and colleges.

  '…*Support on the train... I don't think I've got much to say on that, but the support we get is that people, to me, I've found them to be... some being friendly and that motivates you…'* (Int. 6)

  '…*On support structure, number one is universities and colleges that supply us with students, without whom we wouldn't be able to move an inch. Those people are so committed and dedicated to what they're doing in support of the people on the train. And the other support structures are the coordinators that we get from the different areas that we get to*.' (Int. 3)

5.12 SUMMARY

In summary, the emerging categories from the qualitative study were merged with results from the QOL study. Recommendations were then formulated for health and wellbeing on the Transnet-Phelophepa HCT. Hopefully these recommendations will be adopted and used to strengthen health and wellbeing systems and processes on the health train. As quoted in an Episcopal newsletter (2006), 'It is not enough to change people. Change systems and processes.'

CHAPTER SIX

SERVICE USERS' INTERVIEWS: RESEARCH METHODS RESULTS AND DISCUSSION

6.1 INTRODUCTION

Ensuring service users' satisfaction on the services provided on the Transnet-Phelophepa HCT is an ever-more important part of primary health care. The Transnet-Phelophepa HCT facilitates access to quality services that are difficult for socioeconomically disadvantaged groups to obtain in rural and remote areas. For Murante (2009–2010:9), basic requirements for acceptable services include being designed to meet the population's needs, as well as ensuring that users are respected, that they receive prompt attention, and that the quality of amenities is maintained. Based on these requirements, it is important to explore the service users' experiences of the service provided. The process involves asking members of the public to evaluate service quality, in order to recognise and define problems and to identify their needs and expectations. (Smith et al. 2006)

A quantitative, descriptive design was used to explore the Transnet-Phelophepa HCT service users' opinions of health care provision. Factors likely to impact on service utilisation, such as knowledge of the Transnet-Phelophepa HCT services, user preferences, and accessibility were explored.

6.2 RESEARCH METHODS

6.2.1 Study Population and Sample

The survey's target population was all the service users arriving for health care consultation in the fifth week of an unusual Transnet-Phelophepa HCT six-week stationing period. The intention was to access the service users presenting at the pharmacy department at the end of the consultation process. Therefore, the dental service users were excluded in consideration of procedures associated with discomfort and pain. The majority of the optometry service users were also excluded as they left immediately after they received their spectacles. Other service users excluded were people who came in organised transport such as taxis or hired cars.

A non-probability convenience sample was used to obtain a sample size of 124 service users (n=124) who participated in the study over a period of one week.

6.2.2 **Data Collection**

The data collection process was conducted by the researcher, using interviews. Thus the researcher had the opportunity to develop a rapport with the interviewees and to explain or rephrase questions where confusion or lack of understanding was indicated.

6.2.2.1 **Data collection instrument**

A structured interview schedule consisting of open and close-ended questions, mainly of the multiple choice variety, was used to explore Transnet-Phelophepa HCT service users' opinions on the health care service (Appendix 8). The instrument was first developed and tested by Pindani (2001) in a study conducted in Malawi. The instrument was further used by the researcher in 2005 in a study conducted locally in South Africa, exploring the mobile clinic users' opinions of health care services in the Gauteng province. During the pilot study, the data collection tool was modified for the South African context with Pindani's permission, and it was found to be a reliable instrument for exploring service users' opinions related to mobile service provision.

The interview instrument is divided into five sections:

Section A: Recording demographic aspects to elicit socio-demographic data characteristics of the service users under study.

Section B: Exploring the service users' utilisation levels and their preferred services.

Section C: Identifying the users' knowledge on the available services.

Section D: Exploring mobile clinic users' level of satisfaction with services offered and with attitudes of the staff.

Section E: Exploring possible health care service delivery problems and additional information presented by the service.

6.2.3 **Data Collection Process**

Data were collected during the fifth week of a Phelophepa train service provision period. The researcher travelled to where the Phelophepa train was stationed. Every morning after the client service registration process, the researcher addressed service users in the waiting areas of the different clinics, providing them with information about the study. After consultation, the service users were approached again at the pharmacy (medication dispensing) coach, where cashiers are stationed for all service users to pay for the service. Users were approached individually and provided with participant information letters explaining the purpose of the study (Appendix 8.1). On agreeing to participate in the study,

service users were requested to sign the consent form and then invited to come to the tent that was used specifically for data collection. A convenience sampling strategy was used to select a sample size of 197 service users (n=197). Service users who were not included in the study were very sick, or scholars below the age of sixteen, or had had dental extractions. Approaching service users that met the inclusion criteria and were at the pharmacy coach is described as non-probability convenience sampling (Grove et al., 2013:362). Data were then collected through one-on-one interviews, conducted by the researcher over a period of one week, using a questionnaire with both open and close-ended questions (Appendix 8).

6.3 DATA ANALYSIS APPROACH

The interview schedules were checked, numerically organised and coded, and then the data was entered into a Microsoft Excel spreadsheet and analysed using IBM SPSS 22. Descriptive statistics were used to summarise, organise and present data. The findings relate to the research objectives and are presented in four sections according to the interview questionnaire.

Open-ended questions were analysed using the qualitative content analysis process, where similar words and concepts were identified and colour coded, in order to derive an understanding of the opinions and concerns presented regarding service provision on the Transnet-Phelophepa HCT.

Responses to Q20, Q25, Q28, Q31, Q32 and Q33 were read. Responses that were unique or different were specially colour-coded. The responses were then entered into an Excel spreadsheet to look at frequency, and then interpreted to derive meaning from the responses. The responses were further analyzed and grouped, and the statistical frequency of the responses established and ranked. However, responses for Q32 and Q33 were repeatedly read through, clustered and coded in order to identify significant items expressing the possible problems that service users might have encountered or additional comments related to the Transnet-Phelophepa HCT. According to Le Compte (2000:148) this method of sifting and sorting helps in finding significant research results. The process for both questions yielded three similar categories for both questions 32 and 33 and these are: service, people and environment-related aspects. The findings are discussed in detail in section C and section D respectively.

6.4 RESULTS

6.4.1 Section A: Demographic Data

Section A presents demographic information of the Transnet-Phelophepa HCT service users during the period of the study. Demographic data on age, gender, marital status, employment status and level of education of the Transnet-Phelophepa HCT users were collected and analysed to determine their characteristics.

Data were gathered from the service users presenting at the medication collection point with the aim of interviewing a sample of (n=197) service users. Using a Raosoft (2004) calculator, the sample size was calculated based on an estimated minimum population of 400 registered health clinic service users per week. One hundred and twenty four (n=124) service users were interviewed over a period of five days, yielding a 62.9% participation rate.

Table 6.1 illustrates that the majority of the service users interviewed (90%, n=112) were female whereas only 10% (n=12) were male. The mean age of the service users was 44.81 years. Most of the service users (44.35%) were between the ages of 41 and 60 years while 43 service users (34.68%) were between 21 and 40 years. Twenty service users (16.13%) were over 61 years old and six (4.84%) were 20 years and below.

Table 6.1: Age and sex distribution of service users (n=124)

Gender	**Age distribution**			
Females: 112 (90%)	20 years or less	21–40 years	41–60 years	Over 61 years
Males: 12 (10%)	6 (4.84%)	43 (34.68%)	55 (44.35%)	20 (16.13%)

Forty six percent (n=57) of the service users had never been married, and a small percentage (3%, n=4) had been divorced (Figure 6.1).

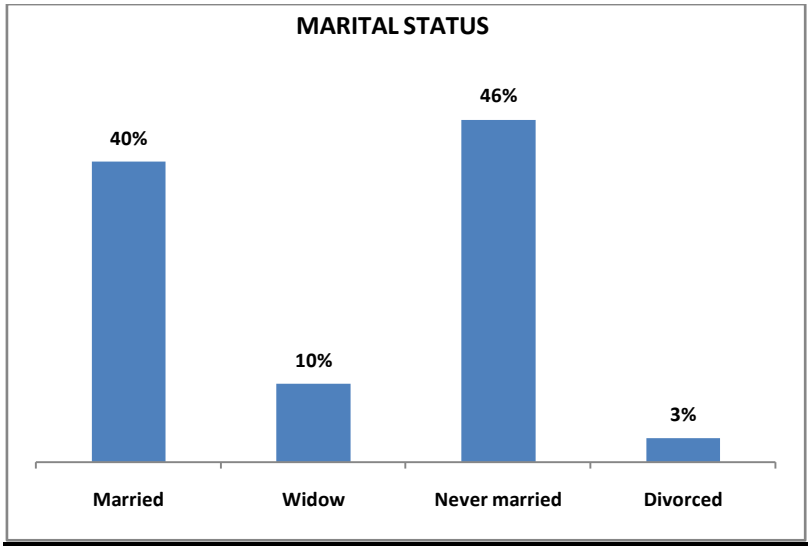


Figure 6.1: Marital status of the service user sample (n=124)

Service users were asked to state their employment status. Half of the service users (50%, n=62) who participated in the survey were unemployed whereas 32.26% (n=40) were employed. Eighteen (14.52%) of the service users were pensioners while four (3.23%) were scholars. The unemployed and pensioners combined made up the majority (65%) of the sample. There were no disabled persons that utilised the service during the period of the study (Figure 6.2).

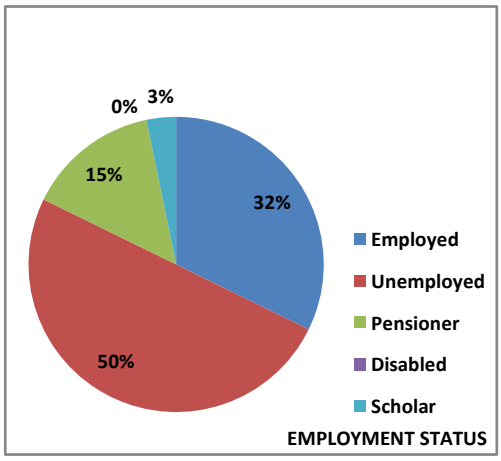


Figure 6.2: Employment status of the sample (n=124)

Respondents were asked about their level of education. The results showed that 55 (44.35%) had attended school up until grades 9–12, whereas 47 (37.9%) had attended school up until grade 5–8.

The results further indicate that nine participants (7.26%) had never attended any type of schooling whereas six (4.84%) had completed a diploma course (see Table 6.2).

Table 6.2: Education level of the sample (n=124)

Level of Education of the Service Users	F (%)
Has never attended school	9 (7.26%)
Sub A–STD 2 (Grade 1–4)	7 (5.65%)
STD III–VI (Grade 5–8)	47 (37.9%)
STD VII–X (Grade 9–12)	55 (44.35%)
Tertiary education: diploma / certification	6 (4.84%)
Degree	0 (100%)
Total	124 (100%)

6.4.2 Section B: Utilisation of the Services

In this section four questions were regarding the level of service utilisation of the Transnet-Phelophepa HCT. Users were asked how long it takes them to travel to where the Phelophepa train is stationed. The results in Table 6.3 show that slightly less than half (48.39%, n=60) of the service users estimated travelling for 10 to 30 minutes. Slightly less than fifty percent (n=60) stated that it took between 30 minutes and 2 hours, while four service users (3.23%) spent 2 to 5 hours to travel to the train station.

Table 6.3: Travelling distance to Phelophepa Health Train of sample (n=124)

Travelling distance	F (%)
10 – 30 minutes	60 (48.39%)
30 minutes – 1 hour	42 (33.87%)
1 – 2 hours	18 (14.52%)
2 – 5 hours	4 (3.23)
More than 5 hours	0 (0%)
Total	**124 (100%)**

The Transnet-Phelophepa HCT usually stops at a designated train station for a week, or for a maximum of two weeks. However, the data for this study were collected when the Transnet-Phelophepa HCT was in one area for six weeks. Therefore the service users were requested to state if it was the first time that they had accessed the Transnet-Phelophepa HCT service and to state the number of times they had used the service in

this period. Seventy-five (60.98%) service users stated that it was the first time that they had used the Transnet-Phelophepa HCT service (Figure 6.3.)

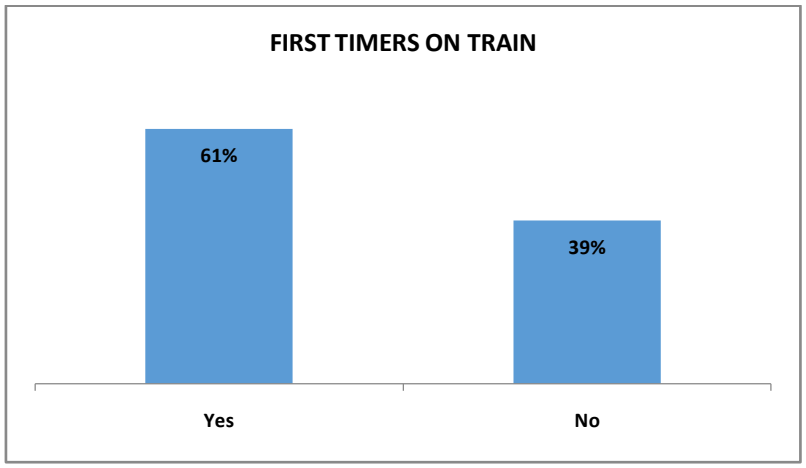


Figure 6.3: First-time service users in sample (n=123)

A follow-up question was directed to the 39.02% (n=48) service providers who had utilised the service already during this period. The service providers were requested to indicate the number of times that they utilised the service. Forty-seven service users responded to the question; 68% (n=32) had utilised the service twice; 25% (n=11) thrice, six percent (n=3) four times and only one (2.13%) more than five times (Table 6.4).

Table 6.4: Description of service utilisation of sample (n=47)

Number of times that the service were utilised	F (%)
Twice	32 (68.09%)
Thrice	11 (23.4%)
Four times	3 (6.38%)
Five times	1 (2.13%)
Total	47 (100%

6.4.3 Section C: Knowledge of the Available Services

Four questions were asked to explore service users' knowledge of the range of services available on the Transnet-Phelophepa HCT and on the services needed. All the service users except one responded to the questions in this section (99.19%, n=123). The results show that 69% of the service users (n=85) knew all the services offered on the train; 26.82% (n=33) knew of some of the services, and 4% (n=5) did not know the range of services offered (Figure 6.4).

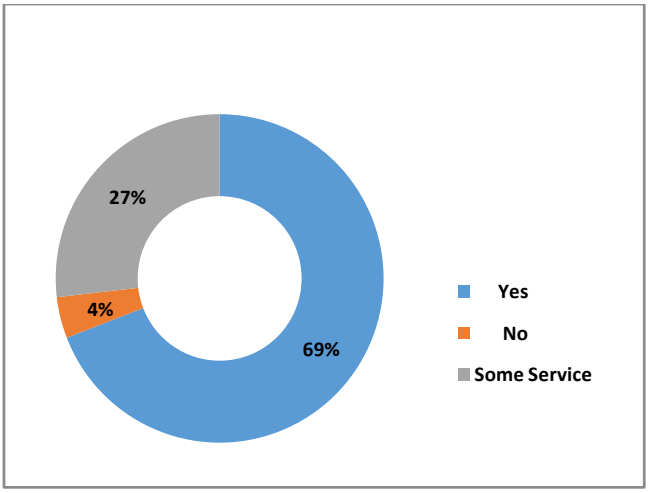


Figure 6.4: Knowledge of available service of sample (n=123)

Service users were then requested to name the services they knew were available on the train. Table 6.5 presents the types of services and the frequency of the responses in relation to knowledge of such services. The results, in Table 6.5, show that service users interviewed were well aware of the Dental Clinic (100%), Eye clinic (100%), Health clinic (98.37%), the Diabetic screening service (93.5%) and the Cancer screening service (84.55%). Health services that service users were less aware of included prostate cancer screening (37%) and counselling services (47%).

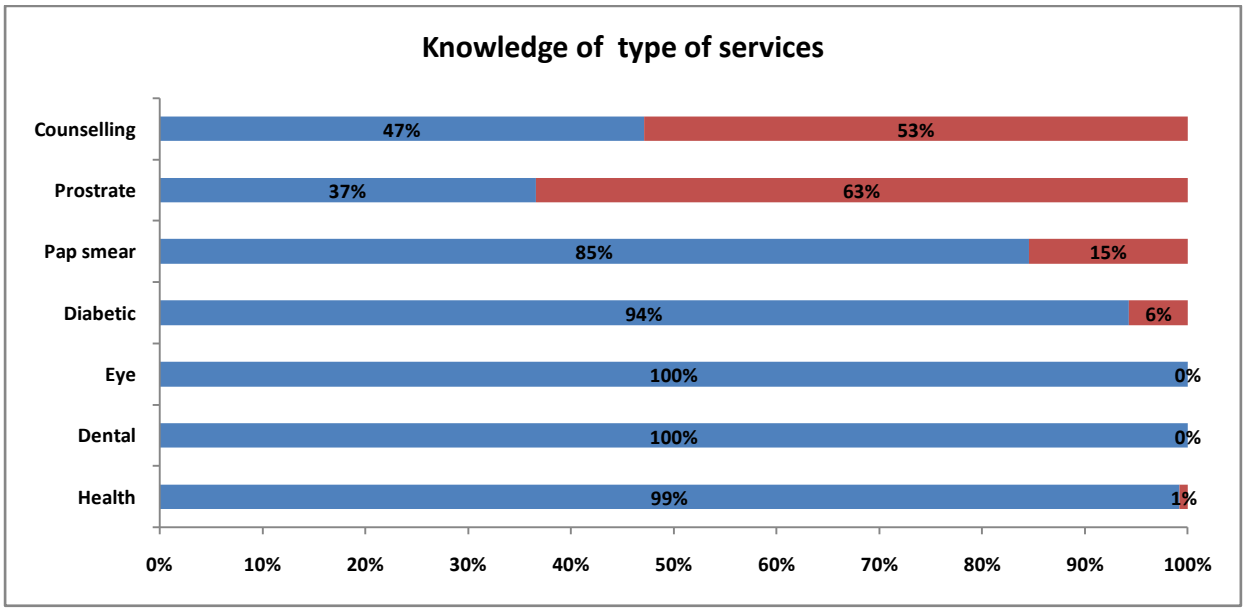


Figure 6.5: User knowledge of types of services available on the Phelophepa train

6.4.3.1 **Additional services needed**

Service users were asked if there were services needed by their communities that were not offered on the Transnet-Phelophepa HCT train. Twenty-eight service users (22.95%) out of 122 expressed the need for additional services.

Most of the additional services requested were related to health screening: HIV/AIDS testing and counselling services (n=11); breast cancer screening (n=4) and X-ray facilities (n=8). Users also requested a Tuberculosis-related service (n=4) and a physiotherapy service (n=4), but gave no specifics on these services. Five additional services suggested by users were: gynaecology services, referral for disability grants, a dentures service, immunization services for children, and health information talks. Again, specifics about the service for children were not stated.

6.4.4 **Section D: Satisfaction with the Services**

Eight questions were asked of users. The first three tried to determine the level of satisfaction with the weekly service provision schedule (Monday to Friday) and annual service delivery schedules, and to explore their preferences. The last five questions explored aspects and opinions related to service satisfaction with management of health problems, attitudes of the students, and concerns regarding safety and other issues.

Table 6.5 is a summary of the different aspects of service satisfaction explored. Service users' preferences are presented in Table 6.6.

Table 6.5: Satisfaction with the services

Aspects queried	**Yes**	**No**
Satisfaction with only Monday to Friday (n=123)	84 (68.29%)	39 (31.71%)
Satisfaction with service offered once every two years (n=123)	23 (18.7%)	100 (81.3%)
Satisfaction with how problem was managed (n=123)	119 (96.75%)	4 (3.25%)
Explanations given /Questions answered (n=123)	116 (94.31%)	7 (5.69%)
Satisfaction with safety (n=120)	9 (7.5%)	111 (92.5%)

6.4.4.1 **Level of satisfaction with available services**

Most of the service users (68.29%, n=84) indicated that they were satisfied with the service being available from Monday to Friday. However, 31.71% of the service users (n=39)

indicated that the times when the service was available were not convenient for them. Responses from a follow-up question revealed that only 18.7% (n=23) of the service users were satisfied with the service being offered once every two years. The vast majority (81.3%, n=100) expressed dissatisfaction with the service being offered once every alternate year (Table 6.5).

A follow up question was asked of 100 users to elicit their preferences regarding the frequency of availability of the Transnet-Phelophepa HCT.

Results showed that sixty-four service users (64%) indicated that they preferred that the Transnet-Phelophepa HCT comes to their area at least once per year. Twenty-five percent (n=25) suggested that the service be provided twice a year. Eight service users (8%) suggested thrice per year and four (4%) of these responses were for 'other' (with no indication of what was preferred) (Table 6.6).

Table 6.6: Preferences of availability of the Transnet-Phelophepa HCT of the sample (n=100)

Preference	Frequency	Percentage
At least once a year	64	64
At least twice a year	25	25
At least thrice a year	8	8
Other	3	3

6.4.4.2 **Satisfaction with management of health problems**

The service users were asked to reflect on the service received and to comment on their satisfaction with how their health problem was managed by the students. One hundred and nineteen service users (96.8%) stated that they were satisfied, as compared to 3.25% (n=4) who were dissatisfied. An open-ended follow-up question was asked to establish the possible reasons or areas of dissatisfaction. The results showed that the one of the service user's reasons for dissatisfaction was related to lack of student supervision. The comment was about *'being attended to by a student without supervision*'.

The second issue raised was related to information given to service users. The views expressed implied poor service. One user said:
'They did not explain that I am hypertensive.'

Another service user mentioned:
'*I did not learn anything from them'.*

The last area of dissatisfaction raised was that some students were rude, impatient and preoccupied with their own conversations while patients were waiting.

An additional question was asked to establish if the students did explain or answer all the questions about the presenting illness. The results showed that most of the service users (94.31%, n=116) stated that they were given information related to their illness, whereas only a few (5.69%, n=7) stated that they were not offered an explanation.

6.4.4.3 **Attitude of the students towards the service users**

Using a scale ranging from bad to good to excellent, service users were asked to state their opinions regarding the attitudes of the students offering service on the Transnet-Phelophepa HCT. Table 6.7 shows the responses provided. Ninety-eight percent of the service users' (n=120) descriptions of the service ranged between good (40.65%, n=50) and excellent (56.91%, n=70). Three service users (2.44%) described the students' attitudes as bad.

Table 6.7: Opinions of the sample regarding attitudes of students (n=123)

Staff Attitude	Frequency	Percent
Bad	3	2.44%
Good	50	40.65%
Excellent	70	56.91%

6.4.4.4 **Safety on the Transnet-Phelophepa HCT**

To establish satisfaction with safety on the Transnet-Phelophepa HCT, service users were requested to comment on a moment or an area where they felt unsafe. Out of 120 service users who responded to this question, the results showed that the majority of the service users (92.5%, n=111) were satisfied with safety on the Phelophepa train. However 7.5% (n=9) expressed that there were moments where they felt unsafe on the train. On further analysis of the open-ended responses, the results revealed that two service users felt unsafe while they were in the triage area waiting to be issued with stickers for the services needed.

'*Yes in the queue. There was a lot of pushing. There is a possibility of a stampede.'*

One service user, a female scholar, felt intimidated by male students asking for her telephone number. However, this service user commented, '*It is a good service, comes once in a life time',* and that *'Services should continue every year especially for the poor people who can't make it to the clinics.'*

6.4.4.5 **Problems and comments related to the Transnet-Phelophepa HCT**

Two open-ended questions were posed in this section for service users to state in their own words problems that they might have encountered that could possibly have an impact on their health and wellbeing. Service users were also asked if there was additional information that they would like to share with the service providers. Responses for both questions were read and colour-coded to identify similar problems as well as those that are not so common. Thereafter they were manually counted as there was a manageable number of responses.

Of the (n=120) service users who responded to this question, 20.83% (n=25) stated that they had a problem with the Phelophepa train. A total of 36 responses were recorded. The service users voiced concerns related to environmental factors, staff and staffing-related issues, and human resources and queue management issues, as shown in Table 6.8.

Table 6.8: Problems and comments presented

Concerns raised	Frequency	Quotation
Service too slow Waiting too long	7 3	'Not enough seats. I have been standing for four hours'.
Issuing of stickers	7	'I slept on the platform then at 8 a.m. there was a group of people given stickers who were not in the queue. Otherwise I am happy with the service. The train must come back again.'
Queue management	12	'…need to introduce numbering system. Count people and stop others from coming in or joining the queue...' 'Improve the queue system and Too many people giving instructions.' 'There is disorder. Please monitor queues.'
Hygiene-related factors	4	'….Toilets…..and the smell coming from the train' 'Dirty toilets' 'Re-using disposable glasses for water outside'
Staff and staffing-related issues	4	'This is the third day here; still I did not get spectacles. I spend R50 per day on transport. I had problems with transport and there were also problems with the queue management' 'Being attended to by a student without supervision' 'Increase the staff at the health clinic' 'Need more people in the eye clinic'

The majority of the concerns raised were related to the triage area system with special reference to how the queue is managed, issuing of stickers, and waiting times and the waiting area. On ranking the problems listed, the most highly rated problem compared to the others was the queue management system, stated nine times. The second-highest rated problem was the issuing of stickers, stated seven times. The major issues were related to people not in the queue having access to stickers, and the queue not being managed well. One of the service users stated:
'I slept on the platform, then at 8 a.m. there was a group of people given stickers and they were not in the queue.'

One of the suggestions stated in the open-ended responses was:
'Increase the number of stickers and the staff numbers.'

Another suggestion was:
'...there is a need to introduce a numbering system. Count the people and stop others from coming in or joining the queue.'

Seven service users commented that the service was slow. However there was no elaboration on this area of concern. Other problems raised were the shortage of staff members at the eye clinic.

Additional comments about the Transnet-Phelophepa HCT
Ninety responses were recorded. The majority of the responses were positive. The service users expressed feelings of gratitude, describing the service as 'excellent' or 'good service'.

Two of the participants were impressed with the service and expressed that the Transnet-Phelophepa HCT services were better and faster than at a hospital. A participant expressed the following:
'I am happy with the treatment I have received. I have been to RH Khan on several occasions but never received such treatment.'

Another participant said:
'I wish our clinic could offer the same service. Be kind, treat us with respect and be prepared to listen to the presenting problems. Many people don't go to the clinics as they are scared.'

The staff members were described as being polite, kind and patient:
'*…they treated me well, satisfactorily. Students know how to talk to people. Very humble.*'

Another participant added:
'I am happy with the service. They provide an affordable service. I am satisfied with the treatment. I was treated with respect and love. I am happy with care given. I am very, very happy.'

As much as the majority was satisfied with the services, one of the participants who had used the service twice complained:
'I felt hurt, as nurses said I am too young to be pregnant, as I am still a scholar or should have waited to get married.'

Two participants were concerned about the operational area of the Transnet-Phelophepa HCT. They complained that the train does not go to Black areas as evidenced by these statements:
'Why not stop at Black Townships?'
'It is my wish that the train visit our area as well, [the Mlazi] Blacks Township....'

6.5 DISCUSSION OF THE FINDINGS

6.5.1 Demographics

The findings in this section show that the majority of the service users (90%) were female and almost 50% were single. The findings are consistent with a rural or remote setting where women tend to remain at home, whereas men move to cities for employment opportunities, as these are scarce in remote and rural areas as evidenced by 50% of the service users being unemployed.

6.5.2 Section B: Accessibility, Utilisation and Knowledge of the Available Services

Fomba, Yang, Zhou, Liu and Xiao (2010:261) state that 'a satisfied patient is more likely to develop a deeper and longer-lasting relationship with their medical provider, leading to improved compliance, continuity of care and ultimately health outcome'. This statement is an indication of the importance of conducting service user-related satisfaction surveys to identify factors that could lead to dissatisfaction with services and thus poor utilisation levels. Wambua, Mbayaki, Munyao, et al. (2015:668) acknowledge that there are various strategies and facets that can be used to measure service satisfaction. However, the health facility, physical environment, client-provider relationship (which includes

communication and respect), and provider characteristics are identified as the key factors. In this study, the health facility and related physical aspects were assessed through service providers responding to questions on accessibility, utilisation and knowledge of the available services; therefore, the discussion of the results will be presented according to these aspects.

6.5.2.1 **Health facility and physical related aspects**

- Accessibility

  The results in this study show that the Transnet-Phelophepa HCT was geographically accessible for the majority of the service users. Almost half of the sample (48.4%, n=60) had travel times below 40 minutes, while 33.9% (n=4) travelled for 30 minutes–1 hour respectively. Only a minority (3.23%, n=4) travelled for 2–5 hours. Similar results were reported in two other studies, firstly one in Tshwane, Gauteng Province, South Africa on community health (Nteta, Mokgatle-Nthabu and Oluwafemi, 2010:1), and then in a poor socio-economic setting in Kenya (Wambua et al., 2015). The results in both studies show that travel time for the majority of the population was 30 minutes or less, or 20–40 minutes.

  In contrast, a study conducted by Smith et al. (2006) among consumers in Australia showed that access was reported as the most common issue affecting clients' health-seeking behaviour. Regan (2009:1142) states that geographical location of rural people is important as it determines the extent to which they can timeously access services.

- Utilisation

  Geographical accessibility is one of the factors that influence service utilisation decision making. Utilisation of services is also influenced by the level of satisfaction with the services (Farmer, Iversen, Campbell, et al., 2006:210). The results in Wambua et al. (2015) show that 95% of the service users who were satisfied with the services responded positively to the question '*I would like to come back to this health facility again'* and 93% said they would recommend the service.

  Although in this study on the Transnet-Phelophepa HCT, the association between satisfaction and utilisation was not checked for, the results show that, generally, service users were satisfied with the services, describing them as 'excellent', 'wonderful', and 'a blessing' in the open-ended question sections. More than 60% had

utilised the Transnet-Phelophepa HCT services more than twice and 23% (n=11), thrice.

- Knowledge

  The literature has shown that lack of knowledge of health services could impact utilisation levels. Similarly, difficulty in accessing services determines the decision to consult a health service (Farmer et al., 2005:210).

  Patro, Kumar, Goswami, et al. (2008:252) conducted a study on client perception of and satisfaction with the primary health care services in New Delhi. The majority (82%) of the clients had knowledge of the available services; however, only half utilised the services. Dissatisfaction was related to inconvenient provision of the mobile health clinic and long queues.

  The results from the Transnet-Phelophepa HCT are similar to that of Patro et al. (2008), as the service users had knowledge of all the services. However, the long queues had no impact on the utilisation levels. Service users suggested that the services should be provided at least once a year (64%, n=64). Since then a second health train has been introduced and each province is visited once a year. However, a significant number of service users (25%) suggested that services be provided at least twice per year. The majority of service users in this study were well informed about most of the services offered, except that less than 50% knew about the counselling and prostate cancer screening programmes. All the services provided were regarded by users as necessary. Opinions were offered with regards to additional services needed.

  In summary, accessibility, utilisation and knowledge of health services are three interrelated aspects that dominate service satisfaction related research.

- Amenities

  Amenities in this section refer to facilities or services utilised by the service users.

  In this study, no direct questions aimed at exploring satisfaction with the available facilities. However, the result from an open-ended question exploring the problems with the Transnet-Phelophepa HCT service drew complaints about dirty toilets and poor availability of drinking water. However, it must be stated that service users' ablution facilities on the Transnet-Phelophepa HCT have drastically improved over the

years. Nonetheless, this is a component of the service that needs continuous monitoring and maintenance based on evidence that it is a concern. Literature has shown that availability of the necessary amenities is one of the key issues that impact on service users' satisfaction with the services.

Ina study conducted on mothers attending a baby clinic in a semi-rural area in Nigeria, mothers were satisfied with treatment given; however, the majority (73%) were not fully satisfied with the level of sanitation of the toilets (Abodunrin, Adeomi and Adeoye, 2014:48). With regards to health services, the availability of drugs and privacy are considered as one of the key issues to check for in a satisfaction survey. In the Nigerian study, slightly more than half of the service users (54%, n=118) were partially satisfied with the maintenance of privacy, and only one service user expressed satisfaction with the level of privacy in the consultation rooms. (Abodunrin et al., 2014:48)

These findings are similar to those of a patient satisfaction study conducted by Gadallah, Zaki, Rady, et al. (2003:422) in two health districts in Egypt. Results showed that 33% of the patients were dissatisfied with the level of privacy in the consultation rooms. Ultimately, patient privacy in most mobile health care settings remains a challenge due to limited space.

6.5.2.2 **Provider characteristics**

- Management of presenting problem

  Hansen et al. (2008:384) describe health worker competency as one aspect used by service users as a criteria to assessing quality care. The findings from Wambua et al. (2015:672) showed that the majority of the patients were satisfied with the information provided and that they felt free to ask questions.

  Similarly, a considerably high number of Phelophepa train service users were satisfied with how their problem was managed (96.8%, n=119), and had received explanations regarding their health problems (94.3%, n=116).

- Attitudes

  The attitude of the health providers is reported to be a powerful predictor for client satisfaction (Abodunrin et al., 2014:45). The aspect of attitude includes the manner of

communication and respect. More than half (56.9%, n=70) of the Transnet-Phelophepa HCT service users described student attitudes as excellent.

Summary

The general impression from the results of the Transnet-Phelophepa HCT user survey is that the service users appreciated the service and were generally satisfied with services, despite some concerns raised, as evidenced by the following statements:

'The project should go on. Continue to do the good work. I wish you all the best. God be with you and protect the train. Till we meet again.'

'I am happy with the service. They provide an affordable service. I am satisfied with the treatment. I was treated with respect and love. I am happy with care given. I am very, very happy.'

However, Smith, Humphreys and Jones (2006:597) suggest that results where there are high levels of satisfaction should be interpreted with caution. The results in a study conducted by Smith et al. (2006:597) showed that service users had concerns regarding rural health care services provided; however, they did not complain.

Wambua et al. (2015:674) also raised a concern regarding high reported satisfaction levels and thus proposed subsequent qualitative studies to determine the reasons for high satisfaction levels.

6.6 SUMMARY

This part of the study explored users' levels of satisfaction with Transnet-Phelophepa HCT services. Factors that are likely to impact utilisation of services, such as accessibility, knowledge of services available, and preferences for other services, were explored. The results showed that generally, Transnet-Phelophepa HCT service users were satisfied with almost all aspects of the service.

Additionally, the Transnet-Phelophepa HCT is an effective programme for meeting health care gaps and complementing existing health care services in rural South Africa, especially services such as Dentistry and Optometry that are currently not financially accessible for the majority of the poor people in both urban and rural areas.

Understanding the service users' needs and expectations of health care services can help in better delivery and higher utilisation of health services. Furthermore, this would reduce morbidity and mortality rates, as satisfied service providers are more likely to comply with service attendance and treatment.

CHAPTER SEVEN

DATA MIXING, INTERPRETATION, RECOMMENDATIONS AND LIMITATIONS

7.1 INTRODUCTION

'Unhappy people cannot create a society enjoying wellbeing,' according to Alatartseva and Barysheva (2015:36). In the context of the Transnet-Phelophepa HCT, this statement implies the importance of maintaining the service providers' health and wellbeing as they are responsible for creating wellbeing in society through the health services provided by the Transnet-Phelophepa HCT.

The focus in this study was on health and wellbeing of the Transnet-Phelophepa HCT service providers and service users with regards to aspects that impact on their health and wellbeing.

In the context of this study, King's (1981) Conceptual Systems theory was used to guide the process of identifying key constructs of health and wellbeing, as well as the related literature review. King's (1981) theoretical model was chosen as it encompasses three vital systems concepts that are important for the study of health and wellbeing: the personal system, the interpersonal system and the social system (George, 2011:234). George also states that within King's three systems concepts, perception is regarded as the most important variable, as it is a way of thinking that influences behaviour. Perceptions are universal yet unique, and are experienced by every individual in life.

A mixed-methods embedded case study design was adopted for this study and implemented in two phases. In Phase 1 a convergent parallel design was applied, wherein five quantitative surveys and qualitative in-depth interviews were conducted for the purpose of exploring and describing health and wellbeing on the Phelophepa train.

Phase 1

The objectives were formulated to facilitate quantitative and qualitative data collection, in order to determine, describe and explore aspects related to working, living and being served by the Transnet-Phelophepa HCT, as follows:

a) the safety climate as perceived by the health sciences students
b) the health science students' perceptions of decision latitude and social support
c) the levels and sources of work stress among permanent service providers

d) the permanent service providers' perceptions of their quality of life
e) the permanent service providers' experiences of life
f) the opinions of the service users, i.e. members of the public, about the health care they received.

Phase 2

In Phase 2, Onwuegbuzie and Teddlie's (2003) seven-stage conceptualisation of the mixed methods data analysis process was applied to formulate recommendations for health and wellbeing on the Transnet-Phelophepa HCT (as shown in Figure 1.6).

7.2 SUMMARY OF MIXED METHOD ANALYSIS PROCESS

As indicated earlier on, Onwuegbuzie and Teddlie's (2003) seven-stage conceptualisation of the mixed methods data analysis process (in Johnson and Onwuegbuzie, 2004:22) were applied in Phase 2 of the study. The summary is shown in Table 7.1.

In this study, the first three steps were employed in Chapters Four, Five and Six. These are the chapters that describe the research design and the results from the six studies conducted on the Transnet-Phelophepa HCT service providers and the service users.

Stage One: *Data reduction* – In Chapter Six part B**,** the experiences of the permanent employees were analysed using thematic content analysis. On the other hand, descriptive statistics were used for reporting the results of the surveys on safety climate, job content and sources of work stress as well as quality of life and services users' perception of health services in Chapters Four, Five B and Six.

Stage Two: *Data display* – Tables and figures were used to display data sets of all five quantitative studies and the qualitative interviews in Chapters Four, Five and Six.

Stage Three: *Data transformation* – In Chapter Five, thematic content analysis was applied to responses from open-ended questions exploring service users' opinions of health care provision. This was then followed by the quantification of similar responses.

Stage Four: *Data correlation* – Data correlation was implemented, firstly, for the quantitative Quality of Life study and the qualitative interviews about experience of life on the Transnet-Phelophepa HCT. The qualitative data categories were discussed in relation to the Quality of Life domains.

Secondly, the data from the students' safety climate and job content data sets were correlated to identify aspects that could have an impact in the context of service learning on the Transnet-Phelophepa HCT.

Stages Five to Seven: ***Data consolidation, comparison and integration*** **–** Data sets from all five quantitative surveys and the qualitative categories were applied in three stages as described below:

The first stage of data consolidation, comparison and integration relates to data sets involving occupational safety among the service users and the service providers. The emerging occupational safety results were discussed in relation to space as described in King's theory (1981) of the personal system.

The second stage is associated with King's theory (1981) of interpersonal systems. Data sets concerning students' supervisor support and co-worker relations, as well as permanent employees' stress survey results were combined.

The last stage includes a service users' satisfaction survey, and aspects related to work/life balance as well as to students' decision-making, authority and control.

Table 7.1: Summary of mixed methods analysis process

Stage One: Data Reduction	Involves analysis of data using exploratory thematic analysis for qualitative data and techniques such as descriptive statistics, exploratory factor analysis and cluster analysis for quantitative data.
Stage Two: Data Display	Involves describing and displaying quantitative and qualitative data using e.g. tables, graphs, rubrics and Venn diagrams.
Stage Three: Data Transformation	An optional stage whereby quantitative data are converted into narrative that can be analyzed qualitatively and/or qualitative data are converted into numerical codes that can be represented statistically.
Stage Four: Data Correlation	Involves correlation of data from the two paradigms of qualitative data being correlated with the quantitative data, or vice versa (the quantitative with the qualitative).
Stage Five: Data Consolidation	Both the qualitative and the quantitative data are combined to create new or consolidated variables or data sets.
Stage Six: Data Comparison	Involves comparing data from the qualitative and the quantitative data sources.
Stage Seven: Data Integration	Both quantitative and qualitative data are integrated into either a coherent whole or two separate sets.

Source: Adapted from Onwuegbuzie and Teddlie (2003)

7.3 SUMMARY OF THE RESULTS AND THE RECOMMENDATIONS

In this sub-section, facets of health and wellbeing were identified and integrated using King's (1981) conceptual systems theory. Only concepts identified as applicable or relevant to a particular group were explored and discussed. The placement of King's concepts within each system is subjective as all the concepts are interrelated in human–environment interaction (George, 2011:234). The recommendations formulated do not follow the conventions of 'research', 'education' and 'practice' but rather are integrated into the different facets of the main findings.

7.3.1 Personal Systems

Space is a difficult concept to define. The definition can be personal or based on the individual's perception of the situation (King, 1981, in George, 2011:237). Space on the Transnet-Phelophepa HCT is time-bound and based on the individual or group's expectations or responsibilities as well as goals.

In the context of personal systems, space is defined by the physical area known as 'territory' and by the behaviours of those who occupy it (King, 1981 in George 2011). Therefore, space in the context of personal systems is discussed in relation to occupational risks and hygiene on the Transnet-Phelophepa HCT.

7.3.1.1 Occupational safety

The permanent service providers perceive the Transnet-Phelophepa HCT as a occupational safe workplace, as they have 24-hour surveillance cameras. However, in the qualitative interviews, concerns were raised regarding the 'confined space' on the Transnet-Phelophepa HCT.

Perceptions of three participant categories highlight a potential of biological hazards related to cross-infection from the service users to service providers as well as across the Transnet-Phelophepa HCT clinics on board. An additional hazard identified is the possibility of physical injury in the event of an emergency due to limited space on the Transnet-Phelophepa HCT.

Regarding the prevention of hazards on the Transnet-Phelophepa HCT, firstly there is a health and safety committee that is responsible for monitoring aspects that could endanger the service providers, such as disease outbreaks or entering areas where there is

community unrest. In such cases, announcements are made regarding changes to the Transnet-Phelophepa HCT route.

Secondly, routine swabs are collected to measure and control the level of micro-organisms growth. However, there is a need for expert continuous measurement of the temperature, humidity, air movement and other comfort parameters since the service providers work in a confined space on the Transnet-Phelophepa HCT. According to Joshi (2008:61) working in a confined space could expose the service providers to the sick building syndrome. The sick building syndrome is characterised by feelings of ill health that can result in increased absenteeism and cause a decrease in productivity.

In summary, space is described from the service providers' perspective in the context of occupational safety.

The results from the service users' also revealed a concern regarding safety. The unsafe aspect was associated with the queue triage system. Therefore a queue management system or triage system must be implemented to create a safer personal environment for the service users.

Students' perceptions of safety indicate that management is safety conscious as the majority (85%) were of the view that they were not likely to get injured on the train.
However, it is noted that 45.1% of the students' responses regarding being informed about safety practices ranged between 'occasionally', 'seldom' or 'never'. The results further showed that the majority (72%) indicated that there were no regular safety meetings in their departments; in addition 5% felt that supervisors were more concerned with getting through the number of service users consulted. More than 60% felt that the job involves taking risks.

A minority of two groups consisting of 18.07% and 11.86% indicated the possibility of risk-taking and the likelihood of injuries. It is noteworthy that a lack of regular safety meetings and poor awareness regarding safety practices indicate a possibility of exposure to occupational risk. In this regard, students also mentioned that supervisors are occasionally more concerned about serving all the service users quickly. This could lead to incidents such as needle injuries as students then have to rush through procedures.

Hygiene related aspects

Both service providers and the service users mentioned the aspect of unhygienic toilets and malodorous from the train associated with the limited number of sanitation facilities in comparison with the number of service users. This is an important aspect of service provision that needs constant monitoring and evaluation as it is may have an impact on utilisation of the health services.

A summary of the emerging personal systems facets of health and wellbeing as well as the suggested recommendations for the occupational health and safety programme are presented in Table 7.2.

Table 7.2: Summary of the personal systems concepts and recommendations

Occupational Safety

- Management is safety-conscious.
- However, no regular safety meetings are held.
- Awareness among providers about safety practice is occasional or seldom.
- There is greater likelihood of injuries.
- Supervisors are concerned about queues versus student safety.

Recommendations

In conjunction with the excellent existing insect control and biological monitoring programme that is in place, it is advisable that:

- The occupational hygienists are engaged to measure air flow and to advise on the ventilation process.
- A review of records to gauge the level of absenteeism from work and the presenting problems to exclude signs and symptoms suggestive of the sick building syndrome.
- Establish a safety climate programme that will ensure active service providers awareness and participation in safety issues on the Transnet-Phelophepa HCT.
- Conduct a study to explore the students' knowledge of occupational hazards on the Transnet-Phelophepa HCT.
- A study should be conducted among students to establish the actual areas of safety.

7.3.2 Interpersonal Systems: Concepts and Recommendations

King's (1981) concepts associated with the interpersonal (nurse–patient) system are interaction, communication, relations, roles and stress. Interaction, communication and relations concepts are essential in a setting like the Transnet-Phelophepa HCT where the goal of successfully rendering a primary health care service depends on effective communication among members of the different disciplines and the students. Successful health service delivery depends on the roles that different service providers assume, as

well as communication processes being used for co-workers' support and the student–supervisor support structure.

The role concept is described as the most important as it determines the expected behaviour based on an established set of procedures or rules that outline the responsibilities and privileges (King 1981, in George 2011:238). Stress, on the other hand, could be an expression of the experiences of the processes and activities involved, as well as the pressure of organising resources for achieving the goal of health service delivery.

In this section, significant interpersonal aspects emerging from the results with a possible impact on the health and wellbeing of the service providers are presented. These emerging aspects relate to interaction, communication and relations, which help to frame the results and recommendations for supervisor support, co-worker relations and stress as in Table 7.2.

Role is not discussed as a separate entity as it is a concept that interfaces with and is interrelated with all the other concepts.

7.3.2.1 **Supervisor support**

Supervisors in the Transnet-Phelophepa HCT service-learning context have the responsibility to direct student learning and evaluate the clinical performances of students (Naqvi, 2012:250). One of the job content objectives was to assess students' perceived level of supervisor support, based on the extent to which they felt that supervisors valued their contributions and cared about their wellbeing, interests and welfare.

Findings showed that the students perceived the supervisors as being concerned about creating a positive and supportive learning environment, valuing what the students say, and contributing towards their learning.

7.3.2.2 **Co-worker relations**

The majority of students in all groups found their colleagues friendly, competent, helpful in getting their jobs done, and interested in others. It is noteworthy that the Psychology students unanimously agreed in their colleagues' competence at their jobs and friendliness towards them. The results suggest a positive working relationship among all the students in the different clinics on board and imply that they enjoy the support of their co-workers in completing their tasks.

The concept of co-worker support also emerged from the permanent service providers' qualitative interviews. It is noteworthy that the permanent employees recognised the importance of position and strength as co-workers in creating a supportive team environment to contribute to productivity and wellbeing.

7.3.2.3 **Stress**

The Transnet-Phelophepa HCT permanent service providers are no exception when it comes to the effects of stress. The adverse effects of stress increase the physical and psychological risks of an individual and for an organisation. Stress, furthermore, has been associated with reduced quality of life and health and wellbeing.

The findings from the stress survey showed a mean of 42.9, indicating a moderate level of stress among the permanent employees. The results further showed that the majority rated their general quality of life as 'good' and 'very good'. However, these results should be interpreted with caution, as just over half of the permanent employees indicated that they experienced negative feelings quite often. Secondly, the results from the qualitative interviews suggest a need for psychological support and also for creating a more supportive environment. Furthermore, relaxation and recreational activities that contribute towards emotional and social wellbeing are needed, as noted in the qualitative data analysis categories.

On the contrary, the results showed that permanent service providers described positive feelings despite not having activities that encourage, motivate or help them to debrief at the end of a long day.

Permanent service providers also expressed positive feelings regarding life enjoyment, saying that they 'considerably' or 'very much' believe that they live a meaningful life. Based on these results, the researcher recommends a quality of life study that assesses issues of mood, depression and anxiety, life satisfaction, general quality of life, optimism and happiness among the permanent service providers on the Transnet-Phelophepa HCT. The results above point to a need for:

- a stress-management programme that will most likely, in addition to encouraging employee wellbeing, serve as an indicator of a 'good place to work';

- strengthening the existing team-building programme that is implemented annually at the end of the Phelophepa programme. Ideally an ongoing team-building programme incorporating recreation and leisure is recommended.

Table 7.3: Interpersonal systems: concepts and recommendations

Concepts	Recommendations
▪ Positive supervisor support	▪ Research and compare supervisor-student support on both health trains. ▪ Improve student-support and develop best practice guidelines.
▪ Positive co-worker relations	▪ Research and compare co-worker support on both health trains. ▪ Improve co-worker support and develop best practice guidelines.
▪ Moderate level of stress ▪ Satisfaction with general quality of life and general health	▪ Develop a stress-management program to encourage employee wellbeing and to serve as an indicator of a 'good place to work'. ▪ Strengthen the existing team-building programme and incorporate recreation and leisure. ▪ Research work-related quality of life.

7.3.3 Social Systems: Concepts and Recommendations

As stated by King (1981, in Alligood and Tomey, 2006:185), social systems are composed of large groups with common interests or goals. The examples of social systems cited include peer groups, families, community groups, health care settings, workplaces, educational institutions and religious organisations. It is in this context that the service users' satisfaction survey and aspects related to work/life balance were analysed in relation to the social systems aspects. Findings related to decision-making, authority and control are included in this section.

7.3.3.1 Health care service provision

The core function of the Transnet-Phelophepa HCT is health service provision. As in any health setting, there is a vision, policies and guidelines for service delivery. The priority principle is to provide a health care service in a manner acceptable to all who participate in the programme.

A survey was conducted to establish the services users' opinions of the Transnet-Phelophepa HCT services. The overall purpose was to establish aspects that impact on service utilisation from the service users' point of view. Knowledge of the services available, and satisfaction with these services, are some of the determinants of service utilisation.

The results of the study showed that the majority of the service users were satisfied, describing it as an 'excellent' and 'good' health care service. The majority of the users were well aware of all the services on the health train and were satisfied with the service being available to them once a year. Some, however, were not satisfied with the services being provided only once a year, or how their health problems were managed by the students. Some service users were also not satisfied with the information given, and described the attitude of the students as 'bad'.

Although the majority of the service users were satisfied with all aspects of health service provision, it is important to take note of the minority groups' concerns; if these issues are not investigated or monitored, and measures are not put in place to address them, they might escalate into major problems.

A further qualitative study to determine the reasons behind the service users' high satisfaction levels should reveal the actual areas of satisfaction. Secondly, implementing a client flow analysis could contribute towards improvement of queue management, thus reducing long waiting hours for the service users.

7.3.3.2 **Work/life balance**

The service providers described working on the Transnet-Phelophepa HCT as exciting. However, concerns were raised regarding heavy workloads and long hours. At times, due to heavy work, the end of duty time coincides with supper time or goes beyond meal times. This leaves the service providers with no time after work for attending to their personal needs. Service providers perceive balancing work and life as difficult. The related problems of work/life imbalance are greater on the Transnet-Phelophepa HCT as service providers get to see their families on weekends every six weeks, when the Phelophepa train's designated service point may be in an area that is far from some of their homes. The challenge is for them to deal with competing demands of work and home life. Simard's thesis (2011) on employees' work/life balance suggests that employees try increasing their access to resources and social support, as well as learning to be more flexible.

7.3.3.3 **Decision-making authority and control**

The concept of 'decision-making' is closely associated with authority and control. In the context of community-based clinics, primary health care nurses operate independently, with the support of a doctor once a week in some areas. Their expected roles include applying delegated authority and control to decide on a patient management strategy. The

expectation of students on the train is the same, given that they are senior students. With regards to decision-making authority and control, the majority of the students agreed that their jobs enabled them to make decisions on their own and that they had the freedom to decide how to do work. However, two groups of students (Pharmacy and Psychology) had low agree scores, which may point to some degree of inflexibility in allowing these students to assume a leadership role under supervision.

Given that this was a self-administered survey, the areas lacking in student flexibility or freedom could not be explored. A study involving more students on both trains would benefit all the participants.

Table 7.4: Social systems: concepts and recommendations

Emerging Aspects	Recommendations
Long waiting periods and long queues	Implement a client flow analysis and institute remedial measures.
Satisfaction with all aspects of service provision	Qualitative study – establish reasons for the high satisfaction level.
Employees' work/life balance	Take experiences from work/life research to establish best coping mechanisms.
Lack of opportunities for decision-making	Research student perceptions regarding their involvement on the Phelophepa Health Care Train.

In summary, although the Transnet-Phelophepa HCT is a one of a kind service, the study findings could contribute to strengthening the current mode and processes of health care service provision on the train. Furthermore, the findings could be useful to the Ministry of Health in improving access to health care in rural areas.

Therefore, a summary of recommendations to the Transnet-Phelophepa foundation is as follows:

Policy and operations

- Establish a safety climate programme that will ensure that active service providers participate in safety issues on the Phelophepa train.
- Develop programmes that will contribute towards quality of work/life balance as this was identified as the highest moderate source of stress.

Research

As the study was only conducted on one of the Phelophepa health trains, the recommendation is for a more comprehensive, comparative study on both health care trains. The areas of focus could be to:

- Ascertain the attributes of good student-support. The findings could be used to develop student-support best practice guidelines for the Transnet-Phelophepa HCT.
- Conduct research that focuses on developing co-worker support and best practice guidelines.

Health Ministry

Understanding the needs and expectations of the service users with regards to health care services can help with better delivery and higher utilisation of health services. Furthermore, morbidity and mortality rates would be reduced as satisfied service users are likely to comply with service attendance and treatment. Therefore, the recommendations to the Ministry of Health are as follows:

- Adopt the Transnet-Phelophepa HCT as a practice model of providing scarce and most-needed services in partnership with the private sector, as there is evidence of willingness from private businesses to support health services.
- Expand availability of mobile health care services to enable public access to the most-needed services.
- Consider utilising community service students as well as medical associates in expanding mobile health care services.

7.4 LIMITATIONS

The limitations of this study apply mainly to issues of the population, the sample, changes in the research field that influence data collection, and the generalisability of the findings.

- Due to the small sample size, it was not easy to get the permanent service providers to agree to provide demography-related information because of concerns related to confidentiality and anonymity. Therefore, inferential statistical analysis could not be done.
- Initially, the study was intended to cover the four provinces visited by the Phelophepa train operating at the time. However, the route was amended during the study, and one of the provinces was not visited. In addition, the Phelophepa train was stationed for a period of six weeks in a single area, despite the usual maximum in being one to two weeks. Data collection was affected as only three provinces were visited instead of four. Therefore the sample size reported on in this study, with data being collected over

a five-day period, is smaller than the usual number of service users registered on a daily basis for attendance of Phelophepa train clinics.

- The second factor contributing to limited population access is that service users' data were collected on the fifth week of the six-week period. Therefore, the service users interviewed had come for specific services or to get extra medication.
- A third factor is that it was difficult to interview all the service users at the service terminal point (that is, the pharmacy), as many of the service users travel in groups or in hired transport, and they became anxious about their transport home.
- Subsequent to the commencement of the study, a second health care train, Phelophepa HCT II, was introduced. The results presented herein may thus serve as a pilot study, since some of the aspects of the preliminary report presented to the Transnet Health Portfolio manager have since been implemented.
- Both the qualitative and quantitative results are not generalisable due to the small sample size and the uniqueness of the Transnet-Phelophepa HCT, being the first train of its kind in Africa. Therefore, the results cannot easily be extended beyond the health train boundaries.
- Limited literature on mobile health care service precluded extensive discussion, critical analysis and comparison to other mobile health care settings.

7.5 CONCLUDING REMARKS

The purpose of the study was to explore and describe service providers' and service users' experiences of the Transnet-Phelophepa HCT in order to make recommendations for their health and wellbeing. The purpose of the study was achieved through exploring several aspects of health and wellbeing on the Phelophepa train. A mixed-method convergent parallel case design was applied using five quantitative surveys as well as conducting qualitative in-depth interviews, after which recommendations were formed for health and wellbeing on the train.

It may be concluded that the Transnet-Phelophepa HCT is safe and conducive for service learning, and that service users are satisfied with all the identified aspects of the service provision. However, there are some aspects that emerged where improvement was needed and recommendations for these were formulated in order to improve health and wellbeing on the train.

In summary, this is the first comprehensive study involving the service users, health science students and the permanent employees on the Transnet-Phelophepa HCT.

Despite the limitations and the fact that perceptions are usually time- and events-bound, the findings have practical implications of relevance for primary health care provision and for the provision of mobile health care services.

At the time of publishing this report, individual permanent service providers had already been approached to obtain information related to the proposed recommendations for health and wellbeing on the Transnet-Phelophepa Health Care Train.

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APPENDIX 1

- **ETHICAL CLEARANCE CERTIFICATE**

R14/49 Ms Amme Maud Tshabalala

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M160291

NAME: (Principal Investigator)	Ms Amme Maud Tshabalala
DEPARTMENT:	Nursing Education Charlotte Maxeke Johannesburg Academic Hospital
PROJECT TITLE:	Health and Well-being of the Phelophepa Health Care Train Community: A Mixed Methods Case Study
DATE CONSIDERED:	27/03/2009 (Initial Approval) 01/03/2016 (Recertified)
DECISION:	Approved unconditionally
CONDITIONS:	Renewal previously M090314
SUPERVISOR:	Prof Judith Bruce
APPROVED BY:	Professor P Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	29/05/2009,04/04/2016

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 February and will therefore be due in the month of February each year.

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX 2

- **LETTER OF APPROVAL: CHANGE OF TITLE**

Faculty of Health Sciences
Medical School, 7 York Road, Parktown, 2193
Fax: (011) 717-2119
Tel: (011) 717-2745

Reference: Ms Tania Van Leeve
E-mail: tania.vanleeve@wits.ac.za
15 July 2009
Person No: 0008922X
TAA

Miss AM Tshabalala
Redacted contact info
Birchacres, South Africa

Dear Miss Tshabalala

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 has been approved:

From:	**Mixed methods case study of health and well-being on the Phelophepa Health Care train.**
To	**Health and wellbeing of the phelophepa health care train community: a mixed methods case study**

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

APPENDIX 3

- **LETTER OF APPROVAL: TRANSNET**

Amme Tshabalala

Subject: FW: PhD:Risk assesment study:Transnet- Phelophepa Health Care Train

From: Lynette Coetzee Transnet JHB
Sent: Friday, May 15, 2009 12:32 PM
To: 'tshabalala@wits.ac.za'
Cc: Lujeanne Roos Transnet JHB; 'Madeline Ntikinca Phelophepa'
Subject: PhD:Risk assesment study:Transnet- Phelophepa Health Care Train

Dear Ms Tshabalala,

Your letter dated 20 March 2009 and our previous discussions dated 2007 refer.

We will honor our approval to allow you to conduct a study, including questionnaires on the Train. All arrangements have however to be approved and clear by Sister Magdeline Ntikincka, the Phelophepa Manager. This includes dates you require to be at the train, interaction with staff and patients and any interviews to be scheduled.

We also approve the publication of a paper on the findings. I do however need to receive such findings for verification and approval before the publication thereof.

Kind regards,

TRANSNET

Dr. Lynette Coetzee
Portfolio Manager (Health)
Transnet Foundation
Transnet Limited

011 308 2495 | 083 283 6695
011 308 2574 | Lynette.Coetzee@transnet.net
www.transnet.net

DISCLAIMER: The information contained in this communication is subject to copyright and intended only for the use of amme.tshabalala@wits.ac.za. Unauthorised use, disclosure, or copying is strictly prohibited. Should a virus infection occur as a result of this communication the sender will not be liable. If you have received this communication in error, please notify lindiwe.hlabangana@transnet.net.

2009/05/18

APPENDIX 4

- **DATA COLLECTION QUESTIONNAIRE: WORKPLACE SAFETY CLIMATE**

WORKPLACE SAFETY CLIMATE
DATA COLLECTION QUESTIONNAIRE

Research code number: _____

SECTION A: Demographic Data

1. Name of train station _____

2. Age _____

3. Gender (tick a relevant answer)

Male	1
Female	2

4. Category of student: (tick a relevant answer)

Optometry	1
Nursing	2
Dental	3
Pharmacy	4
Psychology	5
Hotel management	6

SECTION B: Perceived Safety Climate

Management's concerns and safety activities

1. How important do you think your safety practice is to the management of the T-PHCT? (Tick a relevant answer)

Very important	1
Relatively important	2
Not at all important	3

2. How much emphasis does the supervisor place on safety practices on the T-PHCT? (Tick a relevant answer)

Regularly & frequently makes us aware of dangerous work practices on the T-PHCT	1
Occasionally points out the most dangerous work practices and conditions	2
Seldom mentions danger or safety practices	3
Never mentions danger or safety practices.	4

3. How much do supervisors and other top management seem to care about your safety on the T-PHCT? (Tick a relevant answer)

They do as much as possible to make the job safe	1
They are concerned about safety but they could do more than they are doing.	2
They are only interested in getting us to attend to patients needs as fast as possible.	3

4. On arrival on the train were you given safety instructions?

Yes	1
No	2

5 Are there regular job safety meeting at your job site (department)?

Yes	1
No	2

6 Is the proper equipment for your tasks available at your job site (department)?

Always	1
Most of the time	2
Occasionally	3
Rarely	4
Never	5

STUDENTS' RISK PERCEPTIONS

Perceived control

7. How much control do you feel you have yourself over what happens to your safety on the T-PHCT? (Tick a relevant answer)

Almost no control	1
Almost total control	2
Little control	3

Perception of risk taking

8. Is taking risks part of the job on the T-PHCT? (Tick a relevant answer)

Very much	1
Somewhat	2
Not at all	3

Perceived likelihood of injuries

9. How likely do you think it is that you might be injured on the T-PHCT? Would you say it is: (Tick a relevant answer)

Very likely	1
Somewhat likely	2
Not very likely	3
Not at all likely	4

SECTION C: Job Demands, Decision Latitude and Support

Decision latitude characteristics
(Tick a relevant answer)

Characteristics		Strongly disagree	Disagree	Agree	Strongly agree
10	Job requires a high level of skill				
11	Get to do a variety of different things				
12	Job requires learning on the job				
13	Job requires creativity				
14	Opportunity to develop own special abilities				
15	Allows me to make a lot of decisions on my own				
16	Freedom to decide to do work				
17	Have a lot to say about what happens				
18	Involves a lot of repetitive work				

Supervisor support (Tick a relevant answer)

Characteristics		Strongly disagree	disagree	Agree	Strongly agree
19	Helpful in getting job done				
20	Successful in getting people to work together				
21	Is concerned for welfare of those under him				
22	Pays attention to what I am saying				

Co-worker/manager support (Tick a relevant answer)

Characteristics		Strongly disagree	disagree	Agree	Strongly agree
23	People I work with are friendly				
24	Are helpful in getting the job done				
25	Are competent in doing their jobs				
26	Take an interest in me				

Thank you very much for participating in the study.

APPENDIX 4.I

- **STUDENT INFORMATION LETTER**

HEALTH AND WELLBEING OF THE PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

STUDENT INFORMATION LETTER

Dear Student

My name is Mardulate Tshabalala and I am a Community Health Nursing Lecturer at the University of the Witwatersrand. You are invited to consider participating in a study to describe your perception of safety on the Transnet-Phelophepa HCT.

The research is part of the requirements for the degree of Doctor of Philosophy.

If you agree to participate I would like you to complete a questionnaire supplied in an envelope. This will take approximately 15 minutes. After completing the questionnaire you are requested to place the sealed envelope with the completed questionnaire in a box placed in your department. The researcher or research assistant will be available to assist with the process.

Anonymity is guaranteed as neither names nor identifying data will be recorded on the questionnaire. The sealed envelope with a completed questionnaire will be opened by the researcher.

Participation is entirely voluntary. Completion of the questionnaire implies that you have agreed to participate in the study. There are no risks involved. Refusal to participate or to withdraw from the study at any time is assured and will not be detrimental to you in any way. You may also refuse to answer any questions presented on the questionnaire.

For more information or queries, please contact me at [redacted][cell phone number] or [redacted][landline number].

Findings of the study will be made available to the Transnet-Phelophepa HCT senior management and all the permanent staff members working on the train.

Thank you for taking the time to read this information letter.

Yours sincerely

Mardulate Tshabalala

APPENDIX 4.II

- **GRANT OF PERMISSION TO USE RESEARCH TOOL**

From: Nicole Dedobbeleer [redacted]
Sent: 13 March 2009 07:27 PM
To: Amme Tshabalala
Subject: RE:

Importance: High

Dear Amme,

You have my permission to use the tool.

Good luck in your research.

Sincerely,

Nicole Dedobbeleer

APPENDIX 5

- **LETTER OF PERMISSION TO USE RESEARCH TOOL**



6 March 2009

To whom it may concern:

RE: Inclusion of psychological test material in the Ethics application for approval of study documents

This letter refers to the Ethics Committee's request that sample material or items of questionnaires used in Amme (Maude) Mardulate Tshabalala's study be included in the documentation submitted to the Ethics Committee. The Sources of Work Stress Inventory (SWSI) has not yet been classified as a psychological test by the Psychometric Committee of the Professional Board for Psychology at the Health Professions Council of South Africa (Form 207), but by its nature could fulfil the requirements of such a classification, as it is a measure of stress.

With regard to the Ethics Committee's request to obtain a copy of the SWSI and keep a copy on file, it is the responsibility of Jopie van Rooyen & Partners SA (Pty) Ltd [JvR], as distributors of this assessment, to refuse permission. According to the Health Professions Act no. 56 of 1974, the control over psychological tests is deemed an act pertaining specially to the profession of psychology (section 37, subsection 2), and it would thus constitute an offence for the Ethics Committee to have such a psychological test in its possession if this was not under the control of a psychologist at all times.

If you have any queries regarding the above matter, please feel free to contact me.

Yours sincerely,



Nicola Taylor
MSc (Psych)
Associate / Head: Research

jopie van rooyen & partners sa
psychological test providers in africa
15 Hunter Avenue, Ferndale, Randburg
P.O. Box 2560, Pinegowrie, 2123
Tel: +27-11-781 3705/6/7
Fax: +27-11-781 3703
e-mail: nicola@jvrafrica.co.za
web: www.jvrafrica.co.za

- **LETTER OF INTERPRETIVE ASSISTANCE**

From: Nicola Taylor [mailto:[redacted]]
Sent: 04 March 2009 01:15 PM
To: Amme Tshabalala
Subject: RE: SWSI

Dear Amme (or do you prefer Maude?),

Please accept my sincere apologies for the incredible delay in my response to you. We have had no access to our external email this week until today, which has been incredibly frustrating.

Your research sounds fascinating, and we would love to be involved in some way. Obviously the dilemma lies in the fact that you are not a registered psychologist, which you have indicated, but we would be happy to supply a registered psychologist with the material and provide you with any interpretive assistance as you would need.

Have a wonderful day!

Kind regards,

Nicola

Nicola **Taylor** MSc (Psych)
Associate / Head: Research

Jopie van Rooyen and Partners SA
Psychological test providers in **Africa**
[redacted] Ferndale, Randburg
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Fax: [redacted]
e-mail: nicola@jvrafrica.co.za
web: www.jvrafrica.co.za

APPENDIX 6

- **QUESTIONNAIRE**

ABOUT YOU

Before you begin we would like you to answer a few general questions about yourself: by circling the correct answer or by filling in the space provided.

What is your gender? **MALE / FEMALE**

What is your date of birth? ____/___/_____. (day/month/year.)

What is the highest education you've received?
None at all
Primary school
Secondary school
Tertiary

What is your marital status?
Single
Married
Living as married
Separated
Divorced
Widowed

Are you currently ill? **YES / NO**

If something is wrong with your health what do you think it is?
Please write your illness(s) or problem here:_____
_____

Instructions

This questionnaire asks how you feel about your quality of life, health and other areas of your life. **Please answer all the questions.** If you are unsure about which response to give to a question, **please choose the ONE** that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last two weeks.** For example, thinking about the last two weeks, a question might ask:

		Not at all	Not much	Moderately	A great deal	Completely
	Do you get the kind of support from others that you need?	1	2	3	4	5

You should **circle** the number that best fits how much support you got from others **over the last two weeks.** So you would circle the number 4 if you got a great deal of support from others as follows:

		Not at all	Not much	Moderately	A great deal	Completely
	Do you get the kind of support from others that you need?	1	2	3	4	5

You would circle the number 1 if you did not get any of the support that you needed from others in the last two weeks. Please read each question, assess you feelings, and **circle** the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
1	How would you rate your quality of life?	1	2	3	4	5

		Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
2	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3	How much do you feel that pain prevents you from doing what you need to do?	1	2	3	4	5
4	How much do you need medical treatment to function in your daily life?	1	2	3	4	5
5	How much do you enjoy life?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
6	To what extent do you feel life to be meaningful?	1	2	3	4	5
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5
9	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	To what extent do you have enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

The following questions ask you to say **how good or satisfied** you have felt about various aspects of your life **over the last two weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good
15	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work?	1	2	3	4	5
19	How satisfied are you with yourself?	1	2	3	4	5
20	How satisfied are you with your personal relationships?	1	2	3	4	5
21	How satisfied are you with your sex life?	1	2	3	4	5
22	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24	How satisfied are you with your access to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to **how often** you have felt or experienced certain things **in the last two weeks.**

		Never	Seldom	Quite often	Very often	Always
26	How often do you have negative feelings, such as blue mood, despair, anxiety, depression?	1	2	3	4	5

Did someone help you to fill out this form? **YES / NO**

THANK-YOU FOR YOUR HELP

APPENDIX 6.I

- **PARTICIPANTS INFORMATION LETTER**

HEALTH AND WELLBEING OF THE PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

PERMANENT STAFF MEMBER INFORMATION LETTER

Dear Colleague

My name is Mardulate Tshabalala and I am a Community Health Nursing Lecturer at the University of the Witwatersrand. Colleague you are invited to consider participating in a study to describe your perception of your quality of life. The research is part of the requirements for the degree of Doctor of Philosophy.

If you agree to participate, I would like you to complete a questionnaire in an envelope. This will take approximately 35 minutes. After completing the questionnaire you are requested to place the sealed envelope with the completed questionnaire in a box placed in the dining car. The researcher will be available to assist with the process.

Anonymity is guaranteed as neither names nor identifying data will be recorded on the questionnaire. The sealed envelope with a completed questionnaire will be opened by the researcher.

Participation is entirely voluntary. There are no risks involved. Completion of the questionnaire implies that you have agreed to participate in the study. Refusal to participate or to withdraw from the study at any time is assured and will not be detrimental to you in any way.

For more information or queries, please contact me at [redacted] or [redacted]. Findings of the study will be made available to the: Transnet-Phelophepa HCT senior management and all the permanent staff members working on the train.

Thank you for the time to read this information letter.

Yours sincerely

Mardulate Tshabalala

APPENDIX 6.II

- **INFORMATION FOR WHOQOL USERS**

WHO Field Centre
for the Study of Quality of Life

UNIVERSITY OF BATH

Information for WHOQOL Users

Thank you for your interest in the WHOQOL (World Health Organisation Quality of Life Assessment). We are continuing to develop and standardise various versions of the WHOQOL; internationally these scales have been administered to more than 16,000 people in over 40 countries world-wide.

Core Instruments

The WHOQOL-100 contains 100 questions covering 25 facets or dimensions of quality of life that have a high level of international consensus. Some socio-demographic and health information is also obtained. There is an optional appendix of questions about the importance of these facets to quality of life (Importance Questions). The UK-WHOQOL-100 includes two additional national questions covering issues that are important to people in UK. A short form of 26 items - the WHOQOL Bref - has now been developed. These versions of the WHOQOL have good properties of reliability and validity both in UK and internationally. Sensitivity to change is still being fully investigated.

Modules for Specific Conditions or Diseases

To satisfy measurement requirements in certain diseases and conditions, some modules of specific items have been created for addition to the core instrument. The WHOQOL-SRPB contains 32 further questions covering 8 facets on spirituality, religion and personal beliefs related to health and quality of life. English language versions of WHOQOL modules are being developed for research on older adults (WHOQOL-Old), for people living with HIV and Aids (WHOQOL-HIV), and for those in Chronic Pain (UK only). Documentation for the WHOQOL-HIV and Chronic Pain Module is only partially available at present. The WHOQOL-Old questionnaire is expected to be available at the end of 2004.

Terms and Conditions of Use

Permission to use the WHOQOL is granted for each individual study. Further permission is needed if you intend to use it in any other research or for other purposes. Any permission obtained from the UK Centre to use one of the WHOQOL instruments pertains to the UK English versions only. If you wish to use any other language version e.g. Australian English, US English, you will need to obtain permission from the Principal Investigator in the relevant Centre to use their language version. Information about the location of other Centres can be found at the following website: www.who.int/msa/qol

Before registering as a WHOQOL User, please read the following Terms and Conditions:

Users agree that they will not modify, abridge, condense, translate, adapt, recast or transform any version of the UK WHOQOL instruments in any manner or form including but not limited to any minor or significant changes in the wording, organisation or administration procedures for the UK WHOQOL instruments without prior written agreement of the Director (Professor S Skevington, s.m.skevington@bath.ac.uk).

You agree that you will not reproduce copies of the UK WHOQOL instruments except for the limited purpose of generating sufficient copies for use in investigations stated hereunder and shall in no event distribute them to third parties by sale, rental, lease, lending or any other means or use them for conducting studies other than those specified in the UK WHOQOL User Agreement form.

APPENDIX 7

- **PERMANENT SERVICE PROVIDERS INTERVIEW GUIDE**

HEALTH AND WELLBEING OF THE
PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

Permanent Staff Members Interview Schedule

Main Question

I would like you to tell me about working and living on the Phelophepa Health Care Train?

Probes

- Physical work environment
- Living environment
- Wellbeing on the train
- Being away from home
- Areas that need to change or be improved
- Suggestions/recommendations

APPENDIX 7.I

- **INFORMATION LETTER**

HEALTH AND WELLBEING OF THE
PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

Permanent Staff Member Information Letter

Dear Colleague

My name is Maude Tshabalala and I am a Community Health Nursing Lecturer at the University of the Witwatersrand. I would like to invite you to participate in a study to explore and describe your experiences of life on the Transnet-Phelophepa HCT.

The research is part of the requirements for the degree of Doctor of Philosophy.

If you agree to participate, **an in-depth interview** using a semi-structured interview guide will be conducted. This will take approximately an hour. The researcher will be responsible for conducting the interview and any clarification will be done accordingly. The in-depth interview and the discussions occurring will remain strictly confidential. With your permission the interview will be tape recorded for transcription purposes. Anonymity is guaranteed as neither names nor identifying data will be recorded in the transcripts nor in the written dissertation or in any article published from the data. You may also refuse to answer any questions presented to you in the interview should you feel uncomfortable.

Participation is entirely voluntary. There are no risks involved. Refusal to participate or to withdraw from the study at any time is assured and will not be detrimental to you in any way. Should you agree to participate please sign the attached form.

For more information or queries, please contact me at [redacted] or [redacted]. Findings in the form of analysed group data will be made available to the: Transnet-Phelophepa HCT senior management and all the permanent staff members working on the train.

Thank you for the time to read this information letter.

Yours sincerely
Mardulate Tshabalala

APPENDIX 7.II

- **CONSENT FORM FOR INTERVIEW**

HEALTH AND WELLBEING OF THE
PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

PERMANENT STAFF MEMBERS CONSENT FORM

I have been fully informed and understood the contents of the information sheet and thus give consent to participate in the study**.** I have had an opportunity to ask questions and these had been answered to my satisfaction. I understand that I may withdraw from the study at any point without penalty and that there is no remuneration for participating.

I hereby consent to participate in the study and for recording the interview.

Participants' signature: ---------- Date: ----------

Signature of researcher: ---------- Date: ----------

APPENDIX 8

- **SERVICE USERS' QUESTIONNAIRE**

SERVICE USERS' OPINIONS ON HEALTH CARE SERVICE PROVISION ON THE PHELOPHEPA HEALTH CARE TRAIN

INTERVIEW SCHEDULE **NUMBER: _____**

SECTION A: DEMOGRAPHIC DATA

1. Name of train station _____
2. Age _____

3. Gender (tick a relevant answer):

Female	1
Male	2

4. Marital status:

Married	1
Widow	2
Never married	3
Divorced	4

5. Employment status (tick a relevant answer):

Employed	1
Unemployed	2
Pensioner	3
Disabled	4
Scholar	5

6. Type of employment (tick a relevant answer):

Farm worker	1
Domestic worker	2
Self employed	3
Factory Worker	4
Road Works	5
Catering	6
Other	7

7. Level of education (tick a relevant answer):

Has never attended school?	1
Sub A–STD II (Grade 1–4)	2
STD III–VI (Grade 5–8)	3
STD VII–X (Grade 9–12)	4
Tertiary education: Diploma / Certificate	5
Degree	6

SECTION B: <u>UTILIZATION OF THE TRANSNET-PHELOPHEPA HCT SERVICES</u>

8. How long does it take you to get to the T-PHCT? (Tick a relevant answer)

10–30 minutes	1
30 minutes–1 hour	2
1–2 hours	3
2–5 hours	4
More than 5 hours	5

9. Is **<u>this the first time</u>** that you are using the T-PHCT service? (Tick a relevant answer)

Yes	1
No	2

If (Y) move to question 12.

10. Number of times service utilised:

Twice	1
Thrice	2
Four times	3
Five times	4
More than five times	5

SECTION C: <u>KNOWLEDGE OF THE AVAILABLE SERVICES ON THE T-PHCT</u>

11. Do you know which services are offered on the T-PHCT? (Tick a relevant answer)

Yes	1
No	2
Some service	3

12–18: If (Y), which services? (Tick all relevant answers)

		Y	**N**
12. Health Clinic	A	1	2
13. Dental services	B	1	2
14. Eye clinic	C	1	2
15. Diabetic screening	D	1	2
16. Pap smear service	E	1	2
17. Prostrate screening	F	1	2
18. Counselling / Psychology	G	1	2

19. Are there any other services that are needed by your community but **<u>are not offered</u>** on the Phelophepa Health Care Train?

Yes	1
No	2

20.Q If (Y), which other services are needed?

_____

SECTION D: <u>SATISFACTION WITH THE AVAILABLE SERVICES</u>

21–24: Please state services consulted today:

	Yes 1	No 2
21. Health Clinic		
22. Dental services		
23. Eye clinic		
24. Psychology services		

25. Do you find the times / days of offering the mobile health service convenient to you? (Monday – Friday)

Yes	1
No	2

26Q. If (N), explain why: _____

27. Are you satisfied with the Transnet-Phelophepa HCT being offered once every two years?

Yes	1
No	2

28. If (N), what do you prefer?

At least once per year	1
At least twice per year	2
At least thrice per year	3
If none of the above, please specify	4

29. Are you satisfied with how your problem was managed by the students?

Yes	1
No	2

29Q. If (N), explain: _____

30. Did the student explain or answer all your questions about your illness?

Yes	1
No	2

31. What is your opinion on the attitude of the students towards the community?

Bad	1
Good	2
Excellent	3

32. Is there a time / moment / place when you felt unsafe on the Transnet-Phelophepa HCT?

Yes	1
No	2

32Q. If (Y), please explain _____

33. Do you have any other problem with the Transnet-Phelophepa HCT?

Yes	1
No	2

33Q1. If (Y), explain: _____

33Q2. Is there anything else that you would like me to know about the Transnet-Phelophepa HCT?

_____
_____
_____

Thank you very much for participating in the study

APPENDIX 8.I

- **INFORMATION LETTER**

HEALTH AND WELLBEING OF THE
PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

INFORMATION LETTER

Dear Service User

My name is Mardulate Tshabalala and I am a Community Health Nursing Lecturer at the University of the Witwatersrand. I would like to invite you to participate in a study to explore and describe your knowledge of, and satisfaction with the service provided on the Transnet-Phelophepa HCT. The research is part of the requirements for the degree of Doctor of Philosophy.

Should you agree to participate an interview using a structured interview guide will be conducted. This will take approximately an hour. The researcher or assistant will be responsible for conducting the interview and any clarification will be done accordingly. The interview and the discussions occurring will remain strictly confidential. Anonymity is guaranteed as **neither** names nor identifying data will be recorded on the transcripts nor in the written dissertation or in any article published from the data. You may also refuse to answer any questions presented to you in the interview should you feel uncomfortable.

Participation is entirely voluntary. There are no risks involved. Refusal to participate or to withdraw from the study at any time is assured and will not be detrimental to you in any way. Your responses will be kept confidential. Should you agree to participate please sign the attached form.

For more information or queries, please contact me at [redacted] or [redacted]. Findings of the study will be made available to the: Transnet-Phelophepa HCT senior management and all the permanent staff members working on the train.

Thank you for the time to read this information letter.

Yours sincerely
Mardulate Tshabalala

APPENDIX 8.II

- **Transnet-Phelophepa HCT SERVICE USERS CONSENT FORM**

HEALTH AND WELLBEING OF THE
PHELOPHEPA HEALTH CARE TRAIN COMMUNITY

Transnet-Phelophepa HCT SERVICE USERS' CONSENT FORM

I have been fully informed and understood the contents of the information sheet and thus give consent to participate in the study**.** I have had an opportunity to ask questions and these had been answered to my satisfaction. I understand that I may withdraw from the study at any point without penalty and that there is no remuneration for participating.

Participants' signature _____

Signature of researcher _____

Date: _____

APPENDIX 9

- **TRANSCRIPT SPECIMEN**

Researcher: Please tell me about working and living on the Phelophepa Health Care Train?

Participant: Working and living on the Phelophepa Health Care Train is a big challenge to me, socially; then you feel like life is moving ahead on the other side, your colleagues are moving ahead on the other side.

Researcher: What do you mean when you say it's a challenge?

Participant: It's a challenge; basically you see your loved ones after quite a period, and another thing, there might be family gatherings, family matters; which are taking part on the other side of the world, and you are not able to attend such events being on the Phelophepa Health Care Train. Then you see your family and loved ones after a period of just about a month, 2 weeks' time intervals you know.

Researcher: So your main issue is about being away from home?

Participant: Yeah, the main issue is about being away from home, then the issue of social challenge, you know to meet friends, be with friends, go out gathering and find out what life is all about on the other side you know.

Researcher: Yeah so, how does it make you feel, you know, when things are happening and you are not there?

Participant: You feel like you are being left out sometimes, so even with that 1 month and 2 weeks apart when you go home, sometimes you can catch up but 'No, no no no' you'll find that some other people they have moved…

Researcher: They've moved on?

Participant: Yeah they have...

Researcher: And how do you try to strike a balance between work and family?

Participant: Work and family you know since I've joined Phelophepa most of my concentration is about work so I spend less time focusing on family issues; as it is even with the fellowship period, you are not able to see all family members and relatives; you know, the time interval by then is quite short, you know, to see them and listen to everyone's' stories, to get updated on what is happening with the entire family or relatives.

Researcher: How has this situation impacted on you and your family, negatively or positively?

Participant: For other people they do understand the working environment but for some it's quite not easy for them to understand [*clears throat*] the situation that you are operating in, you know. I can say I have my own view towards my occupation or my work that I'm doing; then they also have their own view and also their expectations from my side, but whatever they expect from my side; you might find that I'm not [*clears throat*] meeting it according to their expectation, so that's where another challenge comes in.

Researcher: Ok, tell me about the physical working environment?

Participant: Work environment… for my work it entails a matter of about physical energy, to carry out my daily duties, and also mental you know, you have to be much involved. Then the environment within the train, the space is quite a challenge to some of us [*clears throat*].

Researcher: What do you mean when you say to some of us?

Participant: [*Laughs*]*…*

Researcher: [*Laughs*]*…* to some of you?

Participant: No compared to the working environment that I've been before…

Researcher: Ok…

Participant: Yeah, being on the train, space is quite a challenge; it's a very confined space as it is and the issue of infection. If there might be a spread of infection within the working area, it's a work and a living in area so, which means that you get exposed to such.

Researcher: Is that your only concern about your working environment, the exposure to work environment infections?

Participant: Yeah infections, that's the most important thing towards myself, yeah.

Researcher: And the workload?

Participant: Workload as such up to now, for the experience that I had it was fine or it was ok to carry the work for a period of 9 months, so having to consider another year having the same workload, you find like sometimes that your body can't take it any more you know, it's like you rest assured like now I can't, so which means if you get a new person on a yearly basis they can perform towards their minimum… no they can perform to their maximum performance as it is, but for you to take the second round and the third round, you know, then you will be declining with your performance as time goes by.

Researcher: And what do you think is the cause of that?

Participant: I can say it's the workload as it is, plus the energy, because when you come you are more energetic then you can face those last targets that you have to, but then for the next coming year as it is you might find like '*no no'* you can't take it any more so your performance gets limited and also your targets won't be you know as concrete to the previous year.

Researcher: Is it about energy or about motivation?

Participant: To my side I cannot just say… motivation can be there as it is you know but the matter of energy, physical energy as I mentioned for my work it entails a matter of about physical energy and also mental you need to be you know.

Researcher: Referring to physical energy, is there anything that could help in terms of boosting your physical energy?

Participant: …

Researcher: Is it something that you could define as being problematic on a day-to-day basis?

Participant: To my experience as such, having to see such a number of patients on one-on-one basis, having the number of students to operate with instead of being just one person is totally impossible you know, and I'm suggesting that we have a second personnel on board who can also help me with supervision, and at least we'll be providing quality healthcare, and also for our health as it is you won't be exhorting too much of your energy as such.

Researcher: Ok, do you ever feel like not having sufficient staff members compromises the quality of healthcare that is provided?

Participant: Yeah on certain instances I do have that feeling, hence I'm motivating the issue of how can it be if they can provide a second personnel of the same qualification placing both of us on board so we can, you know, deliver quality healthcare and quality supervisions to students.

Researcher: Ok, and what do you think of your living environment?

Participant: Living environment? Maybe if you can make it clearer?

Researcher: Are you satisfied with your living environment? Yeah it's an open-ended question. [*Laughs*] What are your challenges, what is it that you enjoy the most?

Participant: Living environment is just a matter of... you don't have any options, you know. We just have to reside within the train, hence we get stationed in a place for a week, then we have to move to the next station as it is, it's living in your working environment so even if you can have working conflicts within team members, sometimes it's not quite easy because sometimes I feel like we had an argument between me and my next door neighbour maybe during the monthly meetings, the general meetings as such you know, and in the afternoon you are residing next to them, to each other, and it's not quite easy as such because you can feel that there is tension between the two of you in such a way. So working and staying in the same place, it's not quite an easy task.

Researcher: Hmm and how does it make you feel to know that you are at work and in the evening you are still in the same environment?

Participant: In the same environment?

Researcher: Uh huh [*prompts*]

Participant: [*Chuckles*] Most of the days it just reminds me of my tertiary life as such. Like you wake up [in the dorm], you go to school, you come back [to the dorm]. It's just like that, like you're following that old pattern you know as to varsity, but in varsity you have your freedom to go out and come back, but whereas in the working environment you are at work, there are certain policies that guide you, then you have to abide to them… so I always say that staying there is like living condition/living zone [*clears throat*] is much more comfortable, but well, it's not.

Researcher: So you didn't experience problems in adjusting to the type of lifestyle on the train?

Participant: On the train?

Researcher: Uh huh [*prompts*]

Participant: Initially it was not quite easy… the bed, the bed, that is the other thing. It's a single bed, and for you to turn, you need to tell yourself that 'now it's time for me to turn to the other side', and you turn. In other cases you find that your blankets are just falling off because you have not adjusted to the bed as it is, so those are some of the issues; the bed, the issue of the space within the room. You know, you don't even have enough space to stretch or whatever, you know.

Researcher: Ok, you know we've started off with … the fact that being on the train has got an impact on your family life, but what about your career and your achievements?

Participant: Career and achievement? In which way?

Researcher: Has living on the train had an impact on your goals or dreams that you strive to achieve also in your career?

Participant: To my experience up to so far [*clears throat*] it's not... a favourable place where you can carry on with your studies, while you're working. As I've mentioned, space is a challenge, you know, when you're studying, you need your own space to be free to move if you're tired and you can stand up and walk or maybe sit on a coach and change positions, or just to go out to refresh your mind, so those things are sometimes quite impossible if you are studying and another thing, for you to study it has to be… it's like you're limited for your studies so which means that you can only enrol for courses which are for long distance and training. Even enrolling for those courses sometimes it's quite a challenge because in other areas maybe we move then you need internet access and it's not easy because of bad or poor signals as such. Then if it's long distance studying using mail bags, it's quite a challenge because we get mailbags after two weeks and you need to submit your assignments so you know it's not favourable to ensure progress in your studies.

Researcher: How would you describe you know support that you get from management concerning your studies or dealing with family issues?

Participant: From the management point of view, the support that they give us… if you're having family issues which are much more you know reasonable and heavier; then they do support us; in such cases they allow you to go home you know, as it is. Then also regarding the issue of development towards your current position within [*yawns*] the train they allow you to go on workshops, courses as such.

Researcher: So they are supportive and what about your colleagues?

Participant: Colleagues?

Researcher: Your relationship with your colleagues?

Participant: Colleagues… it's a working environment so the competition is too high, not like you'll get support from most of the colleagues as such…

Researcher: Competition is tough in which area?

Participant: Competition related to the work performance you know, I feel like I'm performing well compared to the other clinics, as such you know then there'll be that issue of, you know, jealousy as such. So it's not like you have to depend on them to get their entire support as you can think others are supporting you, but then on the other side *'no no'* you find that they are sabotaging you.

Researcher: Ok, what do you say about team work, you know the different people functioning as a team, you know, cooperation and collaborating with one another? Do you get a sense that you are functioning as a team?

Participant: A team?

Researcher: Uh huh [*prompts*]

Participant: As in the entire train as it is or…

Researcher: Yes, in the entire train.

Participant: Team work yes, with my experiences, up to so far there is team work because mainly we're working with one machine[1] just to deliver quality health to the people in the rural areas of South Africa you know, so most of the people are determined to do their jobs to carry out their duties as it is so there is team work.

Researcher: Ok and then when comes to communication?

[1]This interview was conducted when there was only one Phelophepa train operating.

Participant: Communication... there are other areas where you find that there is lack of communication; you know, mainly when there are issues that arise when related to other work situations within the work environment, there is lack of communication.

Researcher: Can you give me an example?

Participant: An example?

Researcher: Yeah?

Participant: [*sighs*] I'm stuck. [*Laughs*]

Researcher: You're stuck… [*Laughs*] Alright, what's your perception of safety on the train?

Participant: Safety, safety from what?

Researcher: From any risks, safety in terms of the occupational health setting any hazards?

Participant: Yeah as I've mentioned...

Researcher: Are you in a safe environment? Let me put it that way.

Participant: Ok, safety as I've mentioned at the working environment and mainly that deals with health issues then my most fear is the issue of, then if there might be a serious virus or a bacteria you know, that can be contacted through clinic areas, so which means that everyone who is residing in the train in that period of time, they can contract the infections as such... and the other point, the train on its own it's risky you know. Then I'm just happy that we have this committee...

Researcher: When you say that the train is risky what do you mean?

Participant: The train?

Researcher: Uh huh.

Participant: It's a risk as it is?

Researcher: In which way?

Participant: The train is designed basically to transport people for a short period of time but for you to work inside a train and for you to reside within a train, you know, is something else; you do face the issue of train derailment. Then also you know the issue of electricity setting, as you know, that there is [*clears throat*]*...* our electricity is being supplied by two diesel engines, yeah, so you might never know what can happen or what will happen in such cases and that is flammable... those are some of the issues.

Researcher: So you are referring to the fire hazards?

Participant: Yeah the fire hazards as such so those are my concerns.

Researcher: Is there anything else that you'd like to tell me about the train?

Participant: [*Laughs*] Nothing much from my side...

Researcher: And then what would you describe as the biggest challenge on the Phelophepa healthcare train?

Participant: It's being far away from home… not being far away from home you know, just decided that you've left life on the other side yeah being on the train because being on Phelophepa in another city of life, as compared to normal life that people face when they wake up, in the morning they go to work and they do still face those day-to-day issues you know related to their lives, socially and all that you know. But boarding Phelophepa you forget about your social life and everything that is happening and you just focus on you and delivering quality healthcare.

Researcher: What is it that you think could sort of help to address the need to fulfil the needs of your social life? What is it that you think could be done to improve that aspect?

Participant: With my own assessment as such, if you can come up with a plan whereby on a monthly basis we can be given maybe three days to be at home, yes on a monthly basis, so which means that if we operate for a period of about 9 months, so which means we need to have 9 visits to family. It won't be such a loss on that side.

Researcher: Yeah I'm talking about… that would meet the void of being away from the family but I'm referring to your social life on the train? What can be done to ensure that your social wellbeing is taken care of?

Participant: On the train?

Researcher: Yeah, on the train.

Participant: You don't lose track between family side and you being on the train?

Researcher: Yeah I'm referring to improving your social life on the train while you are on the train; you've suggested that every month you should be given three days to visit family, however what about the other days when you are on the train?

Participant: Working as such?

Researcher: After hours?

Participant: There's nothing much that can be done to my experience, because with other relationships you are cellphone-limited, so which means that your relationship depends on a cellphone because it is there, which is not enough as such.

Researcher: Yeah... and the last question... what is it that you enjoy the most about being on the train?

Participant: On the train?

Researcher: Yeah.

Participant: Ok it's when every day, but not every day as such, but on the day I close the clinic and say then maybe there's three or four people that I've passed by, and they say 'thanks for the great job that you are doing,' you know.

Researcher: So for you it's that sense of appreciation?

Participant: Yeah... sense of appreciation.

Researcher: Ok... is there anything else that you think is important for me to know?

Participant: Regarding?

Researcher: Living and working on the train?

Participant: [*sighs heavily*] Living and working on the train, you know, I think to my experience, it's not something that you can do for a long period...

Researcher: By the way, for how long have you been on the train?

Participant: This is my second year living on the train, so basically, it's not like you can take it as lifelong employment, but you can carry on, it's something that you can do for a short period, minimum of 3 and maximum of 5 [years], if you can.

Researcher: Ok thank you very much for your time; are there any questions that you'd like to ask?

Participant: No not any...

Researcher: Ok, thank you.

APPENDIX 10

- **CO-CODER CERTIFICATE**

Qualitative Data Analysis

PhD in Nursing

Amme Mardulate Tshabalala

THIS IS TO CERTIFY THAT

Dr. Annie Temane has co-coded the following qualitative data:

8 Individual Interviews

For the study:

HEALTH AND WELLBEING ON THE TRANSNET PHELOPHEPA HEALTH CARE TRAIN

I declare that the candidate and I have reached consensus on the major themes, categories and codes reflected by the data during a consensus discussion. I further declare that adequate data saturation was achieved as evidenced by repeating themes.

Annie Temane



M.A.Temane (D.Cur; Research Methodology)

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