

https://dspace.org/

Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda

Uwimana, Marie Chantal

2020
https://hdl.handle.net/10539/31797

Downloaded from a DSpace repository. https://dspace.org/

MEASURING THE IMPORTANCE OF LABOUR SUPPORT PRACTICE FOR MOTHERS AND NURSES AND MIDWIVES AT PUBLIC HEALTH FACILITIES IN RWANDA

Marie Chantal Uwimana

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

Johannesburg, 2020

DECLARATION

I, Marie Chantal Uwimana, declare that this research report (Human Research Ethics Clearance number **M170956)** is my own work. It is being submitted for the degree of Doctor of Philosophy in Nursing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.



Signed at Johannesburg

On the 17th day of August 2020

DEDICATION

I dedicate this thesis

To the memory of my beloved father Deo Uwimana, my beloved mother Emmérence Mukarurangwa and my brother Claude Robert Muvunyi.

To my dearest husband Evode Mukama, and my sons Bruno Izihirwe Mukama and Bruce Kundwa Mukama for their unwavering love and support throughout the journey of this study.

ABSTRACT

Background: The need to support women during labour and delivery at health facilities is important for a positive birth experience and for improving the quality of maternal and neonatal care. Provision of labour support offered by nurses and midwives assist labouring women to cope with the process of childbirth. Little is known about the provision and the measurement of labour support practices in developing countries including Rwanda.
Aim: The aim of this study is to establish the current state of the importance of labour support practices for mothers and nurses and midwives at public health facilities in Rwanda.
Methodology: A descriptive quantitative and cross-sectional design was employed in this study. The study began with a scoping review followed by the development of a labour support tool, then a survey was conducted using the labour support questionnaire with closed and open-ended questions among 648 women in postnatal wards and 154 nurses and midwives working in labour and delivery wards at public health facilities located in Kigali City, Rwanda.
Findings: Best practices of labour support including emotional support, physical support, information and advice and advocacy are implemented in developing countries. The quantitative data revealed that most nurses and midwives were relatively young (<40 years old). Most mothers had only obtained a primary level of education. Nurses and midwives and mothers valued and ranked high the importance of professional support and communication during the childbirth process. Both participant groups ranked the comfort and emotional support as less important. Mothers with primary education attributed a low ranking to the importance of professional support. The majority of nurses and midwives who had spent more than 10 years in labour and delivery wards indicated a limited importance for comfort support. Mothers and nurses and midwives reported that limited infrastructure, shortage of staff and equipment and a lack of awareness of labour support influenced negatively the implementation of labour support practices.
Conclusion: Though nurses, midwives and mothers value and rank highly the importance of professional support and communication during the childbirth process, the effective implementation of labour support practice is often challenged by constrained resources. The recommendations are formulated with regard to nursing practice, management, education, research and policy.

Keywords: childbirth care, health facility, labour support practice, mother, nurse, Rwanda

PRESENTATIONS ARISING FROM THIS STUDY

Uwimana, M. C. (2018). Labour support practices by nurses and midwives. A scoping review. *Annual Nursing Education Conference: Innovation in Education.* Johannesburg, South Africa 5– 7 September 2018.

Uwimana, M.C. (2019). Women's views of labour support practices at selected health facilities in Rwanda. *Join Advanced Seminar. Consortium for Advanced Research Training in Africa*: Ibadan University – Nigeria 21 August 2019

Uwimana, M. C. (2020). Nurses and midwives' views of labour support practices at selected health facilities in Rwanda. *Join Advanced Seminar. Consortium for Advanced Research Training in Africa*: Makerere University-Kampala-Uganda 18 March 2020.

ACKNOWLEDGEMENTS

"Thanks and praise be to God for making this work possible"

I wish to express my thanks and gratitude to the following people who have contributed to the completion of this study:

Dr Nelouise Geyer and Dr Susan J. Armstrong, my supervisors. I am very grateful for your availability, support and motivation throughout this study. You inspired me a lot. I am so honoured to have crossed paths with you.

The Head of Department, Prof. Shelley Schmollgruber and all lecturers of the Department of Nursing Education, Witwatersrand University, thank you for your motivation and support.

The Government of Rwanda and the University of Rwanda. Thank you for the study leave and all support granted to undertake this study.

Special thanks go to the Consortium for Advanced Research Training in Africa (CARTA) for financing this study.

Midwives, nurses and women. This study would not have happened without your willingness to participate in this study. Thank you all.

My gratitude is extended to Dr Sylvestre Nzahabwanayo, for his continuous assistance in statistical analysis.

My husband, Evode Mukama, you are the "wind beneath my wings". Words cannot capture the gratitude, admiration and the love that I have for you. Thank you for loving and supporting me all through ups and downs during my PhD journey.

My sons, Bruno Izihirwe Mukama and Bruce Kundwa Mukama, you are my driving force in all I do. Thank you for your patience, support and giving me time to focus on this study.

My siblings, Albertine Uwizeyimana, Marie Josée Uwamwiza, Yvonne Uwanyirigira and Liliane Sangwa, I have deeper appreciation for you. Thank you for your words of encouragements and prayers. Praise God forever for what he has done for us.

My family, my in laws, friends, and members of Emmanuel Community for always supporting me and particularly praying for me. I thank you for walking this journey with me.

TABLE OF CONTENTS

DECLARATION i
DEDICATION ii
ABSTRACT iii
PRESENTATIONS ARISING FROM THIS STUDY iv
ACKNOWLEDGEMENTS v
TABLE OF CONTENTS vii
LIST OF TABLES xi
LIST OF FIGURES xii
CHAPTER 1 : OVERVIEW OF THE STUDY 1
1.1 INTRODUCTION 1
1.2 BACKGROUND TO LABOUR SUPPORT PRACTICES 1
1.3 PROBLEM STATEMENT 4
1.4 RESEARCH QUESTION 5
1.5 PURPOSE OF THE STUDY 5
1.6 OBJECTIVES OF THE STUDY 5
1.7 OPERATIONAL DEFINITIONS 6
1.8 ORGANIZATION OF THE THESIS 7
1.9 CONCLUSION 8
CHAPTER 2 : METHODOLOGY 9
2 1 INTRODUCTION 9
2.2 RESEARCH DESIGN 9
2.3 QUANTITATIVE APPROACH 9
2.4. CROSS-SECTIONAL SURVEY 10
2.5 RESEARCH SETTING 11
2.6 RESEARCH PHASES 12
2.7 PHASE ONE: SCOPING REVIEW OF LABOUR SUPPORT PRACTICES AND ITS MEASUREMENT 15
2.7.1 Introduction 15
2.7.2 Objective 15
2.7.3 Population 15
2.7.4 Sampling and inclusion criteria 16
2.7.5 Data collection 16
2.7.6 Data analysis 16

2.7.7 Results and outcomes 16
2.8 PHASE TWO: DEVELOPMENT OF A LABOUR SUPPORT QUESTIONNAIRE 17
2.8.1 Introduction 17
2.8.2 Objective 17
2.8.3 Process for tool development 17
2.9 PHASE THREE: SURVEY 21
2.9.1 Introduction 21
2.9.2 Objectives 21
2.9.3 Population 21
2.9.4 Sampling criteria 21
2.9.5 Sample size 22
2.9.6 Data collection 22
2.9.7 Data analysis 23
2.10 RELIABILITY AND VALIDITY 24
2.11 TRUSTWORTHINESS 25
2.12 ETHICAL CONSIDERATIONS 26
Consent to participate in the study 26
Beneficence 27
Justice 27
Anonymity and confidentiality 27
2.13 CONCLUSION 27
CHAPTER 3 : SCOPING REVIEW OF LABOUR SUPPORT PRACTICES BY NURSES AND MIDWIVES AND ITS MEASUREMENT 28
3.1. INTRODUCTION 28
3.2. PURPOSE OF THE SCOPING REVIEW 28
3.3 REVIEW QUESTION 28
3.4. SEARCH STRATEGY AND INCLUSION CRITERIA 28
3.5. COLLATING, SUMMARIZING AND REPORTING THE RESULTS 45
3.5.1 Characteristics of the studies 45
3 5.2 Themes of included publications 46
3.5.3 Instruments identified to measure labour support practice 49
3.6. DISCUSSION 49
3.6.1 Labour support practice 49
3.6.2 Factors influencing the practice of labour support 52
3.6.3 Labour support measurement 54

3.6.4 Nursing implications 55
3.7. CONCLUSION 55
CHAPTER 4 : DEVELOPING A LABOUR SUPPORT QUESTIONNAIRE 57
4.1 INTRODUCTION 57
4.2. INSTRUMENT DEVELOPMENT 59
4.2.1. Item generation 59
4.2.2 Expert judgment 59
4.2.3 Quantification of content validity 60
4.2.4 Translation 62
4.2.5 Pilot test 63
4.3 MIDWIVES' LABOUR SUPPORT QUESTIONNAIRE 63
4.3.1. Reliability of instrument 63
4.3.2. Data cleaning 63
4.3.3 Exploratory factor analysis (EFA) 64
4.4. MOTHERS' LABOUR SUPPORT QUESTIONNAIRE 74
4.4.1 Reliability of instruments 74
4.4.2 Data cleaning 74
4.4.3 Exploratory Factor Analysis (EFA) 75
4.4.4 Confirmatory Factor Analysis for the women's three-factor structure 78
4.5 CONCLUSION 83
CHAPTER 5 : DATA ANALYSIS AND FINDINGS OF SURVEY 84
5. 1. INTRODUCTION 84
5.2 NURSES' AND MIDWIVES' FINDINGS AND ANALYSIS 85
5.2.1 Descriptive analysis: Socio-demographic characteristics of the sample 85
5.2.2 Inferential analysis 88
5.2.3. Nurses and midwives second step analysis 92
5.3 MOTHERS' FINDINGS AND ANALYSIS 93
5.3.1. Descriptive Analysis: Socio-demographic characteristics of the sample 93
5.3.2. Inferential analysis 95
5.3.3. Comparison of scales on socio-demographic features 96
5.3.4. Mothers second step analysis 97
5.4. DISCUSSION OF THE FINDINGS OF THE SURVEY 98
5.4.1 Introduction 98
5.4.2. Demographic characteristics 99
5.4.3 Provision of labour support 100

5.5 CONCLUSION 101
CHAPTER 6 : QUALITATIVE FINDINGS AND DISCUSSION OF SURVEY 102
6.1 INTRODUCTION 102
6.2 FINDINGS 102
6.2.1 Nurses' and midwives' responses 102
6.2.2 Mothers' responses 106
6. 3 DISCUSSION 111
6.3.1 Introduction 111
6.3.2 Factors influencing labour support 111
6.3.3. Elements of supportive care 114
6.4. CONCLUSION 116
CHAPTER 7 : SUMMARY OF FINDINGS, LIMITATIONS, CONCLUSION AND RECOMMENDATIONS 117
7.1 INTRODUCTION 117
7.2 SUMMARY OF MAJOR FINDINGS 118
7.2.1 Phase one: Scoping review 118
7.2.2 Phase two: Development of labour support questionnaire 119
7.2.3 Phase three: Survey 120
7.3 LIMITATIONS 122
Sample of the study 122
Lack of prior research studies on the topic 122
Self- reported data 122
Budget 123
7.4 RECOMMENDATIONS 123
7.5.1 Nursing practice and management 123
7.5.2 Nursing education 124
7.5.3 Nursing research 124
7.5.3 Policy 124
7.5 CONCLUSION 125
REFERENCES 127
APPENDICES 134
APPENDIX A: QUESTIONNAIRE FOR MIDWIVES AND NURSES 134
APPENDIX B: LABOUR SUPPORT QUESTIONNAIRE FOR MOTHERS (English version) 137
Labour support questionnaire for women in post-natal ward 137

APPENDIX C: LABOUR SUPPORT QUESTIONNAIRE FOR MOTHERS (Kinyarwanda version) 140
APPENDIX D: ETHICS CLEARANCE CERTIFICATE 143
APPENDIX E: APPROVAL OF INSTITUTIONAL REVIEW BOARD (IRB) 144
APPENDIX F: PARTICIPANT INFORMATION SHEET (English version) 145
APPENDIX G: PARTICIPANT INFORMATION SHEET (Kinyarwanda version) 147
APPENDIX H: CONSENT FORM (English version) 149
APPENDIX I: CONSENT FORM (Kinyarwanda version) 150
APPENDIX J: CERTIFICATE OF TRANSLATION 151
APPENDIX K: CERTIFICATE OF EDITING 152

LIST OF TABLES

TABLE 1.1: OVERVIEW OF THE THESIS 7
TABLE 2.1: ROAD MAP OF RESEARCH PROCESS 13
TABLE 3.1: CHARTING THE DATA 31
TABLE 3.2: DATA MATRIX OF IDENTIFIED ARTICLES FOR LABOUR SUPPORT PRACTICES 33
TABLE 3.3: DATA MATRIX FOR ARTICLES IDENTIFIED FOR LABOUR SUPPORT MEASUREMENT 41
TABLE 3.4: THEMES AND SUBTHEMES IDENTIFIED 47
TABLE 4.1: EXPERTS' TEAM 60
TABLE 4.2: CRITERIA FOR QUANTIFICATION OF CONTENT VALIDITY 60
TABLE 4.3: CONTENT VALIDITY OF LABOUR SUPPORT QUESTIONNAIRE FOR NURSES AND MIDWIVES 61
TABLE 4.4: MISSING DATA IN MIDWIVES' QUESTIONNAIRE (N=154) 64
TABLE 4.5: EFA ASSUMPTIONS 65
TABLE 4.6: LOADING OF ITEMS IN FACTORS 66
TABLE 4.7: FOUR-FACTOR STRUCTURE FOR NURSES AND MIDWIVES 67
TABLE 4.8: GOODNESS-OF-FIT MEASURES 68
TABLE 4.9: CONFIRMED NURSES' AND MIDWIVES' FOUR-FACTOR STRUCTURE WITH THEIR RESPECTIVE REGRESSION WEIGHTS 70
TABLE 4.10: ITEMS, MINIMUM AND MAXIMUM SCORES IN SCALES 73
TABLE 4.11: MISSING DATA IN MOTHERS' QUESTIONNAIRE (N= 648) 74
TABLE 4.12: EFA ASSUMPTIONS 76
TABLE 4.13: LOADING OF ITEMS UNDER FACTORS 77
TABLE 4.14: WOMEN FACTOR STRUCTURE 78
TABLE 4.15: CONFIRMED WOMEN THREE-FACTOR STRUCTURE 80
TABLE 4.16: ITEMS, MINIMUM AND MAXIMUM SCORES IN SCALES 83
TABLE 5.1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF NURSES AND MIDWIVES (N154) 86
TABLE 5.2: AGE CATEGORIES AND YEARS OF EXPERIENCE IN LABOUR AND DELIVERY WARDS (N154) 87
TABLE 5.3: RANKING OF SCALES FOR LABOUR SUPPORT PROVISION (N = 154) 88

TABLE 5.4: CLASSIFICATION FRAMEWORK OF NURSES/MIDWIVES ACCORDING TO THEIR VIEWS OF THE IMPORTANCE OF LABOUR SUPPORT PRACTICES 92
TABLE 5.5: DISTRIBUTION OF NURSES/MIDWIVES ACCORDING TO THEIR PERCEPTIONS OF THE IMPORTANCE OF LABOUR SUPPORT PRACTICES (N = 154) 92
TABLE 5.6: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE MOTHERS (N = 493) 94
TABLE 5.7: RANKING OF LABOUR SUPPORT SCALES BY MOTHERS 95
TABLE 5.8: CLASSIFICATION FRAMEWORK OF MOTHERS ACCORDING TO THEIR PERCEPTIONS OF THE IMPORTANCE OF LABOUR SUPPORT PRACTICES 98
TABLE 5.9: DISTRIBUTION OF MOTHERS ACCORDING TO THEIR PERCEPTIONS OF THE IMPORTANCE OF LABOUR SUPPORT PRACTICES (N = 648) 98
TABLE 6.1: NURSES' AND MIDWIVES' CATEGORIES AND SUB-CATEGORIES 102
TABLE 6.2: MOTHERS' CATEGORIES AND SUB-CATEGORIES 106

LIST OF FIGURES

FIGURE 2.1: MAP OF RWANDA 12
FIGURE 3.1: SEARCH PROCESS AND INCLUSION 30
FIGURE 4.1: STEPS OF INSTRUMENT DEVELOPMENT 58
FIGURE 4.2: CONFIRMED NURSES' AND MIDWIVES' STRUCTURE 71
FIGURE 4.3: CONFIRMED MOTHERS' STRUCTURE 81
FIGURE 5.1: COMPARISON OF THE IMPORTANCE OF COMFORT ACROSS AGE CATEGORIES 90
FIGURE 5.2: COMPARISON OF THE IMPORTANCE OF COMFORT BASED ON YEARS OF EXPERIENCE IN THE DELIVERY AND LABOUR WARDS 91
FIGURE 5.3: COMPARISON OF THE IMPORTANCE OF PROFESSIONAL SUPPORT ACROSS MOTHERS' LEVEL OF EDUCATION 97

CHAPTER 1 : OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The need to support women during labour and delivery at health facilities is important for a positive birth experience and for improving the quality of maternal and neonatal care (World Health Organization, 2016b). This is confirmed by Adolphson et al. (2016) who reported that improved outcomes of pregnancy are associated with the provision of support to women, particularly during the labour and delivery process at health facilities.

This introductory chapter outlines the background of labour support practices, and provides the problem statement, the research question, the purpose and objectives of the study, the conceptual definition and the organisation of the thesis.

1.2 BACKGROUND TO LABOUR SUPPORT PRACTICES

Throughout history, women have been accompanied and assisted by other women during labour and delivery at home. As mothers have increasingly chosen to give birth in clinical settings, care has shifted from home delivery to giving birth at health facilities. Labouring women admitted at health facilities are assisted by health care providers during the whole period of childbirth. Thus, the role of a female relative and traditional midwives during labour and delivery has been taken over, to a large extent, by trained health professionals (Ford et al., 2009, Ross-Davie and Cheyne, 2014a).

According to Sauls (2006), labour support is an intentional human interaction between a health professional and a labouring woman that assists the labouring woman to cope in a positive manner during the process of giving birth. The term labour support can be described as the caring work or social support that is provided to women during labour and delivery (Hunter, 2009). The World Health Organization (2005) supports and encourages the provision of labour support offered by health care givers to achieve improved birth outcomes. Similarly, Sharma et al. (2015) emphasize the need to support labouring women at maternity services to increase the wellbeing of both a mother and her new-born.

Shifting the place of birth from home to hospital introduces changes to the type and quality of maternal care and the birth environment. At a health facility, women are exposed to frequent medical and non-medical procedures to manage labour and delivery, which are not available at home. Women feel vulnerable during labour and delivery, which is the moment they most value and need support from health care providers (Papagni and Buckner, 2006, Hodnett et al., 2007).

Studies related to midwifery care (Daniel et al., 2015, Romano and Lothian, 2008, Hodnett et al., 2012) reveal positive outcomes that are linked to labour support offered to labouring women. These positive outcomes include early detection of risks during labour and delivery, an increased number of normal births, less use of pain relief, less use of medical interventions, shorter labour, lower rates of postpartum disorders, better outcomes for the new-born, increased satisfaction of women and an improved ability to cope with the birth process.

According to Aune et al. (2014), the presence and support of trained health care providers is important to assist labouring women to cope positively with the process of delivery in a somewhat alien clinical setting. Professional labour support is recommended to detect early maternal and neonatal risks during the process of childbirth in the clinical environment (Floyd, 2013).

Adams and Bianchi (2008) argue that intrapartum nurses and midwives are expected to implement labour support practice through various skills, knowledge and behaviours to impact positively on the birth experience. Similarly, studies conducted in Turkey and the Netherlands make the same assertion and indicate that trained intrapartum nurses and midwives are capable of delivering supportive care, including non-pharmacological methods to assist the women effectively during labour and delivery (Baas et al., 2015a, Isbir and Serçekus, 2017)

Evidence shows that it is not only trained intrapartum nurses and midwives who can provide labour support; there are many types of labour support providers**,** including untrained lay women, female relatives, trained lay women (Doulas), nurses and midwives (Lundgren, 2010). However, the need for clear guidelines regarding roles and responsibilities for all types of labour support providers has been reported, in order to meet labouring women's'

needs during the childbirth process adequately (Ross-Davie and Cheyne, 2014b, Lundgren, 2010). This study focuses on the labour support provided by nurses and midwives.

Categories of labour support have been the concern of several studies, and various ways of providing labour support have been indicated. Sauls (2006) demonstrated six dimensions of labour support: tangible support, advocacy, emotional support and reassurance, emotional support and creating control, security and comfort, and information support. A Cochrane review (2007) categorized labour support into five components of labour support: physical comfort, emotional support, instruction/information, advocacy and partner support. The Royal College of Midwives (2012) suggested labour support care in four dimensions namely physical comfort, emotional support, instructional or informational support and advocacy. For this study the Royal College of Midwives framework with four categories was used.

The views of labouring women on what they require in terms of labour support, or their perceptions of what is required, has been well researched. These relate to labouring women's views, expectations, satisfaction, perceptions and suggestions regarding the care provided to labouring women during labour and delivery. These studies indicate that the inputs from women contribute highly to the process of quality improvement related to childbirth care (Hunter, 2009, Kungwimba et al., 2013, Baas et al., 2015b, Mohammed, 2016).

While the meaning of labour support and its usefulness are clear, labouring women's views and health professionals' views on how it should be delivered and classified are well documented, it does not mean that quality labour support is provided at all health facilities. There are factors that influence the practice of labour support by nurses and midwives, including institutional factors, such as high demands of labouring women versus a shortage of intrapartum nurses and midwives, higher expectations of labouring women, availability of equipment and infrastructure, and the work environment in maternity services (Barrett and Stark, 2010, Aschenbrenner et al., 2016).

In order to ensure that quality labour support is given, it is essential to measure it as indicated in the literature, which illustrates different instruments for labour support measurement from the perspective of both labouring women and nurses/midwives (Aschenbrenner et al., 2016, Nikula et al., 2015, Walker et al., 2015, Daniel, 2013, Barrett and Stark, 2010). However, the available instruments have been developed for use within a different context than Africa, and mainly refer to developed countries. There is scarcity of evidence about the nature of the

provision, and the measurement of labour support in developing countries, including Rwanda. It is therefore not clear whether the existing evidence can be used to develop a labour support measurement tool for labour support in Rwanda.

This study seeks to measure the importance of labour support practice for mothers and nurses and midwives, to provide evidence about the current status of labour support provision in Rwanda, in order to generate evidence to inform the development of an intervention that will enhance existing strategies aimed at improving maternal health status.

1.3 PROBLEM STATEMENT

Several interventions have been implemented in Rwanda to improve maternal health status through increased coverage for maternal health services. However, mothers still die while giving birth. A maternal death audit conducted in Rwandan health facilities indicated that 21% of mothers died during childbirth (Sayinzoga et al., 2016). The same maternal audit and the Rwandan Department of Health recommended further investigation to explore the factors that may negatively affect the provision of care during childbirth, in order to respond to the gaps identified in care rendered to mothers (Rwanda Health Department, 2013, Sayinzoga et al., 2016).

There is evidence showing that labour support provided by health professionals, including nurses and midwives, allows for the early detection of risks and decreases complications around labour and delivery processes (Renfrew et al., 2014). Besides the provision of labour support, skilled birth attendants are recommended to address all critical issues related to quality of childbirth care in order to achieve Sustainable Development Goal Three (SDG3): Ensure healthy lives and promote well-being for all at all ages (Sharma et al., 2015). By the same token, WHO encourages provision of support for women during labour and delivery in order to increase positive birth experiences and improve the wellbeing of both mothers and their new-borns (World Health Organization, 2005). Anecdotally, mothers in Rwanda complain about the lack of labour support provided by nurses and midwives during labour and delivery in public health facilities, although nothing has been documented on labour support practices provided to these women.

Little evidence was found about labour support practices in low income settings, including Rwanda, and a labour support questionnaire has not previously been developed for use within an African context. Those that are available are for use in the United States of America and

other developed countries. There is a need for contemporary information on the measurement of labour support practices for resources constrained settings. Given the fact that little is known about labour support practices in the Rwandan context, this study begins to address this gap. A better understanding of labour support practices and factors contributing to the practice of labour support for labouring women at public health facilities in Rwanda provides evidence to inform the development of an intervention that will enhance existing strategies aimed at improving maternal health status.

This study contributes to the body of knowledge by developing the first labour support questionnaire to measure the importance of labour support practice in the Rwandan context, and it will serve as benchmark to introduce quality improvement measures in maternity services.

1.4 RESEARCH QUESTION

What importance do mothers and nurses and midwives ascribe to labour support practices at public health facilities in Rwanda?

1.5 PURPOSE OF THE STUDY

The purpose of this study is to establish the current state of the importance of labour support practices for mothers and nurses and midwives at public health facilities in Rwanda.

1.6 OBJECTIVES OF THE STUDY

- To establish international best practice with regard to labour support practice and measurement of labour support practice
- To develop and validate a labour support questionnaire for Rwanda
- To explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities in Rwanda
- To explore and describe the views of mothers about the importance of labour support they receive from nurses and midwives at public health facilities in Rwanda

1.7 OPERATIONAL DEFINITIONS

This study used the following definitions.

Midwife is a person who has successfully completed a midwifery education programme that is duly recognized in the country where it is located, and that is based on the International Confederation of Midwives' (ICM) essential competences for basic midwifery practice and the framework of the ICM global standards for midwifery education; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title of midwife, and who demonstrates competency in the practice of midwifery (Renfrew et al., 2014). In this study, a midwife refers to a trained health professional who holds a diploma or a bachelors' degree, registered with the National Council of Nurses and Midwives (NCNM) in Rwanda, and is licensed to care for mothers and new-borns during labour, delivery and after birth at selected study sites during the period of data collection.

Nurse is a person who has graduated from an accredited nursing programme, has successfully passed the state examination for registration and is authorized by the regulatory authority to practice nursing in his/her country (Aschenbrenner et al., 2016). In this study, a nurse refers to a trained health professional who holds a diploma or a bachelors' degree, registered with the National Council of Nurses and Midwives (NCNM) in Rwanda, and is licensed to practice as a registered nurse in labour and delivery wards at selected study sites during the period of data collection.

Labour support is a deliberate interaction between a health professional and a labouring woman that helps the woman to cope with the childbirth process (Sauls, 2006). Labour support is also defined by Bohren et al. (2019) as continuous presence and support provided to women during labour and birth by a health care provider, a lay person or a relative to cover the full spectrum of situations in which women may be accompanied and supported in order to cope with the childbirth process. For the purpose of this study, the labour support refers to non-pharmacologic supportive care, including emotional support, informational support, physical support and advocacy, provided by a nurse or midwife to a woman during labour and delivery.

Health facility is a place where health care is provided; it may be a hospital, clinic, outpatient care centre or specialized care centre (WHO,2015). Health facility for this study represents the selected study sites, including four District hospitals and one Referral hospital.

Mother is a woman who has given birth while a **woman** is an adult female who has the potential to give birth (Alves and Poli, 2016). However, in this study, the terms mother and woman are used interchangeably. In fact, both of them are eligible to get pregnant and to receive labour support cares from nurses and midwives at health facility.

1.8 ORGANIZATION OF THE THESIS

Table 1.1: Overview of the thesis

Chapter		**Objective**
1	Overview of the study	Introduction and background to the study.
2	Research methodology	Describes the research methods used in three phases of this study, namely scoping review, development of labour support tool and survey. The research setting, population, sampling technique, data collection, data analysis, validity and reliability to address the research questions and meet the overall purpose of the study are discussed.
3	Scoping review	Establishes the current state of labour support practice and its measurement from critical review of existing publication outputs conducted worldwide as a first step to developing a suitable tool for use in the Rwandan context.
4	Development of labour support questionnaire	Develops a labour support questionnaire that fits the Rwandan context for both women and nurses and midwives.
5	Survey	Explores and describes the views of nurses and midwives about the importance of the labour support practices they provide to labouring women at public health facilities. Explores and describes the views of mothers about the importance of labour support practices they receive from nurses and midwives at public health facilities.

Chapter		Objective
6	Open ended questions	Presents the findings and analyses the answers to the open-ended question about factors influencing supportive care.
7	Summary of findings, limitations, conclusion and recommendations	Presents a synthesis of the key findings of the study, makes recommendations and provides concluding remarks.

1.9 CONCLUSION

This first chapter presented the background of labour support practices and the significance of the study. The problem statement, research question and objectives of the study were posed, and the conceptual definitions and organisation of the thesis were provided. Chapter Two presents the methodology used for the study.

CHAPTER 2 : METHODOLOGY

2 1 INTRODUCTION

This chapter presents the research design and methods used for the three phases of this study: the scoping review, tool development and the survey. These methods were used to answer the research question, "What importance do mothers and nurses and midwives ascribe to labour support practices at public health facilities in Rwanda?" The research setting, population, sampling technique, data collection, data analysis, validity and reliability are also described.

2.2 RESEARCH DESIGN

The term 'research design' is defined as a structured framework for action that guides the research process in order to answer the research question of the study. The type of research design guides the researcher with relation to the selection of the population, sampling procedure and plans for data collection to achieve the intended research goal of the study (Polit and Beck, 2010). This study followed a descriptive, quantitative and cross-sectional design using a survey to observe and analyse the situation of labour support practices among nurses, midwives and women. The reason for choosing this method was the need to collect objective and accurate data from a large sample as the tool being developed from the study is to be used as a research tool for survey data collection in future. However, a small section of qualitative data, using an open-ended question, was included to provide some in-depth understanding of the data.

This study was carried out in three phases (see Table 2.1). Phase one included a scoping review, which explored the provision and measurement of labour support practice. Phase two consisted of the development of a labour support questionnaire. Phase three consisted of a survey, using the tool developed in phase two, to explore and describe the views of women in post-natal wards, nurses and midwives about the importance of labour support practices.

2.3 QUANTITATIVE APPROACH

A quantitative research approach puts emphasis on quantification and objectivity of phenomena. According to Plichta and Kelvin (2013) a quantitative research design can

generate a body of knowledge for a discipline under exploration using numerical information. The same authors continue to argue that a quantitative research approach uses research tools to collect data expressed in numbers that can be statistically summarized and analysed to formulate conclusions. Similarly, Khalid et al. (2012) argue that quantitative designs yield statistical observations that show the picture of phenomena for further management.

This study measures the importance of labour support practice from the perspectives of both health care providers and clients. The researcher used the survey phase to generate baseline information about the status of labour support provision at public health facilities in Rwanda. In his book on the practice of social research, Babbie (2010) asserts that the quantitative researcher can begin by advancing information on how variables of the study are related, and then formulate them in terms of research questions followed by data collection and statistical statements that can explain the situation under the investigation. This study provides the basis for further interventions relating to labour support practices at public health facilities.

2.4. CROSS-SECTIONAL SURVEY

The term "cross-sectional study" refers to an observational study that examines collected data of some variables from a representative subset at a particular point. In a cross-sectional study, a researcher observes the outcome and exposure simultaneously in the study population, without any alteration of exposure status. Usually the researcher makes the selection of study participants based on established inclusion and exclusion criteria (Polit and Beck, 2010).

A cross-sectional study can be used for descriptive or analytical purposes with the intention to identify trends and a general picture of phenomena. The strengths of a cross-sectional study include being an easy and faster way of collecting a large amount of data, and is therefore less time consuming; having multipurpose uses and is more cost effective; making results more readily available and manageable with precise procedures that yield objective and valid data (Polit and Beck, 2012).

Cross-sectional designs also have disadvantages and limitations around the lack of follow-up of investigated participants due to anonymous participation in study. Cross-sectional studies do not involve a dimension of time, hence they cannot establish causal relationships nor make

conclusions on the risks of diseases, which require enough time to make a follow-up between exposure and end results (Setia, 2016, Tapia et al., 2015).

2.5 RESEARCH SETTING

The research setting is the environment where a study is carried out. It can be a natural or controlled environment (Polit and Beck, 2010). This study was contextual in nature as it was carried out in selected public health facilities situated in Kigali city in Rwanda.

The country of Rwanda has a surface area of 26,338 km^2, with a high population density (512 per km^2) and a population estimated at 12.63 million in 2019. Rwanda is located in Central Africa, commonly known as the Great Lakes Region. It has the area of Kigali City and four other provinces North, East, South and West. All provinces are divided into 30 administrative districts. Kinyarwanda is the first official language followed by French and English (Rwanda Health Department, 2016, National Institute of Statistics of Rwanda, 2018). In Rwanda, the public health sector has a pyramidal structure that includes health posts at the bottom, followed by health centres, District hospital and at the top there are referral hospitals (Nathan et al., 2015).

Kigali city was chosen purposively as the setting of this study, by the researcher, to represent one referral/academic hospital and four district Hospitals. In purposive sampling, the researcher selects participants or sites that can best allow the researcher to get a better understanding of phenomena or research question (Creswell, 2014). The Demographic and Health Survey (DHS) conducted in Rwanda through the Rwandan Health Department indicated that a large number of women gave birth at public health facilities located in Kigali City. In addition, these health facilities have a high number of nurses and midwives working in labour and delivery wards compared to other health facilities across the country (National Institute of Statistics of Rwanda, 2015). All four public district hospitals and one referral/academic hospital of Kigali were included in this study to obtain representativeness of women who experienced the labour and delivery process with assistance of nurses and midwives at hospital level.

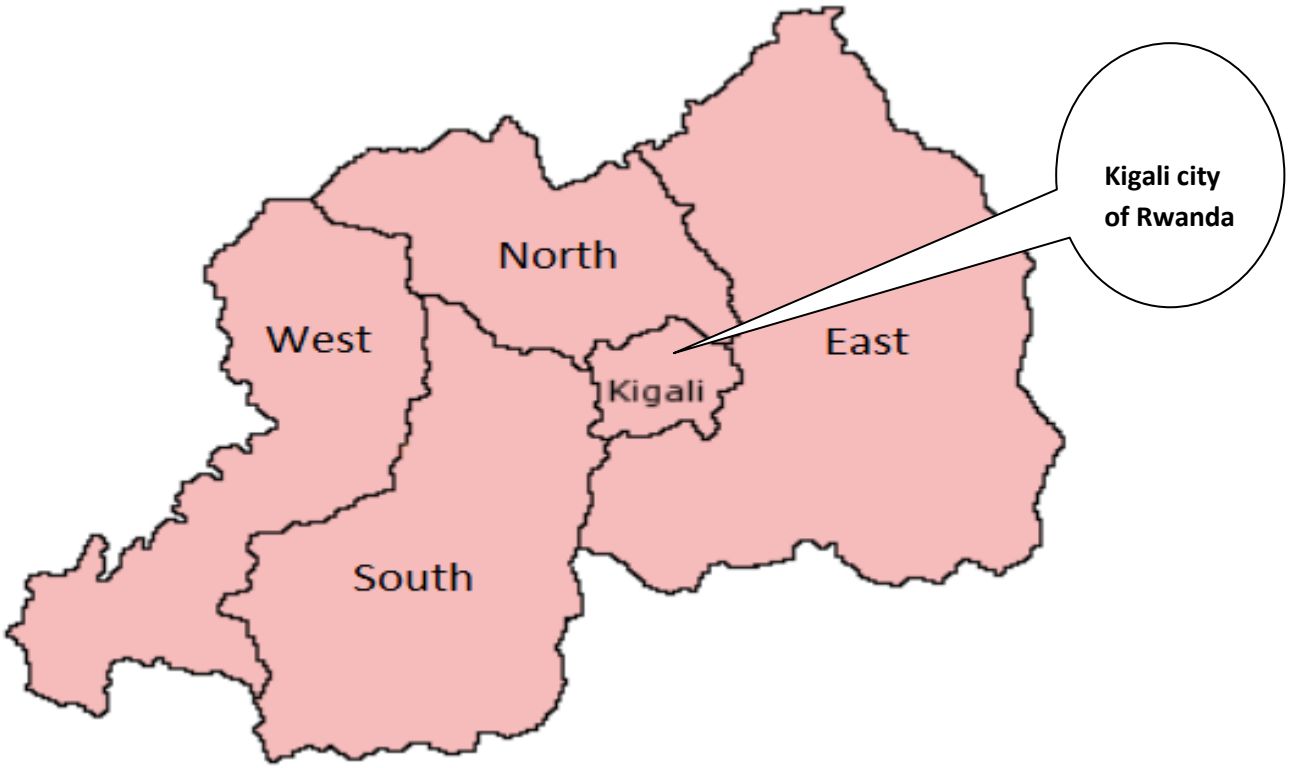


Figure 2.1: Map of Rwanda

Source: Ministry of local government

http://www.clgf.org.uk/default/assets/File/Country_profiles/Rwanda

2.6 RESEARCH PHASES

The study was conducted in three phases. Details about population and sample used for all phases are described under each phase. A summary of methods used for each phase is presented in Table 2.1 below. The discussion of methodology relating each phase follows in the subsequent paragraph.

Table 2.1: Road map of research process

PHASES	OBJECTIVES	RESEARCH ACTIVITY	POPULATION AND SAMPLE	DATA COLLECTION METHOD	DATA ANALYSIS
PHASE 1: Scoping review	1. To establish international best practice with regard to labour support provision and measurement of labour support	A scoping review was conducted on Labour support practices and midwives and measurement of labour support practices, using the stages developed by Arksey and O'Malley (2005)	Worldwide peer reviewed and grey literature on labour support practices and its measurement	Author and date, aim, setting, research design and key findings were charted from the studies presented onto a data matrix as indicated by Arksey and O'Malley (2005)	Thematic analysis was used for data searched
PHASE 2: Development of labour support questionnaire	2. To develop and validate a labour support questionnaire for Rwanda	Development of a labour support questionnaire was performed using items generated from four themes, which were drawn from the labour support framework of the Royal College of Midwives (The Royal College of Midwives, 2012)	A panel of experts viz 5 midwives and 3 nurses, practitioners and educators and one expert in tool development	Results of items for labour support questionnaire generated from phase one of scoping review	Validity was tested through content validity index (CVI) Reliability with Pilot study and Cronbach's Alpha test AMOS to conduct Exploratory Factor Analysis (EFA) and Confirmatory factor analysis (CFA)

PHASES	OBJECTIVES	RESEARCH ACTIVITY	POPULATION AND SAMPLE	DATA COLLECTION METHOD	DATA ANALYSIS
PHASE 3: Survey	3. To explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities in Rwanda 4. To explore and describe the views of women about the labour support they receive from nurses and midwives at public health facilities in Rwanda	Cross-sectional and descriptive design	Convenience sample of midwives and nurses with at least one year of experience working in labour and delivery wards. Convenience sample of women who experienced normal vaginal delivery in postnatal ward	Self-administered labour support questionnaires developed and validated. It has 3 sections: I: Demographic characteristics II: 4-point Likert-type scale statements about importance of labour support practice. III. Open ended questions about factors that may influence labour support practice	Statistical analysis with SPSS 25 to run descriptive and inferential analysis Summative content analysis according to Hsieh & Shannon (2005)

2.7 PHASE ONE: SCOPING REVIEW OF LABOUR SUPPORT PRACTICES AND ITS MEASUREMENT

2.7.1 Introduction

In this phase, the researcher conducted a scoping review to describe the practice of labour support and its measurement from publication outputs conducted worldwide, with the purpose of developing a labour support questionnaire suitable for use in Rwanda, and hence establish the current status of labour support practice in Rwanda. A scoping review was conducted and guided by the framework developed by Arksey and O'Malley (2005). The framework includes five stages, namely: identifying the research question, finding relevant studies, study selection, charting the data, and collating, summarizing and reporting the results. The review provides a quick map and picture of the evidence available in the research area. This method for scoping review focuses on complex and broad topic areas that lack comprehensive reviews. A scoping review searches for all original articles published within the specific field, without paying attention to the research design or quality of the studies included in review. However, a decision was taken to include some reviews in the scoping review as the reviews enriched the data and covered articles that did not appear in the original search.

2.7.2 Objective

1) To explore international best practices in terms of labour support provision including women, nurses and midwives' views about labour support received during labour and delivery.

2) To identify existing instruments for the measurement of labour support practices.

2.7.3 Population

The literature review was conducted using a computerized search of databases and a hand search of key institutional sites and documents. Table 3.2. in Chapter 3 presents the articles that were included in the study.

2.7.4 Sampling and inclusion criteria

The sample was drawn, using a computerised search, from electronic data bases including CINAHL (hosted within EBSCO host), PubMed, and PROQUEST. Studies were included if they were written in the English language and were published between January 2009 and March 2018 in peer reviewed journals or grey literature, and if the full text was available.

2.7.5 Data collection

Data from articles included in this review was charted on a data matrix, including sections on labour support practice and measurement of labour support practice. The information charted was relating to author, year of publication, aim of the study, population, research design and key findings about labour support practice (Table: 3.2).

2.7.6 Data analysis

Data analysis provides a comprehensive interpretation relating to synthesized information from charted articles (Whittemore and Knafl, 2005). Data extracted and displayed in the data matrix were analysed thematically. For this study, data was reduced into subgroups including geographical distribution, year of publication, journal of publication, collaboration in publication, focus of publication and research approach used. In addition, data was classified in two sections - labour support practice and measurement - for easy visualization of similarities, relationships, limitations and themes.

The findings of this study were summarized into four themes relating to labour support practices including: emotional support, informational support, physical support and advocacy as per the framework of the Royal College of Midwives (2012).

2.7.7 Results and outcomes

Synthesizing and interpreting charted information from articles included in the review contributed to meaningful outcomes and allowed for conclusions to be drawn about the results of studies included in the review. Findings from this scoping review indicated a gap in evidence relating to labour support practices in developing countries and a lack of a standardized tool to measure labour support practices. The findings were also used to generate items for the labour support questionnaires for both women and nurses and midwives in the context of Rwanda.

2.8 PHASE TWO: DEVELOPMENT OF A LABOUR SUPPORT QUESTIONNAIRE

2.8.1 Introduction

The lack of an existing tool to measure the intended construct of labour support practice in developing countries was indicated from the scoping review conducted in the first phase of this study. To date no study has been found, with tested instrument, to measure the importance of labour support practice in the context of Rwanda. In order to respond appropriately to the research question, a labour support questionnaire was developed, piloted and tested by the researcher. This phase consisted of four sections relating to the instrument development, namely generating items, content validity, reliability testing and construct validity.

2.8.2 Objective

To develop and validate a labour support questionnaire for Rwanda.

2.8.3 Process for tool development

2.8.3.1 Generating items

The generation of items for a labour support questionnaire was informed by the scoping review conducted in the previous phase. As stated by Vermeulen et al. (2018), a literature review can serve as a source to provide guidance for item generation of a research instrument, by focusing on the intended domain to be measured.

Although there is a gap in studies conducted in developing countries about labour support, those found in developed countries indicated a framework of labour support practices (The Royal College of Midwives, 2012). The identified framework indicated four themes including emotional support, physical support, advocacy, information and advice that informed the pool of items used to design statements relating to labour support practices.

The researcher proposed a format for the questionnaire that includes three sections: section one related to demographic characteristics, section two contains statements about the importance of labour support practice with a Likert-type scale to measure the level of participants' agreement, and the last section contained one open-ended question about the views of participants on factors influencing the provision of labour support practice. This last

question was informed by the studies reviewed, and explored the perceived factors influencing the provision of labour support for both providers and labouring women (Thorstensson et al., 2012, Barrett and Stark, 2010, Baas et al., 2015b). The section with the open-ended question was added to allow for more insights about labour support practice in the Rwandan context.

2.8.3.2 Content validity

According to Shrotryia and Dhanda (2015), all generated items need to be checked for clarity and relevance, by a panel of experts, to ensure that all items of the questionnaire measure the target construct. Quantification and content validity involved the judgement of each item generated by a team of selected experts (Table.4.1).

The assessment of items by experts was quantified (Table: 4.3) by computing the Item Content Validity Index (I-CVI) and overall Scale of Content Validity Index (S-CVI). To evaluate the content validity, the recommended I-CVI is over 0.75 while a minimum recommended for S-CVI is 0.80. For this study, the results were I-CVI = 0.88 and S-CVI = 0.98. This reflected high content validity of the designed tool.

2.8.3.3 Reliability testing

Polit and Beck (2012) indicate that a pilot test for a research instrument refers to a preliminary analysis of data collected to test its reliability. The same authors argue that the preliminary testing of a research instrument involves simulation of the planned data collection process to a small portion of the target population to identify problematic issues relating to the research tool. An advantage of preliminary testing is to allow the researcher to determine areas of weaknesses in the research tool and to revise its feasibility and word ambiguity.

A pilot test for this study was conducted the first week of October 2018 on a sample of thirty women in postnatal wards and ten nurses and midwives at a public hospital included in the study. The pilot exercise was conducted with the purpose of checking if the developed labour support questionnaire had consistency and that it measured what it was intended to measure. During pilot testing, participants completed the questionnaires without difficulty. However, small amendments were recommended by the participants regarding formatting of the questionnaire and rewording of statements about labour support practices. The researcher

made the amendments proposed by participants before distributing the questionnaires for the survey.

2.8.3.4 Construct validity

Construct validity refers to the determination on how well the items of a research instrument measure the intended construct they purport to measure. Construct validity illustrates how items relate to measure the intended construct (Plitchta and Kelvin, 2013). This study engaged in the process of Exploratory Factor Analysis and Confirmatory Factor Analysis to ensure construct validity of the labour support questionnaire for both women and midwives and nurses following guidance provided by Field (2009).

A statistical data reduction was done, using the Statistical Package for Social Sciences (SPSS) version 25 software. Chapter Four discusses how an Exploratory Factor Analysis (EFA) was run, with the option of Principal Component Analysis (PCA), to group together a set of items that are intercorrelated under the same factor. Relationships among items were determined through EFA, which was performed to establish a set of questionnaire items that can measure the same underlying factor, and also that these items can be combined to form an accurate measure for that factor.

The suitability of this study for EFA was checked using the Kaiser-Meyer-Olkin (KMO) and Bartlett Test to support the factorability analysis. As noted in Carquillat et al. (2017) the KMO is a measure of sampling adequacy that ranges from 0 to 1, and the closer it is to 1 the better the prospects for PCA. The Bartlett Test of sphericity measures the strength of the bivariate relationship between items under investigation. Its significance has to be less than 0.05. For this study, the results obtained for KMO (0.828) and Bartlett Test (0.000) were considered suitable for PCA.

A factor matrix indicating the relationships between items was generated from the EFA and factor loading was indicated (Table 4.6). Following Field (2009), normally for an item to be considered as part of a factor it should load in that factor with the weight of at least 0.40. The loading is understood as the weight with which an item correlates with other items under the same factor.

Extraction of factor loading was undertaken to check the number of items that belonged to each factor. Items were retained if they had factor loading of 0.40 or above during the process

of analysis to determine the suitability of the data from the study, and is in line with the framework reviewed in literature (Boateng et al., 2018). If an item has a loading lower than 0.40, it does not fit in any of the factors and should be removed from the analysis. The item belongs under the factor where it has the greatest weight.

Eigen values represent the total number of variances explained. They were calculated and considered to determine the number of factors to be extracted. Only factors with Eigen values higher than 1 were taken as significant (Plichta and Kelvin, 2013). For this study, the scree plot was examined, and it indicated clearly four (4) factors that account for 51.05 % of the total variance explained. This number was acceptable, because the factor needs to explain about 40% of the variance. The factors retained were professional support, communication support, comfort support and emotional support.

EFA involved the step of factor rotation for better understanding of underlying factors. Factor rotation provides a clear picture of variables that correlate with one factor (Plichta and Kelvin, 2013). This study used a Varimax rotation to get an easy interpretation and more reliable factor structures (Table 4.7). The identification of factors was based on the questionnaire items loaded under the factor, and the review informed the grouping of items under the same factor.

Confirmatory Factor Analysis (CFA) was performed to specify and confirm variables that load under identified factors, using AMOS software version 25 to show the indices and threshold for model fit. The CFA was done for the sake of establishing the goodness-of-fit with the data. This study used the model fit provided by Hu and Bentler (1999), as discussed in Chapter Four. The model fit used was based on measures that include the Goodness-of-Fit Index (GFI), which indicates that good GFI should be 0.90 or above, the Comparative Fit Index (CFI), which states that a good CFI should be 0.95 and above, and the Root Mean Square Error of Approximation (RMSEA), which indicates that a good fit should be 0.5 or less.

The results of this study indicated that the confirmed structure and model for nurses and midwives has a Goodness-of-Fit Index (GFI) of 0.82, which is moderate, a Comparative-Fit-Index (CFI) of 0.90, which is acceptable, and a Root Mean Square Error of Approximation (RMSEA) of 0.06, which is moderate too. The overall fit of the model was considered adequate (Table 4.9 and Figure 4.2). On the other hand, the confirmed structure for mothers

indicated three factors (Table 4.15 and Figure 4.3), which were submitted to CFA and a goodness-of-fit was achieved with GFI = 0.90, CFI= 0.94, PCLOSE = 0.000 and RMSEA = 0.06. The overall measures of goodness-of-fit were, in general, considered acceptable.

2.9 PHASE THREE: SURVEY

2.9.1 Introduction

A survey was conducted among mothers in postnatal wards and nurses and midwives working in labour and delivery wards to explore and describe their views about labour support practices at selected public health facilities located in Kigali City. The population sample, data collection and data analysis procedures are detailed in the following paragraphs.

2.9.2 Objectives

- To explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities in Rwanda.
- To explore and describe the views of mothers about the importance of labour support they receive from nurses and midwives at public health facilities in Rwanda

2.9.3 Population

The term "population" refers to an entire group of people with common characteristics that are the interest of a researcher (Polit and Beck, 2010). The target population for this study was composed of women in postnatal ward and nurses and midwives working in labour and delivery wards at public health facilities.

2.9.4 Sampling criteria

Most of the time the entire population is too large to select participants for the study, so it is necessary to select participants known as a sample. According to Burns and Grove (2009), a sample is a portion of individuals selected from a target population to represent the population in the study. This study used a convenience sampling method to select all mothers, nurses and midwives who met the sampling criteria and who were available at the time of data collection to participate in the study.

The inclusion criteria refer to predetermined characteristics that are essential for eligibility to be part of the sample (Burns and Grove, 2009). The inclusion criteria were registered nurses and midwives, working in labour and delivery wards with experience of at least one year. On the other hand, the inclusion criteria for mothers were mothers who were at least 18 years old and who had experienced a vaginal delivery, and who were available when the researcher was collecting data for the study. Participants who took part in the pilot study were excluded and did not participate in the survey.

2.9.5 Sample size

Based on the purpose to achieve an optimal representative sample, the total population of 190 nurses and midwives located in the selected health facilities and 778 mothers in postnatal wards were invited to participate in the study. This also assisted to meet the requirements of data analysis, using a confirmatory factor analysis, where a sample size should not be below a hundred participants (Field, 2009, Ghanbari-Homayi et al., 2019). Therefore, a total sample size of 154 nurses and midwives and 648 mothers completed and returned questionnaire in this study.

2.9.6 Data collection

Data collection is the process of gathering information from key participants to answer the research question (Plichta and Kelvin, 2013). After the pilot exercise, data collection for this study was conducted for a period of four weeks in November 2018, to cover nurses' and midwives' shifts and reach all eligible mothers in postnatal wards from five selected public hospitals located in Kigali City.

Before data collection, the researcher obtained ethics clearances from both the University of the Witwatersrand and from the University of Rwanda (See appendix D&E). To gain access to the participants, official permission was sought and obtained from each of the concerned hospitals. All participants in the study signed consent forms.

The survey questionnaires were distributed and collected by the researcher, assisted by five nurses and midwives who acted as research assistants. Before starting the data collection, the researcher had a meeting with the research assistants to provide a detailed presentation and explanations about the research tool that was designed to achieve the objectives of the study. This helped the research assistants to get an understanding of the research tool and to improve the quality of data to be collected. The labour support questionnaires were

distributed to all target mothers in postnatal wards, and nurses and midwives working in labour and delivery wards. Only participants who were willing to participate and complete the survey questionnaires during the period of data collection received questionnaires and were requested to submit the completed questionnaires in a box located in a corner indicated to them.

The labour support questionnaire included three sections (see appendix A). The first section covered demographic characteristics (age, marital status, level of education, professional qualification, area of residence, type of health facility, years of experience in labour ward, experience with labour). The second section contained statements about the importance of labour support practice, with four Likert-type scale responses ranging from ‘not important’ to ‘very important’ on the mothers’ questionnaires and ‘strongly disagree’ to ‘strongly agree’ to measure the level of nurses’ and midwives' agreement with regard to labour support statements. The last section comprised one open-ended question about views of participants on factors influencing provision of labour support practice. The researcher considered it important to get opinions of mothers and nurses and midwives in order to have more understanding on the matter of labour support practices.

2.9.7 Data analysis

Quantitative data analysis is the process relating to systematically using statistical techniques to illustrate and analyse data and suggest conclusions (Plichta and Kelvin, 2013). With the assistance of a statistician, the researcher analysed and interpreted the quantitative data gathered from the survey. This study used descriptive and inferential statistics to analyse data.

Once questionnaires were completed and collected, the survey data was coded and entered the Statistical Package for Social Sciences (SPSS software) version 25. Questionnaires were screened for accuracy and incomplete ones were not considered for data analysis. The response rate for nurses and midwives was 81%, while 83%. was the response rate for mothers.

Descriptive analysis was performed to summarize data about sample characteristics, using frequency for each item of demographic characteristics. Comparison was done to analyse demographic characteristics with labour support scales. Descriptive statistics serve as the

starting step of quantitative analysis that allows the researcher to establish the general picture of phenomena from various patterns of gathered data (Polit and Beck, 2010).

Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) was conducted to determine the Construct Validity of instrument structure. Data collected from open ended questions were analysed, using a latent content analysis that was conducted to identify categories and subcategories that emerge from the answers of participants, to develop meaning about the particular topic under study (Hsieh and Shannon, 2005). Using this approach of latent content analysis, the researcher read through participant's answers with assistance of the promoter, then repeated the process and the same statements were colour coded and topics that related to them were grouped together in order to reduce the list of categories. Two categories emerged, with three sub-categories each (Table 6.1 and Table 6.2), relating to factors influencing labour support practices that were previously highlighted by the findings of the scoping review.

2.10 RELIABILITY AND VALIDITY

Establishing the reliability and validity procedures of the instrument used in a study is important to determine the quality of measurement that took place during the scientific research process. The reliability of a research instrument refers to the extent to which an instrument consistently provides the same information when used on repeated measures for the same people under the same circumstances (Polit and Beck, 2003).

In this study, the reliability of the labour support questionnaires for both mothers and nurses and midwives was determined by conducting a pilot study, and by using the most popular method to measure internal consistency, which is based to the coefficient alpha commonly referred to Cronbach's Alpha. The reliability results obtained for mothers' questionnaire was 0.95 while Cronbach's Alpha for the nurses' and midwives' questionnaire was 0.89. Both results indicated a high level of reliability as they were above the standard of 0.60 (Polit and Beck, 2003). The closer the reliability score is to 1, the better is the level of reliability. Both questionnaires were found to be valid and reliable.

Validity and reliability of an instrument go hand in hand. The validity refers to the degree to which items of the instrument measure the construct that they are intended to measure (Polit

and Beck, 2010). Validity ensures that the items of the instrument are sufficiently good to measure the concerned construct. To meet this criterion of validity, this study first established the content validity to test if items of the instrument were fairly representative of the expected construct. Secondly, Exploratory Factory Analysis (EFA) was performed to make a classification of items under corresponding factors. Finally, Confirmatory Factor Analysis was performed, using AMOS software, to confirm created factors through the model fit based on the Goodness-of-Fit Index.

2.11 TRUSTWORTHINESS

Trustworthiness serves to ensure the rigour of qualitative data. A small portion of this study used an open-ended question, which was handled qualitatively. According to Lincoln and Guba (1985) cited in Shenton (2004), trustworthiness for the qualitative part should be applied through credibility, transferability, dependability and confirmability to produce truthful research data (Shenton, 2004).

Credibility should be determined through prolonged engagement in the field, peer debriefing, persistent observations and a triangulation exercise. Credibility establishes that data from the study are valid and believable for the reader. Hence people will have confidence in the truth of the data. It addresses the issue relating to the consistency between participants' views and the researcher's interpretation of them.

This study engaged in regular meetings and discussions between the researcher and an experienced supervisor and data appraisal and debriefing were conducted to identify any biases and preferences. A team of experts was used to review the items generated from the scoping review. A convenient sampling method was used. In addition, triangulation was used from different sources of data collection, including the scoping review and survey, to get a better understanding of labour support practice from the perspectives of both mothers and nurses and midwives.

Transferability refers to whether or not the findings can be applied in other contexts and to other subjects outside the study situation. In this study, the research methods were described in detail and the researcher's promoters had access to all research materials. A tool used to

collect data in the context of this study was validated and that tool can be applied in other settings with similar sources.

Dependability relates to the consistency and stability of findings over time. It shows if another researcher followed the same process of inquiry to repeat the study in the same situation, with the same methods and with the same participants, similar results would be obtained. To meet the criteria of dependability, the researcher provided a detailed description of the methodology used to conduct this study, a rationale for the study, a description of the sample, and the process of data collection and data analysis were explained. All data, findings, discussions and interpretations were documented and were made accessible to the research promoters for observations and comments.

Confirmability requires the researcher to demonstrate the degree to which the findings could be corroborated by others and shows clearly how findings are derived from the data. The triangulation of data from the various phases of study ensured the confirmability. In this study, confirmability was done through careful documentation and checking of data gathered from all study phases, and through accurate transcription of the opinions expressed by participants.

2.12 ETHICAL CONSIDERATIONS

Ethical principles were taken into consideration before undertaking this study. Attention was paid to the participants' rights that included consent, beneficence, justice, anonymity and confidentiality (Polit and Beck, 2012).

Consent to participate in the study

All participants who participated in the pilot study and survey were provided with a copy of the information sheet (see appendix F&G) to ensure that all involved participants had sufficient explanation about the study. An informed consent was sought from each participant before completing and returning a survey questionnaire (See appendix H&I). Permission to conduct the study was obtained from the Institutional Review Board of the University of Rwanda, the Ethics Committee of Witwatersrand University and from each hospital where data were collected (See appendix D&E).

Beneficence

Beneficence supports the autonomy of participants to make their own decisions relating to the research process. For this study, the beneficence was maintained by keeping participants informed about voluntary participation in the study; there was no penalty, coercion or covert data collection mechanism used in the study. The right of beneficence in this study was also ensured through protection of all participants from any harm or exploitation by maintaining confidentiality so their views were not known by those caring for them.

Justice

The right to fair treatment is linked to the ethical principle of justice, allowing all postnatal women, nurses and midwives who met the study criteria at selected study sites to have a chance to participate in the study without any discrimination relating to race, ethnicity or social condition. With respect to this, the researcher conducted the data collection with a fair distribution of the survey instruments with respect to participants' right to participate freely in the study.

Anonymity and confidentiality

Participants were assured that their data would not be identifiable, using codes to protect their individual identities. The principle of confidentiality involves all strategies to protect the participants' identifications and to ensure that the information is not obtained illegally. The privacy of participants was protected throughout data management. Completed questionnaires were separated from the signed consent forms before the data capturing and analysis process. Access to data was restricted to the researcher, the statistician and the researcher's supervisors by using computer password protected data. The reporting of data was done anonymously. Completed questionnaires and consent forms have been stored securely in a locked cupboard and will remain there for two years after publication. Should publications not ensue from this research, the data will be kept for six years after completion of the study and destroyed thereafter.

2.13 CONCLUSION

This chapter provides an overview of the methodology used in this study. This includes a description of the research design, the research settings and detailed methods used for each of the three phases of this study. The scoping review is presented in the next chapter.

CHAPTER 3 : SCOPING REVIEW OF LABOUR SUPPORT PRACTICES BY NURSES AND MIDWIVES AND ITS MEASUREMENT

3.1. INTRODUCTION

In this chapter, the findings of a scoping review done to meet objective one of establishing international best practices with regards to labour support practices and measurement of labour support practices is described. In order to aid understanding, the methods used are described in more detail in this chapter than was done in Chapter Two, which described the research methods.

3.2. PURPOSE OF THE SCOPING REVIEW

The purpose of this scoping review was to describe the state of labour support practices and its measurement from publication outputs conducted worldwide in the past 10 years as a first step to developing a tool suitable for use in Rwanda.

3.3 REVIEW QUESTION

The research questions explored in the review were "What is international best practice with regard to labour support provision" and "how is labour support measured internationally? "

3.4. SEARCH STRATEGY AND INCLUSION CRITERIA

A scoping review was conducted and guided by the framework developed by Arksey and O'Malley (2005). A scoping review searches for all research conducted within the specific field without paying attention to the research design or quality of the studies included (Arksey and O'Malley, 2005). To find relevant studies a computerized search was implemented from electronic data bases including CINAHL (hosted within EBSCO host), PubMed, and PROQUEST, using a combination of key words: labour support, midwifery care, midwifery practice, provision of care, factors, barriers, instruments, tools, and women's views. Studies were included if they met the criteria of this study and if they were written in

the English language and were published between January 2009 and March 2018 in peer reviewed journals.

Titles and abstracts were screened and selected through the use of the key search terms. the present study has. A total of 29 articles were selected. In addition, three articles from a hand search were deemed relevant for the review. The results of the search process are presented in Figure 3.1.

A PRISMA diagram for search process and inclusion

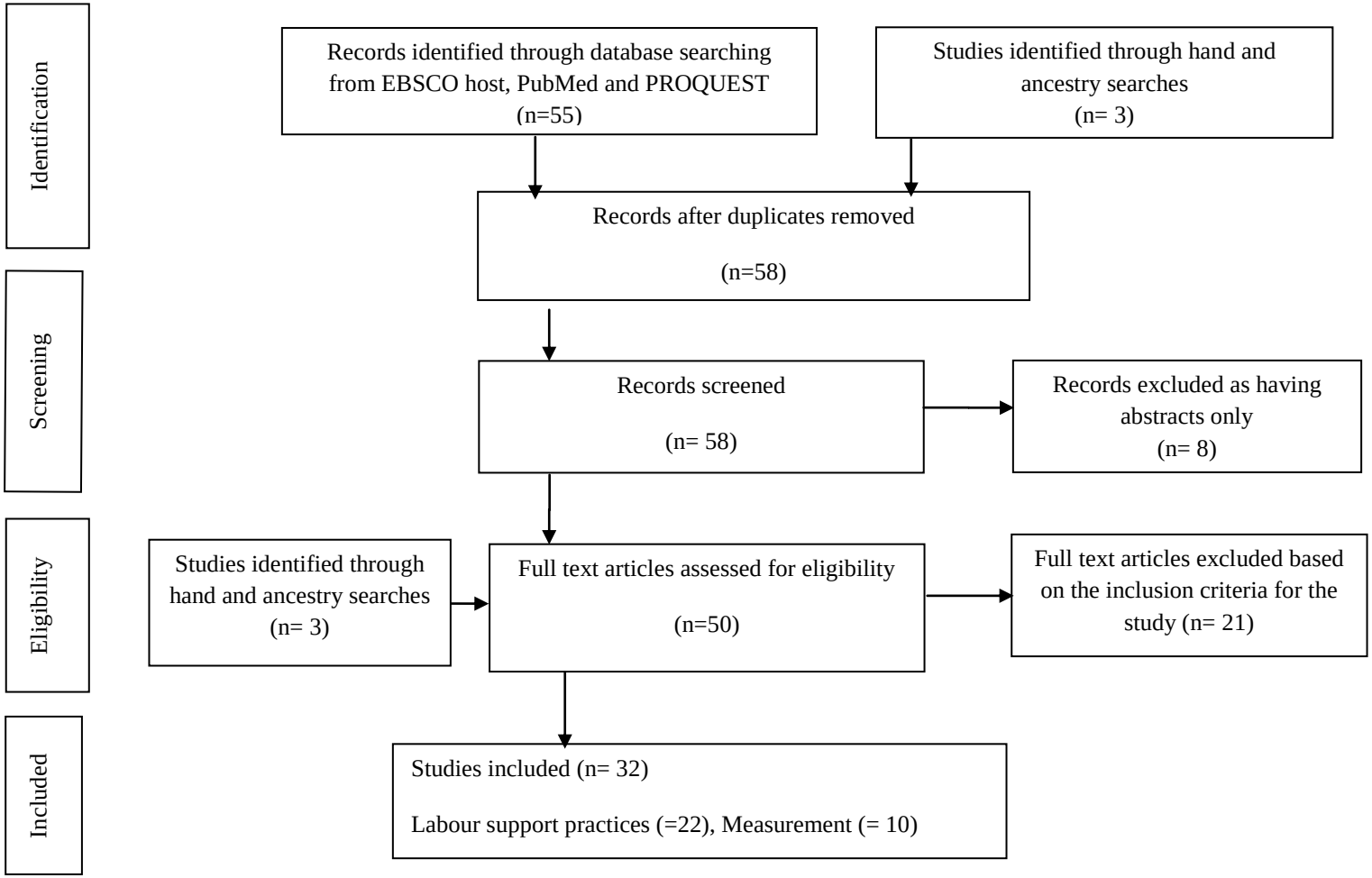


Figure 3.1: Search process and inclusion

Table 3.1: Charting the data

Databases	Key words combined	Number Articles after inclusion worldwide	Number of articles read	Number of articles included worldwide
CINAHL	Labour support	20	6	1
	Labour support AND provision of care	7	0	0
	Labour support AND midwifery care	0	4	0
	Labour support AND barriers	30	6	2
	Labour support AND factors	30	2	1
	Labour support AND women's views	95	6	4
	Labour support AND midwifery practice	11	6	3
	Labour support AND midwifery practice AND instrument	7	3	3
	Labour support AND tool AND techniques	60	1	0
Sub Total		**260**	**34**	**14**
PROQUEST	Labour support	0	0	0
	Labour support AND provision of care	46	1	1
	Labour support AND midwifery care	29	2	1
	Labour support AND barriers	0	1	1
	Labour support AND factors	163	2	1
	Labour support AND women's views	0	2	1
	Labour support AND midwifery practice	0	2	0
	Labour support AND midwifery practice AND instrument	0	1	1
	Labour support AND tool AND techniques	62	0	0
Sub Total		**300**	**11**	**6**

Databases	Key words combined	Number Articles after inclusion worldwide	Number of articles read	Number of articles included worldwide
PUBMED	Labour support	2	1	0
	Labour support AND provision of care	0	0	1
	Labour support AND midwifery care	0	0	0
	Labour support AND barriers	0	1	1
	Labour support AND factors	0	0	0
	Labour support AND women's views	0	0	1
	Labour support AND midwifery practice	0	0	0
	Labour support AND midwifery practice AND instrument	27	8	6
	Labour support AND tool AND techniques	0	0	0
Sub Total		**29**	**10**	**9**
Sum Total		**589**	**55**	**29**

Table 3.2: Data Matrix of identified articles for labour support practices

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
1	Hunter, L.P (2009). A Descriptive Study of "Being with Woman" during labour and birth. *Journal of Midwifery & Women's Health,* 54(2):112-118	To learn more about women's perceptions of the nurse-midwifery practice of being with woman during childbirth.	n =238 postpartum women **USA**	Descriptive correlational design Positive Presence Index (PPI) including 29-questions in format of 7 response Likert-type scale was used to collect data Findings indicate that breathing techniques and music therapy can be considered helpful adjunct in midwifery care	Two coping/comfort techniques, music therapy and breathing have been found to be an effective intervention in enhancing coping, decreasing pain sensations, and reducing stress in labour. In addition, music therapy helps to promote relaxation during labour, physical support, spiritual support and emotional support
2	Ford, Ayers and Wright (2009). Measurement of Maternal perceptions of Support and control in Birth (SCIB) *Journal of Women's Health,* 18(2):245-252	To develop and validate a questionnaire that measures the support and control in birth for use in research on birth experience and outcomes	n =10 women, taken 1–7 days after birth **London**	An exploratory qualitative study Semi structured interview Perceived Support and control in Birth (SCIB) scale includes: - 33 items loaded in three dimensions: - Internal control (10 items) that involves mother's behaviour during labour - External factors (11 items): referring to environment procedures, decisions and information about women - Support from healthcare professionals (12 items)	Women reported dimensions about control and support during birth. Professional support consists of the following elements: - Coaching and coping techniques - Empathy - Understanding - Reassurance - Encouragement - Listening - Coping techniques - Providing information

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
3	Lundgren, I. (2010). Swedish women's experiences of doula support during childbirth. *Midwifery* 26, 173–180	To describe women's experiences of doula support during childbirth	n = 9 women **Sweden**	A qualitative study using interviews The role of the doula lies between natural care and professional care. The doula is a coach who mediates a belief in the woman's capacity to give birth	Women indicated the role of the doula such as - Being a mediator to the unknown by convincing women of their capacity to give birth - Helping mothers to cope with labour pain through continuous presence, massage, breathing techniques, movement, and responding to the women's needs (food and drink) - Communicating the women's' requests to the relevant levels
4	Barrett and Stark (2010). Factors associated with labour support behaviours of Nurses. *The Journal of Perinatal Education,* 19(1):12–18	To examine factors associated with labour support behaviours of nurses who provide labour and birth care	n = 64 Intrapartum nurses **USA**	A secondary data analysis Online survey Labour Support Scale (LSS) including 28-items measuring factors associated with labour support behaviour of nurses was used for data collection Findings indicated the factors associated with the provision of LS: 1. Individual: age and experience of nurses' 2. Institutional factors: environment, culture, staffing and resources 3. Education (staff, women, partners) 4. Unnecessary interventions	The study indicated the categories of labour support namely: emotional support, physical support and advocacy. Factors affecting the labour support were reported
5	Kungwimba et al. (2013). Experiences of women with the support they received from their birth companions during labour and delivery in Malawi. *Health* 5(1):45-52	To describe the experience of primiparous women towards the support they received from their birth companions during their labour and delivery.	n = 20 women/ postnatal ward/ **Malawi**	A descriptive qualitative design using in depth interviews Results showed that some women were not properly assisted due to lack of knowledge The results also showed improvement of birth outcome for primiparous women	Women reported that they received - Advice - Physical support - Emotional support - Spiritual support from their birth companions during labour and delivery

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
6	Hodnett et al. (2012). Continuous support for women during childbirth. *The Cochrane Library* Issue 10, 1-117	To assess the effects of continuous intrapartum support and to determine the effects of continuous support	n = 22 trials involving 15288 women	Review The results from review indicated the benefits of Labour support care for women and infants: - A spontaneous vaginal birth - Less use of intrapartum analgesia - Less use of medical intervention - Satisfactory status for baby and mother	Labour support provision involves: - Emotional support - Comfort measures - Information - Advocacy
7	Daniel, B. (2013). An exploratory study to assess the expectations of mothers during labour from professional nurses in a selected hospital, Ludhiana. *International Journal of Nursing Care*, 1(2):12-16.	To assess the expectations of mothers during Labour from professional nurses	n = 100 mothers who were in first stage of labour **India**	An exploratory quantitative approach A structured questionnaire with two parts: 1. Socio demographic data 2. Expectations of mothers from professional nurses The study indicated that majority of mothers had high expectations from the professional nurses under the dimension of interpersonal communication style, provision of information and in physical comfort	Expectation of mothers about Labour Support were related: 1. Provision of information 2. Caring and emotional support 3. Advocacy 4. Physical comfort 5. Spiritual care 6. Competence of profession
8	Aune et al. (2014). Is a midwife's continuous presence during childbirth a matter of course? Midwives' experiences and thoughts about factors that may influence their continuous support of women during labour. *Midwifery 30*, 89–95	To gain an understanding about midwives' experiences of providing continuous support	n = 10 midwives **Norway**	A qualitative approach Structured interview The study indicated the factors that may influence the provision of LS such as: - The midwives' skill in building a relationship with woman - Workload - Time available to be with woman during labour	The results showed that the midwife's presence: - Increases mutual trust with the woman during labour

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
9	Dunne et al. (2014). Women's perceptions of social support during labour: Development, reliability and validity of the Birth Companion Support Questionnaire (BCSQ). *Midwifery 30*, 847–852	To develop and test the reliability and validity of a research instrument to measure women's perceptions of social support provided during labour	n = 293 women **Australia**	A cross-sectional study An exploratory factor analysis and component analysis were performed to evaluate validity and reliability of the BCSQ Tool developed includes 17 items in format of 4-point Likert-type scale BCSQ was found to be reliable and valid for women's perceptions of labour support provided	The validation process of the Birth Companion Support Questionnaire (BCSQ) suggested two subscales: - Emotional support which includes presence, listening, comfort through touch and respect -Tangible support refers to expression of needs, coping methods, distraction, help to follow given advice .
10	Ross-Davie &Cheyne (2014). Intrapartum support: what do women want? A literature review. *Evidence Based Midwifery,* 12(2): 52-58	To identify how far the nature of labour support shapes women's assessment of their birth experiences	n = 91 papers **UK**	Review The review indicated the association of Labour Support with: - Maternal satisfaction - Feelings of reassurance - Control of stressful events of labour	The review demonstrated the labour support behaviours including - Supportive presence - Sense of control - Provision of information - Physical support
11	Ross-Davie (2014). Understanding support in labour: the potential of systematic observation. *Evidence Based Midwifery,* 12(4):121-126	To explore the potential of the systematic observational research of labour support	n = 5 American observational studies of intrapartum support **USA**	Review of observational studies using an intrapartum observational schedule Review has potential to provide - Information about the quantity and quality of professional labour support - Establishment of statistical correlations between behaviours and outcomes of the interaction explored	Observational studies highlighted elements of supportive care including: - Emotional support - Physical support - Informational support - Advocacy

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
12	Walker et al. (2015). Childbirth experience questionnaire (CEQ): validating its use in the United Kingdom. *BMC Pregnancy and Childbirth*, 15:86-93	To measure test-retest validity and criterion validity for the CEQ	n =350 women **UK**	A prospective study The Childbirth Experience Questionnaire (CEQ) with: - 22 items loaded in 4 domains: Own capacity, Professional support, Perceived safety and Participation - 4-point Likert-type scale format The CEQ was proved valid and reliable after performance of the following tests: - Face and construct validity - Test-retest reliability - Pearson correlation coefficient	Questionnaire may be used to measure the professional support received by women with regard to: - Time spent with woman and partner - Information provided about procedures performed - Responses to needs expressed by woman
13	Nikula et al. (2015). Mothers' perceptions of labour support. *American journal of maternal child nursing*, 40(6):373-381	To describe mothers' perceptions of labour support during childbirth.	n = 260 mothers in the postnatal ward **Finland**	A cross-sectional, descriptive, correlational survey design Bryanton adaptation of Nursing Support in Labour Questionnaire (BANSILQ) which includes - 25 items of midwives' behaviours during labour - 5-point Likert-type scale format The results showed that positive birth experience was significantly correlated with emotional, tangible and informational support	Mothers perceived emotional support to be more helpful than tangible and informational support Women highly indicated the following as most helpful midwifery support: - Giving praise - Caring on an individual basis - Tangible support - Answering questions truthfully and understandably

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
14	Baas et al. (2015). Women's Suggestions for Improving Midwifery Care in The Netherlands. *BIRTH*, 42(4):369-378	To explore women's suggestions for improving midwifery care in the Netherlands	n = 8200 women **Netherlands**	Qualitative study Suggestions reported by women: - Continuity of the care - Information tailored for the client - Personal approach - Enough time spent per client	Suggestions of women with regards to Labour support were related to: - Provision of tailed information - Continuous presence of midwife - Effective communication among midwifery team for continuity of care
15	Mohammed, A.K. (2016). Maternal satisfaction regarding quality of nursing care during labour and delivery in Suleiman teaching hospital. *International Journal of Nursing and Midwifery*, 8(3):18-27	To assess quality of nursing care offered during intrapartum and postpartum periods	n = 200 postpartum women **Iraq**	A descriptive quantitative study Two questionnaires: - Demographic characteristics - Women's views of birth Labour Satisfaction Questionnaire (WQBLS4) Findings indicate the factors influencing satisfaction and dissatisfaction of women, mainly: - Caregivers and client interactions - Involvement of clients in the caring process - Outcome of labour for both mother and baby	Women were strongly satisfied with items related to professional support including: - Being patient and supportive with clients - Politeness and respect - Carers always listened clients carefully - Explaining procedure

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
16	Aschenbrenner et al. (2016). Nurses' Own Birth Experiences Influence Labour Support Attitudes and Behaviours. *JOGNN*, 45:491–501	To describe the attitudes of intrapartum nurses about the importance of and intent to provide professional labour support (PLS); barriers to PLS.	n = 60 intrapartum nurses **USA**	A cross-sectional, mixed-methods, descriptive design Labour Support Questionnaire (LSQ) with 3 parties: - characteristics of intrapartum nurses - midwives' labour support behaviours - additional questions about barriers to LS The study findings state that: - Nurses' own personal birth experiences were associated with their attitude and the intention to provide PLS. - Mothers' perceived emotional support to be more helpful than tangible and informational support - Barriers to provide PLS include low staffing, routine use of epidural analgesia and lack of birth plans	The study demonstrates the dimension of professional support namely: - Emotional Support–Nurse/ Caring Behaviours - Informational Support - Emotional Support–Creating: Control, Security, and Comfort - Emotional Support–Reassurance - Advocacy Participants reported the highest importance attributed to: - Emotional support and caring behaviours which includes: - Provision of reassurance and praise - Demonstration of empathy and care
17	Isbir and Serçekus (2017). The Effects of intrapartum Supportive Care on Fear of Delivery and Labour Outcomes: A Single-Blind Randomized Controlled Trial. *The Journal of Nursing Research*, 25(2):112-119	To assess the effects of intrapartum supportive care	n=72 women in intervention group (n = 36) or the control group (n = 36) **Turkey**	Randomized controlled study Perceived Support and control in Birth (SCIB) scale was used to measure perceived support and control during childbirth The intervention group reported clinically meaningful benefits: - less fear of delivery - higher perceived support and control during delivery - lower pain and a shorter delivery period than the control group	The study indicates the intrapartum Supportive Care provided to intervention group as following: - Physical support - Emotional support - Instructional support - Advocacy

	Author, year of publication, Title, Journal	Purpose	Population and Setting	Design and findings	Best practice of labour support (LS) provision
18	Bohren et al. (2017). Continuous support for women during childbirth. *The Cochrane Database of Systematic Reviews* Issue 7, 1-169 **(Review)**	To assess the effects, on women and their babies, of continuous, one-to-one intrapartum support compared with usual care, in any setting	n = 27 trials **High and middle incomes countries**	A systematic review WHO International Clinical Trials Registry Platform Review reports the benefits of intrapartum support including: - Spontaneous vaginal birth - Less report about negative childbirth experience - Less use of intrapartum analgesia - Less caesarean birth and instrumental vaginal birth - Satisfaction of baby status	The review reports the common elements of continuous support during childbirth include: - Emotional support (e.g. continuous presence, reassurance and praise) - Information about labour progress and advice regarding coping techniques - Comfort measures (e.g. comforting touch, massage, warm baths/showers, encouraging mobility, promoting adequate fluid intake and output) - Advocacy (e.g. speak on the woman behalf about her wishes to other staff)
19	de Carvalho Leite and Awoko Higginbottom, (2017). Doulas in Canada: A Scoping Review. *Canadian Journal of Midwifery Research & Practice*, 16(1)	To describe the research evidence regarding doulas in Canada	n = 17 studies **Canada**	Arksey and O'Malley's framework (2005) Search in databases CINAHL, Medline, Health Policy Reference Scopus Findings showed that - The Role of Doula was valued by labouring and postpartum women - Need to clarify the role of Doula - Health providers do not express positive attitude to Doula	. Doulas' Perspectives with regards to labour support provision*:* reassuring, encouraging, praising, explaining, mirroring, accepting, reinforcing, reframing and debriefing

Once the articles were identified and summarised as shown in Table 3.2, all the articles that dealt specifically with the measurement of labour support were identified as listed in Table 3.3. This was done in order to meet the second objective for this review viz to identify existing instruments for the measurement of labour support practice.

Table 3.3: Data matrix for articles identified for labour support measurement

	Instrument name	Author / Year	Setting	Items/ subscales of instrument	Dimensions of Labour Support Care (Royal college of Midwives, 2012)					
					Emotional support	Physical support/ comfort	Informational support and advice	Advocacy	Total	Comments
					Frequency	Frequency	Frequency	Frequency		
1.	Positive Presence Index (PPI)	Hunter, L (2009)	**USA**	29-questions in format of 7 response Likert PPI looks at emotional, physical, spiritual and advocacy	1	1	0	0	**2**	Tool used for assessment of women's perceptions about midwifery care during labour and birth
2.	Perceived Support and control in Birth (SCIB)	*****Ford, Ayers and Wright (2009) ***** Isbir and Serçekus (2017)	**UK** **Turkey**	33 items loaded in 3 dimensions: - Internal control - External factors - Professional support 5-point Likert-type scale	1	1	1	0	**3**	Instrument used for measurement of maternal perceptions of support and control during birth
3.	Labour Support Scale (LSS)	Sleutel (2002) in Barrett and Stark (2010)	**USA**	28-items in 5 response Likert-type scale Subscales of - physiologic intervention and labour support practice - - emotional support - physical support - advocacy	1	1	0	1	**3**	Measures the concept and factors associated with labour support among intrapartum nurses

4.	A self-structured questionnaire to assess mother's expectations about labour support	Daniel, B. (2013)	**India**	- Physical comfort - Caring and emotional support - Interpersonal communication style - Provision of information - Advocacy - Competence of profession - Spiritual care	1	1	1	1	**4**	Identify the expectations of mothers from professional nurses in first stage of labour
5	Childbirth experience questionnaire	Dencker et al. (2010)	**Sweden**	22 items loaded in 4 factors: - Own capacity - Professional support - Perceived safety - Participation	1	0	1	1	**3**	Tool developed for assessing different aspects of first-time mothers' childbirth experience
6.	Birth Companion Support Questionnaire (BCSQ)	Dunne, Fraser and Gardiner (2014).	**Australia**	17 items in format of 4-point Likert 2 subscales - emotional support - tangible support	1	1	0	0	**2**	Evaluating women's perceptions of labour social support provided
7.	Childbirth experience questionnaire (CEQ)	Walker et al. (2015)	**UK**	22 items in 4-point Likert-type scale format and loaded in 4 domains: - Own capacity - Professional support - Perceived safety - Participation	1	1	1	1	**4**	Tool developed to assess woman's childbirth experience

8.	Bryanton adaptation of Nursing Support in Labour Questionnaire (BANSILQ)	Nikula et al. (2015)	**Finland**	- 25 items supportive midwifery behaviours categorized into three subscales: - emotional support - informational support - tangible support 8 demographic characteristics 5-point Likert-type scale	1	1	1	0	**3**	Instrument to describe mothers' perceptions about labour support
9.	Women's views of birth Labour Satisfaction Questionnaire (WQBLS4).	Mohammed (2016)	**Iraq**	Part I: Demographic characteristics and history about pregnancy Part II: Women's views of birth labour satisfaction (WQBLS4) with 32 items about maternal satisfaction with care offered during labour and birth - 3-point Likert-type scale	1	1	1	0	**3**	Tool used to assess quality of nursing/ midwifery care offered to women during childbirth period

10.	Labour Support Questionnaire (LSQ)	Sauls (2004) in Aschenbrenner et al. (2016)	**USA**	Labour Support Questionnaire (LSQ) with 3 parts: - Part I: Characteristics of intrapartum nurses - Part II: - Midwives' Labour Support Behaviours - 6point Likert-type scale - 27 items in - 6 dimensions of PLS behaviours: - Tangible Support (6 items) - Advocacy (5 items) - Emotional Support (5 items) - Control, Security, Comfort (5 items - Nurse Caring Behaviours (3 items) - Informational Support (3 items) - Part III: Additional questions about barriers to LS	1	1	1	1	**4**	Tool to describe the attitudes of intrapartum nurses about the importance to provide professional labour support (PLS) and related barriers to PLS

3.5. COLLATING, SUMMARIZING AND REPORTING THE RESULTS

The data that was extracted and displayed in the data matrix were analysed and the following findings made.

3.5.1 Characteristics of the studies

3.5.1.1 Geographical distribution of labour support practice articles included the study

The articles included in this review were distributed amongst all continents. Thus, 42% (n=8) of the publications were from Europe, 32% (n=6) the United States of America, 5% (n=1) from Africa, 10% (n=2) from Asia and 5% (n=1) from Australia.

3.5.1.2 Distribution of publications by year of publication

There were seven (7) articles published between 2009 and 2013 on the subject, whereas twelve (12) articles were published between 2014 and 2017, indicating an increase in publications on the subject.

3.5.1.3 Distribution of articles in journals of publication

Midwifery Journals had the most publications with 21% (n=4) of the articles included in this study, followed by the Cochrane library with 11% (n=2). The remaining 13 articles constituted 5% each of the total number of articles, i.e. (n=1) article from each of the following journals: *Journal of Midwifery & Women's Health, Journal of Women's Health, The Journal of Perinatal Education, Health, International Journal of Nursing Care, Evidence Based Midwifery, BMC Pregnancy and Childbirth, American Journal of maternal child nursing, BIRTH, International Journal of Nursing and Midwifery, The Journal of Nursing Research, Canadian Journal of Midwifery Research & Practice, Journal of Obstetrics, Gynaecology and Neonatal Nursing.*

3.5.1.4 Author collaboration in publications

Author collaboration refers to more than one author having written the article. Of the nineteen (19) articles included in this study, 74% (n=14) were multi-authored whereas 26% (n=5) of the articles were sole-authored.

3.5.1.5 Approach used in reviewed articles

The majority of the articles (53% or n=10) were quantitative studies followed by 26% (n=5) reviews, and 21 % (n=4) qualitative studies.

3.5.1.6 Focus of articles

Most of the studies 63% (n= 12) were focused on women's experience of care in childbirth. Fewer studies (31 % or n=6) focused specifically on exploring the effect of labour support care and factors influencing the nurses and midwives' behaviours with regard to the practice of labour support. One study reported the development and validation of a research instrument to measure women's perceptions of support during labour and delivery.

3 5.2 Themes of included publications

The data from the review was classified into four themes which were drawn from the labour support framework of the Royal College of Midwives (2012). The framework identified emotional support, physical support, information and advice and advocacy, which were used as priori codes for this review. The themes and sub-themes are summarised in Table 3.4.

Table 3.4: Themes and subthemes identified

Themes	Sub-themes
1. Emotional support	Distractions and encouragement
	Calming verbal and nonverbal expression
	Reframe negative thoughts into positive
	Use of spirituality/ religious orientation
	Presence and reassurance
	Use of humour
	Demonstration of caring attitude with respect
	Continuous bedside support and presence
2. Information and advice	Listening to women's views
	Provide instructions on breathing and relaxation
	Give feedback on asked questions
	Orientation about routine and procedures of health facility
	Provide information about progress of labour and delivery
3. Physical support and comfort	Environmental control
	Different positions, breathing and pushing
	Mobilization and relaxation techniques
	Massaging, touching
	Nourishment
	Application of cold, heat packs and hydrotherapy
	Hygiene
	Elimination
4. Advocacy	Conveying respect
	Protecting the client
	Ensuring security and privacy
	Conflict resolution
	Assisting mothers to make informed choices
	Being the mother's voice
	Acknowledging mother's expectations
	Continuity of care with health care team

3.5.2.1 Emotional support

Emotional support can be obtained through presence, encouragement and distraction provided by nurses and midwives to help women to experience labour with positive feelings. The aspect of emotional support was identified in all nineteen articles[1-19] included in this review. This aspect was the most commonly cited aspect of labour support in the literature. The literature highlighted the following aspects of emotional support: use of distractions, encouragement, jokes, verbal and nonverbal expression, nurse or midwife presence, keeping women free from negative thoughts and enabling a woman to exercise her religious beliefs.

3.5.2.2 Physical support

Fifteen articles included in this review refer to physical support as one of the key aspects of professional support during labour and delivery. It may be provided through massaging the lower back, assisting the woman to change her position, providing food and/or drinks, and maintaining hygiene [1-7&9-11&13&16-19].

3.5.2.3 Information and advice

Eighteen articles included in this review [1-7&9-19] indicated the importance of information and advice during the childbirth period. Communicating with women in labour or during the delivery process allows the identification of their needs and expectations for better solutions to enhance the childbirth experience. The reviewed articles reported that nurses and midwives should offer information and guidance related to labour progress and institutional rules, teach the women different positions and provide to them techniques of breathing, pushing and relaxation.

3.5.2.4 Advocacy

The review indicated that six articles[4-6-7-16-17-18] stated that advocacy plays a valuable role during labour support provision. Advocacy entails the health care provider intervening on behalf of the client and taking responsibility for the provision of privacy, protection and confidentiality of women in labour and the delivery process.

3.5.3 Instruments identified to measure labour support practice

Ten (10) of the twenty-nine articles included in this study reported on the measurement of labour support practice. Eighty percent (80%) of the instruments identified used self-administered questionnaires and a Likert-type scale responses.[1-3&6-10]

The literature reviewed reported eight (80%) instruments that involved women as study participants and the instruments used were mostly with the purpose of assessing women's experience, views, expectations and satisfaction about care provided during the childbirth process [1-9]. Only two studies[3&10] used instruments completed by health care providers to explore the factors and behaviours associated with labour support practice. Most identified instruments (90%) were used in high income settings [1-3&5-10].

3.6. DISCUSSION

The key findings of this scoping review indicate the aspects of labour support practice and its measurement which are summarized and discussed. The review reports information about supportive care implemented by nurses and midwives during labour and delivery within a different context than Africa. There is scarcity of evidence about the nature of labour support provision, and its measurement, in developing countries, including Rwanda. This gap makes the current study relevant, as the need to collect evidence of the practice of labour support and its measurement is the first step to developing a labour support measurement tool for Rwanda. The studies included in this review were discussed in two sections namely labour support practice and labour support measurement.

3.6.1 Labour support practice

Emotional support

The more intense labour becomes, the more a woman needs support, reassurance, attention and the presence of a health care provider. However, lack of emotional support and abuse of women during labour and delivery has been reported in Rosen et al.'s (2015) study, conducted in five countries in Sub-Saharan Africa, including Rwanda. This study indicates that in low resource settings nurses and midwives failed to provide emotional support, by leaving women alone during labour without giving them any alternative options such as

personal companions, lay supporters or providing distraction (television and music). Under such conditions women feel lonely, ignored and neglected during the childbirth process at health facilities (Rosen et al., 2015). Shortage of nurses and midwives and limited infrastructure in the public health sector were found to be linked to the lack of provision of adequate labour support and poor quality care during the childbirth process (Renfrew et al., 2014). A possible reason for this is that labouring women in Africa are aware of the constraints and have no expectations for labour support and therefore make no demands for it.

Physical and comfort support

Literature indicates various measures of physical support and comfort which may be provided to women during labour and delivery to enhance their birth experience (Adams and Bianchi, 2008, Iravani et al., 2015). However, the provision of physical support depends on available resources in terms of staffing, equipment and space at health facilities and the labour status of women as well. Limited resources experienced by developing countries do not allow the practice of some comfort measures such as hydrotherapy, warm baths or the application of heat or cold.

The review conducted by Lunda et al. (2018) reported that in low income settings, women frequently share a common labour room and bathrooms, which limits the privacy and hygiene conditions for labouring mothers. With regard to change of position and taking a walk, the same review indicated that midwives and nurses provide instructions to labouring women on how to mobilize during labour rather than demonstrating how to do so. This could be due to lack of enough of space and staff versus a high demand of women in the labour ward (Lunda et al., 2018).

Drinks and food are commonly recommended during labour for comfort and nourishment to help women to cope with labour. In their review, Bohren et al. (2017) indicated that in some birth settings of low- and middle- income countries, the food was restricted in labour wards by health care providers in anticipation of a possible surgical intervention. On the other hand, the restriction of food in labour wards was linked to the culture of trying to prevent women from passing a stool during the birthing process, since when it happens, culturally, women feel embarrassed. Sometimes mothers may be blamed by nurses and midwives who do not like their patients passing stool despite it being normal during the second stage of labour.

Regarding eating and drinking during labour and delivery, Bohren et al. (2017) posited that there was no reason why eating and drinking should be restricted for women in labour if the option of using regional anaesthesia for women is available. The same authors, argue that women should not feel ashamed when passing stool during labour and delivery and nurses and midwives should not blame women for doing so because it is completely natural (Bohren et al., 2017).

Information and advice

According to Spencer et al. (2018), providing information about the progress of labour and advice related to coping strategies influence women to be more engaged and cooperative during the childbirth process. During labour, the midwives not only offer information related to labour progress, they also take the opportunity to coach women how to cope with labour, respond to their questions and explain to women the procedures and policies of the birth setting. Communication between mothers and health care providers needs to be effective. An important step towards achieving communication is to develop an understanding of the woman's language (Spencer et al., 2018, World Health Organization, 2018).

Despite how helpful the information given to women during labour and delivery is, the study conducted in South Africa by Maputle (2018) found that it frequently happened that health care providers allowed limited opportunity to mothers for comments and clarification about the information given to them. Thus, when nurses and midwives keep telling women what they have to do using a 'shouting voice' and clinical language, women may feel annoyed, instead of the communication promoting their active participation and cooperation during labour and delivery. Nurses and midwives should speak to mothers using an understandable language, avoid giving routine information and rather focus on tailored information to enhance active involvement of mothers in the labour and delivery process (Maputle, 2018).

Advocacy

Nurses and midwives practice advocacy by speaking up on behalf of mothers to meet their needs and to prevent harm occurring to them and their babies (Hodnett et al., 2012). While nurses and midwives act as intermediaries between labouring women and doctors or other health professionals, they sometimes fail to convince doctors about the decisions to be taken with regard to childbirth care or interventions performed for the benefit of women.

In urban birth settings, for example, decisions related to performing a caesarean section may be taken in advance by the doctors and women, without considering nurses' or midwives' progress reports indicating the option of conducting normal delivery (Singh et al., 2018). On the other hand, in remote areas, nurses and midwives make an effort to advocate for women in labour, but the contextual factors including shortage of equipment and staff do not allow them to provide adequate continuous labour support practices (Barclay and Kornelsen, 2016).

According to Aune et al. (2014) women valued the role of committed nurses and midwives who work in labour wards and use minimal resources available at the health facilities, combined with soft skills such as communication, presence, empathy and leadership skills to make women feel truly cared for during the labour and delivery process. However, in her study conducted in South Africa, Maputle (2018) posited that communication and information sharing were limited among nurses and midwives while providing maternity care. This may lead to women's negative experience of childbirth (Maputle, 2018).

Evidence highlights measures that enable midwives and nurses to take the lead in providing labour support appropriately by using teamwork, collaboration, philosophy of birth as a natural process, facility culture, experience and training about labour support practice (Aschenbrenner et al., 2016, Barrett and Stark, 2010). Nurses and midwives need to be self-motivated about their advocacy role through the use of soft skills to improve the quality of care and increase mothers' experience during labour and delivery (Baas et al., 2015b).

3.6.2 Factors influencing the practice of labour support

The review indicated the factors that contribute positively to the practice of labour support, while other factors do not enable the implementation of labour support in its all aspects.

Limited resources were reported to impact negatively on the quality of maternity care including labour support practice (Renfrew et al., 2014). This is supported by Barret and Stark (2010) who argue that an inadequate physical environment and poor staffing, with a shortage of midwives and nurses working in labour wards hindering the practice of labour support.

Lack of or insufficient physical infrastructure limits the provision of adequate privacy and companionship of mothers in labour. The study carried out in one tertiary South African public health facility indicated that some labour support practices did not exist due to a

shortage of space. Supportive care therefore remains unknown because there is no opportunity to perform such care among labouring women (Maputle, 2018). This applies to poor resource settings generally located in the African context compared to developed settings, which mostly have a labouring environment with the necessary equipment and enough staff to provide for all aspects of labour support among labouring women (Kyei-Nimakoh et al., 2017).

Similarly, the review conducted by Lunda et al. (2018) about women's experiences of continuous support during childbirth, showed that the shortage of nurses and midwives in health facilities is strongly associated with lack of labour support practice. Midwives/nurses are unable to respond to individual women's needs in terms of supportive care including comfort measures, presence, tailored information and timely assistance in emergency conditions during labour and delivery, where such shortages exist (Lunda et al., 2018).

Working conditions might be seen to be associated with the labour support practices. Staffing influences the quality of maternity care, including labour support. The more nurses and midwives become overloaded, the more they behave unprofessionally, which impacts negatively on mothers' birth experience (Kyei-Nimakoh et al., 2017).

The study conducted in Sweden reports that some aspects of supportive care were not given by nurses and midwives. This could result from lack of knowledge and experience related to all aspects of labour support (Thorstensson et al., 2012). In line with this, Hodnett et al. (2013) recommended the practice of labour support by trained and competent health care providers who are qualified to deliver all categories of labour support among labouring women. On the other hand, a lack of awareness of labour support practice among labouring women may enhance their mind-set to keep quiet and not request any needed support while experiencing labour. The provision of improved labour support by nurses and midwives will encourage women to speak out and eliminate the current culture of "silent birth"

Although labour support is influenced by the constraints related to physical infrastructure, staffing and institutional factors, specifically in low income settings, there are nurses and midwives that provide labour support to labouring women by using available resources or using soft skills that do not need many resources. High quality equipment and infrastructure found in developed settings make the implementation of labour support practice easier to maintain, and therefore improve the quality of maternity services.

3.6.3 Labour support measurement

A review of labour support measurement provides evidence on how to measure the practices of labour support. It has been noted that the measurement tools found in this review were used in high income and well-resourced settings, and this review indicated that the dimensions of labour support were measured differently depending on the study purpose and settings.

Despite the low maternal mortality rate observed in developed countries, most of evidence regarding childbirth care is generated from developed settings. No labour support tools were found that had been developed for use within low income contexts.

The poor generation of evidence and lack of new knowledge about important issues experienced in the African continent may be rooted in the lack of research funds and a continuous financial dependence on well- resourced settings (Cronin and Sadan, 2015).

While a variety of tools were identified to measure the quality of care during childbirth, these tools were developed for a wide range of purposes, including experience, perceptions, expectations and views of women about the care that they have received during labour and delivery. Other reviewed tools measured factors associated with the practice of labour support by nurses and midwives. In addition, the reviewed tools could not measure all aspects of labour support. There was no standardized tool to measure the practices of labour support.

For this review, the most common method used to evaluate labour support provision was questionnaires with a Likert-type scale to measure the supportive care either from the perspective of health care providers or the perspective of mothers in the postnatal period. The use of a Likert-type scale has the advantage of an easier format to be completed by respondents, who answer by indicating their level of agreement or disagreement with statements about supportive care. However, the Likert-type scale responses do not allow participants the option to provide their own exact answers due to statements already given for scale rating (Bissonnette, 2007).

Most of the tools reviewed did not have a section with open-ended questions to give the respondents a chance to provide their view in their own words. Only one labour support question (Sauls, 2004) was found to have an additional question about barriers to the practice of labour support. The reliability and validity of the instrument was not tested for some

reviewed tools. It seems there is little uniformity or consistency in measuring childbirth care including labour support.

Based on the findings of this review, no known studies have been carried out to explore the views about labour support provision concurrently from both perspectives of women in the postnatal period and health care providers in any birth setting. This points to a gap related to robust ways to assess labour support practice.

The World Health Organization (World Health Organization, 2015b) recommends that research be increased to produce more evidence aimed at improved quality of childbirth care, considering the inputs of both clients and health care providers.

During the process of this review, it became evident that there is was an opportunity to design a suitable instrument to measure labour support practice from the perspectives of both health care providers and mothers, using the information of existing tools and taking into consideration the local context in which the newly designed tool will be used.

3.6.4 Nursing implications

Evidence shows a great number of benefits linked to labour support practice offered to labouring women by nurses and midwives. However, its provision is still not routinely implemented in all birth settings. Health facilities are encouraged to include labour support care in their maternity routine procedures, by using available resources in labour wards and the soft skills of nurses and midwives. Further research is needed to assess the factors that affect labour support provision in developing countries to generate evidence about interventions to promote labour support practice, using a research tool which may be suitable for low income settings. If the quality of care is measured, problem areas can be identified, and specific measures implemented to improve the quality of care in those areas.

3.7. CONCLUSION

Although the findings of this scoping review indicate professional labour support is assumed to have a positive impact on both the mother's and baby's wellbeing, there is a scarcity of evidence about the nature of its provision, and the measurement thereof, especially in developing countries including Rwanda. This review indicated best practices of labour support. However, there was little or no evidence that these best practices happen in low

income settings with limited resources including Rwanda. More studies related to labour support provision are needed to generate more evidence and innovations that suit the local context and support strategies aimed at improving the quality of maternity and birth outcomes.

This scoping review led to the conclusion that it was not easy to find evidence about existing provision of labour support practices in Rwanda and there was no instrument found that would effectively be used to assess the importance of labour support practices in African countries including Rwanda.

This chapter discussed details of the scoping review of labour support practice and its measurement. The findings of the scoping review were used to develop a new labour support questionnaire for the survey among nurses and midwives and mothers in postnatal ward at public health facilities in Rwanda. The next chapter presents the development of labour support questionnaires for mothers in postnatal wards, and for nurses and midwives in labour wards.

CHAPTER 4 : DEVELOPING A LABOUR SUPPORT QUESTIONNAIRE

4.1 INTRODUCTION

This chapter documents the process followed to develop labour support questionnaires for both mothers and nurses and midwives. The scoping review conducted indicated that a gap exists for a standardized tool to measure the intended construct of labour support practices in developing countries. Those that are available have been tested for suitability in developed countries. This study aimed partly to develop a suitable labour support instrument that can measure the labour support practices in the context of Rwanda and other developing countries.

The chapter describes in detail the process used for development of the tool (Figure 4.1). The first step was to generate a pool of items, and involved identifying items for the questionnaires, based on the scoping review conducted in the previous phase. In the second step, items drawn from the scoping review were checked and reviewed by a panel of experts to ensure content validity. Next, the reliability was tested to check whether items consistently measured what they were expected to measure, and a pilot study was conducted among intended participants for the study. Fourthly, the construct validity of each questionnaire was demonstrated, using an Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). In conducting both the EFA and CFA, instructions provided by Field (2009), Byrne (2013) and Brown (2015) were followed.

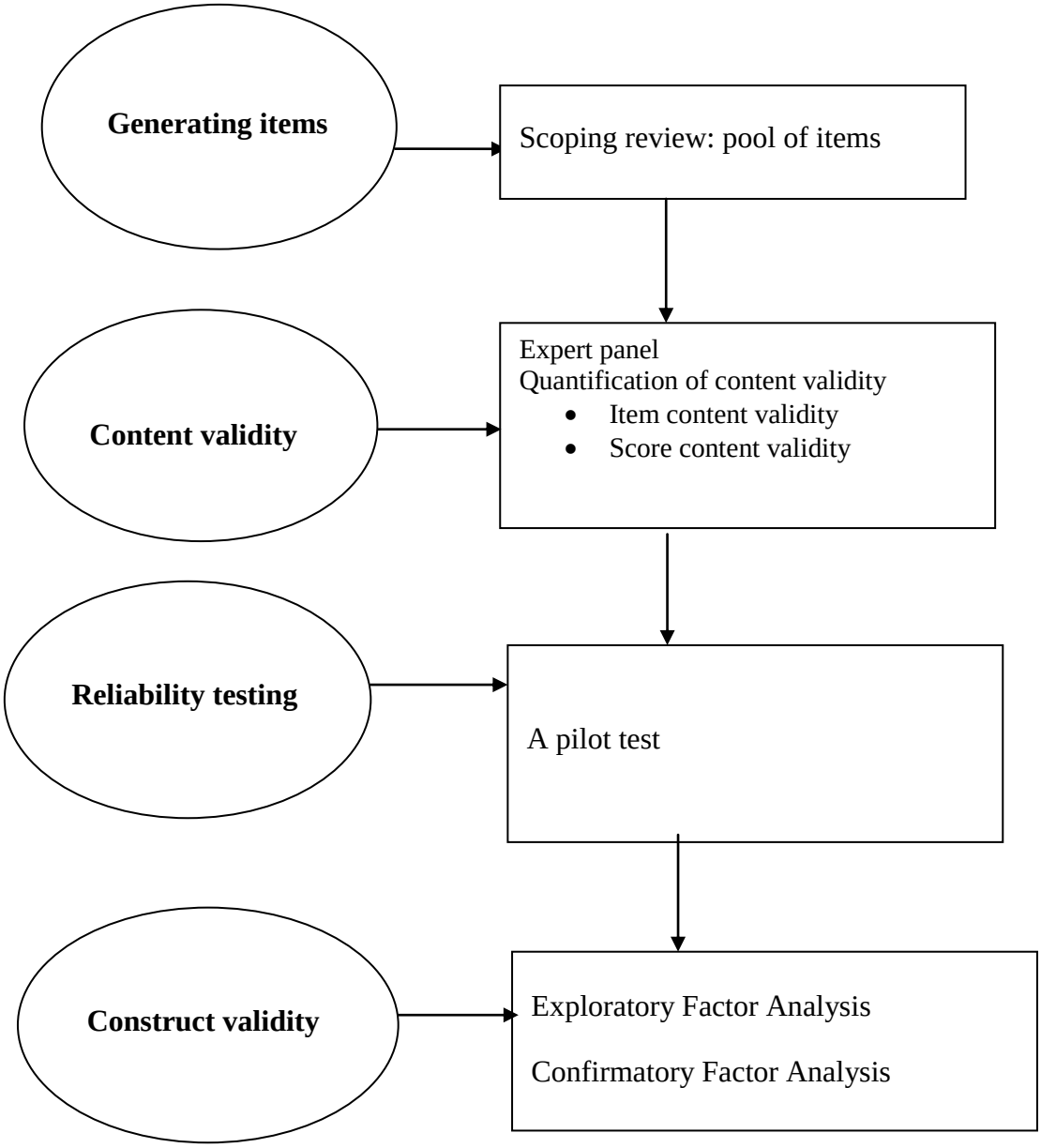


Figure 4.1: Steps of instrument development

4.2. INSTRUMENT DEVELOPMENT

4.2.1. Item generation

As a first step for tool development, the researcher examined possible sources relating to the construct under study. These sources included existing theory relating to the construct, review of associated literature and consultation with experts in the field. The examination of these sources provides a guide to ensure that the content of the instrument is focused on the intended domain to be measured (Vermeulen et al., 2018).

The data from the scoping review conducted provided four themes, which were drawn from the labour support framework of the Royal College of Midwives (The Royal College of Midwives, 2012). The framework identified emotional support, physical support, information and advice and advocacy. These themes formed the basis of the first pool of items generated for the labour support questionnaire, which were subjected to the judgement of a panel of experts.

4.2.2 Expert judgment

Polit and Beck state that while developing an instrument, a panel of experts should give their subjective judgment on each item generated to ensure the content validity of an instrument under development (Polit and Beck, 2010). The judgment of items by experts refers to sense-checking on the basis of relevance and clarity of item (Shrotryia and Dhanda, 2019). The number of experts recommended by the literature ranges between five and ten. Experts are people who are knowledgeable about the area of interest and capable of evaluating each item relating to its appropriateness for the domain intended (Caro-Bautista et al., 2015, Boateng et al., 2018).

In this study, the review of each item was done by a team of experts who were selected for their work experience as a nurse or midwife in labour and delivery wards or midwifery educators and researchers. A total number of eight (8) experts were involved in the evaluation of the items generated. As outlined in Table 4.1, these experts included five (5) midwives and three (3) nurses. In addition, one researcher with expertise in tool development and psychometric scales provided guidance in terms of tool development and validation. Each member of the expert panel was invited to comment freely on the clarity and relevance of each item (Zamanzadeh et al., 2015).

Table 4.1: Experts' team

Expert	Education Level	Field	Years of experience
Nurse	Bachelor	Labour and delivery ward	7
Nurse	Master	Academics: Nursing education and research	8
Nurse	Diploma	Labour and delivery ward	6
Midwife	Bachelor	Labour and delivery ward	9
Midwife	Bachelor	Academics and research: Midwifery education	5
Midwife	Master	Academics and research: Midwifery education	10
Midwife	Master	Administration/Matron	10
Midwife	Diploma	Labour and delivery ward	6
Researcher	PhD	Education and Social Sciences	5

4.2.3 Quantification of content validity

According to Shrotryia and Dhanda (2019), the quantification of content validity involves giving marks to each item based on relevance and clarity by members of the expert team. Therefore, content validity was assessed quantitatively by the expert team, who were asked to establish the proportion of their agreement on the relevance and clarity of each item by rating them on a four-point Likert-type scale (Table 4.1). An item's clarity refers to how clearly it was formulated, while the relevance considers how relevantly the item seemed to measure the construct (Eklund and Gunnarsson, 2008).

Table 4.2: Criteria for quantification of content validity

Relevance	Clarity
1 = not relevant	**1** = not clear
2 = somewhat relevant (item needs some revision)	**2** = somewhat clear (item needs some revision)
3 =relevant (item needs minor revision)	**3** = clear (item needs minor revision)
4 = very relevant	**4** = very clear

According to Ghanbari-Homayi et al. (2019), the most commonly used and reported method for quantifying content validity for multi items is the Item Content Validity Index (I-CVI), which is based on expert ratings of an item's relevance. The I-CVI was calculated, as outlined

in Table. 4.3, by computing the number of experts giving a score of three or four per item, divided by the total number of experts (Polit and Beck, 2010). The literature (Yaghmaie, 2003) indicates that a scale with high content validity should have an I-CVI over 0.75, while items with lower I-CVI should be re-examined and changes made according to the suggestions of the expert team. The Scale of overall Content Validity Index (S-CVI) is calculated by computing the average of all I-CVIs.

Table 4.3: Content validity of labour support questionnaire for nurses and midwives

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	NA	I-CVI
1.Helping to cope with labour and delivery	4	4	3	3	4	3	4	3	8	1
2.Providing confidence in woman's capabilities	4	4	4	3	3	3	4	3	8	1
3.Use of verbal and nonverbal expression	4	4	3	4	3	3	4	3	8	1
4.Keeping woman free from negative thoughts and promoting positive thoughts	4	3	4	3	3	3	4	3	8	1
5.Enabling woman to exercise her religious beliefs	4	3	4	4	4	3	4	3	8	1
6.Using jokes while interacting with woman	4	3	2	3	4	4	4	3	8	1
7.Spending time with woman	3	3	3	3	3	2	3	3	8	0.88
8.Giving continuous reassurance	3	4	3	4	4	4	4	3	8	1
9.Maintaining confidentiality	3	3	4	4	3		4	3	8	1
10.Eliminating disturbances around woman	3	3	4	4	3	3	4	3	8	1
11.Helping woman to move and change positions	4	3	3	4	4	3	4	3	8	1
12.Touching woman and holding her hand	4	3	3	4	3	4	4	3	8	1
13.Providing woman with cold and/or heat packs	2	3	4	3	3	3	4	3	8	0.88
14.Providing a warm shower	4	3	4	4	4	3	4	3	8	1
15.Taking the woman out to the toilet	3	3	4	4	3	3	4	4	8	1
16.Providing food and/or drinks	3	3	4	4	4	3	4	4	8	1
17.Massaging the lower back	3	3	3	3	3	3	3	2	7	0.88
18.Teaching breathing, relaxation and pushing techniques	3	3	4	4	4	3	4	4	8	1
19.Answering questions clearly	3	4	4	3	3	3	4	4	8	1
20.Providing guidance about the routine and procedures of the health facility	4	3	4	3	3	3	4	4	8	1
21.Engaging woman in conversation about progress of labour including delivery	4	3	4	3	4	3	4	3	8	1
22.Treating woman with respect	4	3	4	3	4	4	4	3	8	1
23.Making woman feel safe	4	3	3	3	3	4	3	3	8	1
24.Responding to the needs of woman	4	3	4	3	4	4	3	3	8	1
25.Explaining possible options and potential consequences to make choices	4	3	4	3	4	4	3	4	8	1
S-CVI/Ave										**0.98**
Total agreement										**25**
S-CVI/UA										**0.88**

NA = number of expert answers, S-CVI Average ICV-I = Item Content Validity Index
3 = relevant and clear 4= very relevant and very clear

The retention of an item depended on whether it was supported and agreed to by at least five panel members who gave a score of three or four. For this study, as illustrated above in Table 4.2, all items scored highly on the I-CVI (0.88) and S-CVI (0.98). Comments from the panel of experts resulted in small rewording changes for better clarity and understanding of open-ended question.

After content validity of the questionnaire was obtained, the members of the expert panel were asked to evaluate the face validity of the questionnaire, which refers to the participants' acceptance of the questionnaire in terms of appearance, formatting, readability and clarity of language (Polit and Beck, 2010). Literature indicates that a measurement instrument should be understandable without any ambiguous or unclear words to enable participants' cooperation and motivation while completing the questionnaire (Kumar, 2015, Shrotryia and Dhanda, 2019). To ensure that the designed questionnaire was free of ambiguity and misunderstanding, the questionnaire was reviewed by nurses, midwives and educators for phrasing terminology and recommendation of other important elements for inclusion.

This study used the English language for the design and development process of a labour support questionnaire. Therefore, only midwives and nurses who have been trained in English would be easily able to complete the questionnaire, while women in postnatal wards in Rwanda needed translation of the English questionnaire into their home language, Kinyarwanda. The model of forward translation and back translations (Son, 2018, Tsang et al., 2017) was used in this study.

4.2.4 Translation

Forward translation was made by selecting a professional bilingual translator. A meeting with the translator was organized to explain the concepts that the questionnaire intended to measure. The professional translator was asked to report all terms and phrases which were not simple to understand for further discussion in a consensus meeting.

Both the translated instrument and the original instrument were given to a midwife educator who is fluent in both languages Kinyarwanda and English to check linguistic equivalence and provide comments and corrections where needed in the first version of the translated instrument. The first draft of the translated questionnaire was reviewed again by a professional translator, the researcher, nurses and midwives collectively in order to ensure accuracy relating to the translation of questionnaire.

The final version of the questionnaire translated in Kinyarwanda was given to another bilingual translator to translate back into English to check if the items of the Kinyarwanda translated version still had similar meaning to the original instrument (Tsang et al., 2017). The exercise showed that the Kinyarwanda translation matched the English version, which served as a green light to proceed with piloting the questionnaire.

4.2.5 Pilot test

A pilot test was conducted on a small sample of respondents (10 midwives and nurses and 30 women in postnatal ward) with the purpose to test the reliability of instrument by checking if there was any confusion about items, and to identify any respondents' suggestions to improve items of the developed instrument (Kumar, 2015). Based on the results from pilot test, small amendments were made to the formatting of the questionnaire by reducing the number of pages to print out a full questionnaire on two pages instead of three pages. No other change was raised by the participants. After the pre-test, both labour support questionnaires for women and nurses and midwives were used to collect data for the survey as outlined in chapter three on the methodology.

4.3 MIDWIVES' LABOUR SUPPORT QUESTIONNAIRE

4.3.1. Reliability of instrument

In order to ensure that labour support care was consistently measured, the items in the midwives' questionnaire were subjected to a reliability test using a Cronbach's Alpha. The obtained reliability was 0.89 which indicates that the items in the nurses' and midwives' questionnaire was consistently measuring what it was designed to measure. In other words, internal consistency was established: a Cronbach's Alpha of 0.60 and above is considered reliable (Field, 2009).

4.3.2. Data cleaning

The data set for midwives and nurses was checked for missing data and unusual values. Descriptive statics (frequencies and percentages) were generated for all items in the questionnaire. No unusual values (in reference to values indicated in the questionnaire) were observed in the descriptive statistics, i.e. frequencies. Table 4.4 below provides the status of missing data.

Table 4.4: Missing data in midwives' questionnaire (n=154)

Number of missing data	Frequency	Percentage
0	125	81.2%
1	24	15.6%
2	3	1.9%
5	1	0.6%
7	1	0.6%
Total	**154**	**100%**

As Table 4.4. shows, the response rate for the nurses' and midwives' questionnaire was 81.2%. In other words, 81.2% of respondents fully completed the questionnaire, i.e. without a missing response. For the sake of controlling missing data because it interferes with analysis, the number of acceptable missing data was restricted to 25% of the number of total items. Since the midwives' questionnaire comprised 25 items measured on a four-point Likert-type scale, the following formula was applied: 25*25/100 = 6.25. Respondents who missed more than 6 items were excluded from the analysis (Field, 2009).

4.3.3 Exploratory factor analysis (EFA)

To ensure construct validity of the nurses' and midwives labour support scale, a data reduction, using an Exploratory Factor Analysis (EFA), was run with the option of Principal Component Analysis for grouping together a set of items that are intercorrelated under the same factor. The EFA was run following the instructions provided by Field (2009). The EFA sought to answer the following question: Is the scale measuring the construct it purports to measure, i.e. labour support care? Are the items used 'good' enough to measure labour support care? EFA explored the underlying structure of the data without imposing a hypothesized structure. It was run using SPSS 25.

4.3.3.1 Assumptions

EFA output indicated that the main assumptions that include determinant, Kaiser-Meyer-Olkin (KMO) and Bartlett Test to support the use of factor analysis, were met. While the 'determinant' is an indicator of the absence or presence of multicollinearity (high levels of correlation between items), KMO is a measure of sampling adequacy, and the Bartlett Test of Sphericity measures the strength of the bivariate relationship between items under investigation (Plichta and Kelvin, 2013). The values obtained are provided in Table 4.5.

Table 4.5: EFA assumptions

Assumption	Obtained value	Standard
Determinant	1.70	>0.00001
KMO	0.828	>0.6
Bartlett Test of Sphericity	0.000	<0.5

As Table 4.5. shows, the determinant (1.70) obtained meets the standard because it is greater than >0.00001, which suggests that there is no multicollinearity. In other words, items on the nurses' and midwives' questionnaire are not highly correlated. The KMO (0.828) obtained is also ideal because it is greater than the minimum value of 0.60. The implication for this finding is that the considered sample is adequate and allows for EFA to take place. Similarly, the value for the Bartlett test of sphericity (0.000) is good because it is significant, i.e. less than <0.5. This means that the strength of the bivariate relationship is good enough. As a result, one can expect that some items will form clusters.

4.3.3.2 Extraction of factors

Extraction of factors was performed to identify a number of factors that fit a set of items. (Boateng et al., 2018). Considering Eigen values of 1 or greater (Plichta and Kelvin, 2013), seven factors were extracted. However, the rotated component matrix related to this scenario indicated that some factors would have two (2) items only while it is recommended that a factor should have three (3) to 10 items. An examination of the scree plot clearly indicated that four (4) factors accounted for 51.05 % of the total variance explained.

An attempt was made to increase this percentage by extracting 5 factors but there were factors that would still had two (2) items only. The four-factor model was preferred. Varimax rotation was used given that the study sought to uncover independent factors underlying the labour support questionnaire. It is worth noting that one item "spending time with the woman" loaded poorly on all factors and hence was removed from the analysis. The loading of items and structure of the 4 factors are presented in Table 4.6.

Table 4.6: Loading of items in factors

Items	Factor 1	Factor 2	Factor 3	Factor 4
Teaching breathing, relaxation and pushing techniques	0.69		0.16	-0.10
Providing food and/or drinks	0.68	0.11	0.20	
Helping woman to move and change positions	0.66		0.21	
Treating woman with respect	0.63	0.43		0.27
Giving continuous reassurance	0.59	0.14		0.28
Answering questions clearly	0.59	0.34		0.31
Maintaining confidentiality	0.59	0.21		0.29
Massaging the lower back	0.52	0.17	0.30	0.15
Engaging woman in conversation about progress of labour including delivery	0.50	0.49		0.25
Keeping woman free from negative thoughts and promoting positive thoughts	0.42	0.30	0.24	
Spending time with woman	**0.30**	**0.22**	**0.28**	**0.20**
Explaining possible options and potential consequences to make choices	0.13	0.72	0.16	0.11
Providing confidence in woman's capability		0.66	0.30	0.15
Making woman feel safe	0.46	0.65		0.12
Using verbal and nonverbal expression		0.59	0.11	0.21
Responding to the needs of woman	0.26	0.58		
Helping to cope with labour and delivery	0.32	0.55		-0.17
Eliminating disturbances around woman	0.29	0.51	0.30	-0.25
Providing a warm shower		0.21	0.81	0.14
Providing woman with cold and/or heat packs		0.16	0.80	0.22
Taking the woman out to the toilet	0.18		0.71	
Using jokes while interacting with woman	0.12	0.26	0.49	0.20
Enabling woman to exercise her religious beliefs	0.15		0.31	0.69
Touching woman and held her hand	0.29		0.39	0.59
Providing guidance about the routine and procedures of the health facility		0.31	0.17	0.57

In EFA, according to Field (2009), for an item to be considered as part of a factor it should load onto that factor with a weight of at least 0.40. The loading should be understood as the weight with which an item correlates with other items in the concerned factor. If an item has a loading less than 0.40, then it does not fit in any of the factors and should be removed from

the analysis. Additionally, if an item loads as required in more than two factors, the item belongs where it has the greatest weight. Following these principles, there are four factors to be retained and their corresponding structure is provided in Table 4.7.

Table 4.7: Four-factor structure for nurses and midwives

	Factor 1: Professional/technical support	**Loadings**
Q2.18	Teaching breathing, relaxation and pushing techniques.	0.69
Q2.16	Providing food and/or drinks.	0.68
Q2.11	Helping woman to move and change positions.	0.66
Q2.22	Treating woman with respect.	0.63
Q2.19	Answering questions clearly.	0.59
Q2.8	Giving a continuous reassurance.	0.59
Q2.9	Maintaining confidentiality.	0.59
Q2.17	Massaging the lower back.	0.52
Q2.21	Engaging woman in conversation about progress of labour including delivery.	0.52
Q2.4	Keeping woman free from negative thoughts and promoting positive thoughts.	0.42
	Factor 2: Communication/expression-based support	**Loadings**
Q2.25	Explaining possible options and potential consequences to make choices.	0.72
Q2.2	Providing confidence in woman's capability.	0.66
Q2.23	Making woman feel safe.	0.65
Q2.3	Using verbal and nonverbal expression.	0.59
Q2.24	Responding to the needs of woman.	0.58
Q2.1	Helping to cope with labour and delivery.	0.55
Q2.10	Eliminating disturbances around woman.	0.51
	Factor 3: Comfort support	**Loadings**
Q2.14	Providing a warm shower.	0.81
Q2.13	Providing woman with cold and/or heat packs.	0.8
Q2.15	Taking the woman out to the toilet.	0.71
Q2.6	Using jokes while interacting with woman.	0.49
	Factor 4: Emotional/moral support	**Loadings**
Q2.5	Enabling woman to exercise her religious beliefs.	0.69
Q2.20	Providing guidance about the routine and procedures of the health facility.	0.57
Q2.12	Touching woman and held her hand.	0.59

As indicated in Table 4.7, factor one has ten items, factor two has seven items, factor three comprises four items, and the last factor includes only three items. Once the structure has

been established, it is important to ascertain its accuracy. This is done through Confirmatory Factor Analysis.

4.3.4 Confirmatory Factor Analysis for the nurses' and midwives' Four-Factor Structure

The nurses' and midwives' four-factor structure described in Table 4.8 was submitted to Confirmatory Factor Analysis (CFA) to establish the goodness-of-fit with the data. The CFA was run using the software AMOS 25. The CFA was also conducted excluding all missing data because CFA is very sensitive to missing cases. Guidelines provided by Byrne (2013) and Brown (2015) were instrumental in running the CFA.

4.3.4.1 Description of the CFA process

In this study, goodness-of-fit was established based on measures provided by Hu and Bentler (1999).

Table 4.8: Goodness-of-fit measures

Measure	Threshold
Chi-square/df (cmin/df)	<3 good; <5 sometimes permissible
p-value for the model	>0.05
Comparative Fit Index (CFI)	>0.95 great; 0.90 traditional; >0.80 sometimes permissible
Goodness of Fit Index (CFI)	>0.95
Tusker Lewis Index (TLI)	>0.80
Root Mean Square Error of Approximation (RMSEA)	<0.05 good; 0.05-0.10 Moderate; >0.10 bad
P CLOSE	>0.05

The model-fit associated with the first structure generated by EFA indicated the following indices of goodness-of-fit GFI = 0.80, CFI = 0.85. RMSEA = 0.70 and P Close = 0.006. Since these measures were below the standard, modification indices were consulted to improve the model.

In order to increase the model-fit, step by step modification of the indices was recommended to covariate a series of pairs of error terms belonging to the same factor. The following pairs were covariated: e14 and e12, e12 and e11, e2 and e1, e3 and e1, e4 and e1, e5 and e3, e9 and e7, e10 and e7, e8 and e1. These modifications led to the achievement of the model-fit. The value of the Chi-square is 1.402. However, this Chi-square is significant (p<.05) while the

standard states (Hu and Bentler,1999) that the Chi-square should not be significant: X2(238) = 1.470; p = 0.000. This situation might be due to the limited sample size.

The Goodness-of Fit-Index (GFI) is 0.82, which is acceptable although the standard is that it should be greater than 0.95. The obtained Comparative-Fit-Index (CFI) is 0.90 which is acceptable. The Tucker-Lewis Index (TLI) is 0.87 which meets the standard (>0.80). The Root Mean Square Error of Approximation (RMSEA) is 0.06 which is moderate because the ideal is to have a RMSEA < 0.05 or < 0.08. The obtained PCLOSE (0.08) is excellent because it is greater than 0.05 - which meets the standard. These obtained measures of goodness-of-fit were considered adequate. The confirmed midwives' structure and model are provided in Table 4.9 and Figure 4.2, respectively.

Table 4.9: Confirmed nurses' and midwives' four-factor structure with their respective regression weights

Factor 1: Professional/technical support (10 items)		**Regression weight**
Q2.18	Teaching breathing, relaxation and pushing techniques.	0.47
Q2.16	Providing food and/or drinks.	0.52
Q2.11	Helping woman to move and change positions.	0.50
Q2.22	Treating woman with respect.	0.80
Q2.19	Answering questions clearly.	0.71
Q2.8	Giving a continuous reassurance.	0.59
Q2.9	Maintaining confidentiality.	0.61
Q2.17	Massaging the lower back.	0.53
Q2.21	Engaging woman in conversation about progress of labour including delivery.	0.71
Q2.4	Keeping woman free from negative thoughts and promoting positive thoughts.	0.42
Factor 2: Communication/expression-based support (7 items)		**Regression weight**
Q2.25	Explaining possible options and potential consequences to make choices.	0.61
Q2.2	Providing confidence in woman's capability.	0.55
Q2.23	Making woman feel safe.	0.78
Q2.3	Using verbal and nonverbal expression.	0.37
Q2.24	Responding to the needs of woman.	0.62
Q2.1	Helping to cope with labour and delivery.	0.52
Q2.10	Eliminating disturbances around woman.	0.55
Factor 3: Comfort support (4 items)		**Regression weight**
Q2.14	Providing a warm shower.	0.86
Q2.13	Providing woman with cold and/or heat packs.	0.87
Q2.15	Taking the woman out to the toilet.	0.56
Q2.6	Using jokes while interacting with woman.	0.46
Factor 4: Emotional/moral support (3 items)		**Regression weight**
Q2.5	Enabling woman to exercise her religious beliefs.	0.59
Q2.20	Providing guidance about the routine and procedures of the health facility.	0.45
Q2.12	Touching woman and held her hand.	0.76

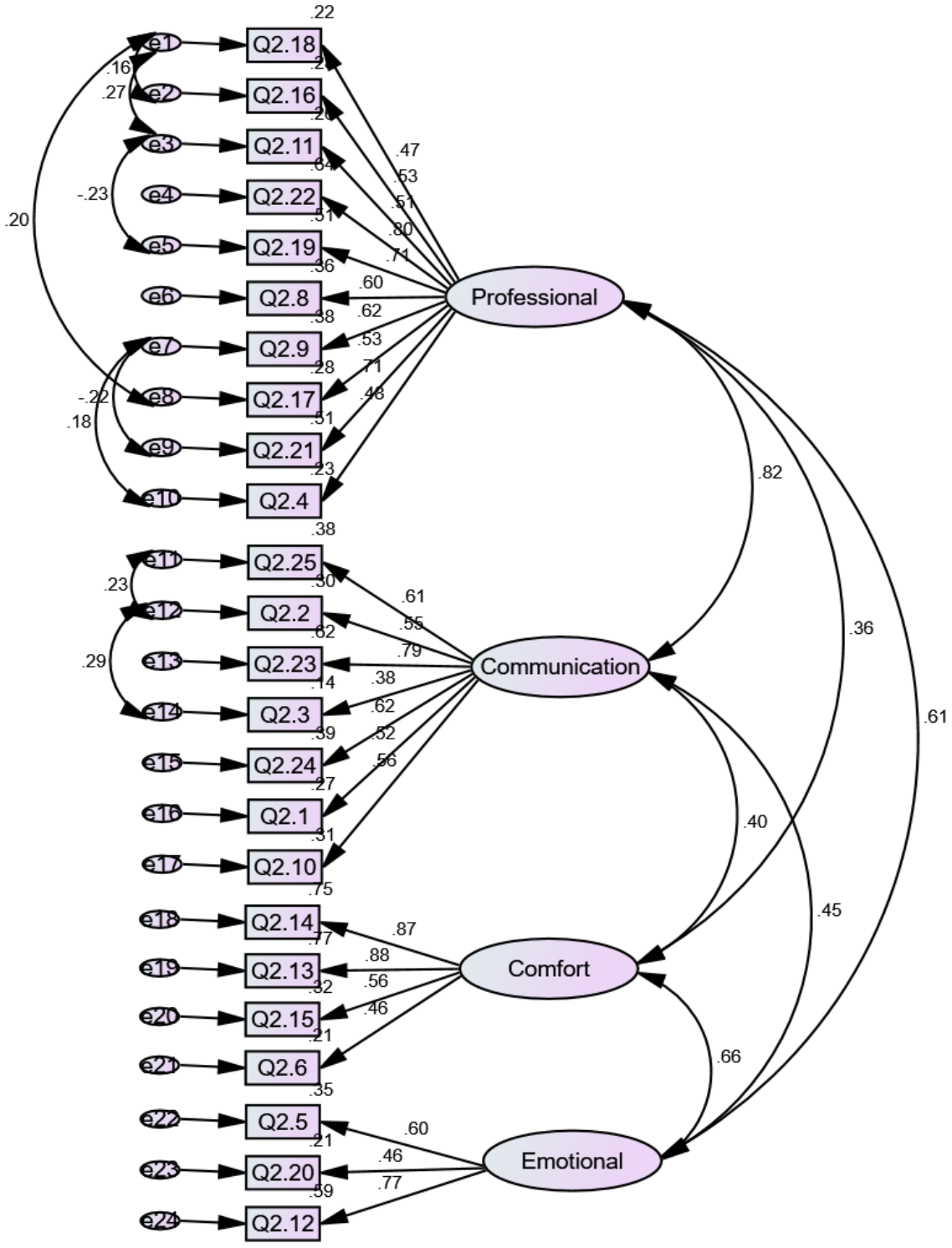


Figure 4.2: Confirmed nurses' and midwives' structure

As can be seen from Table 4.6 and Figure 4.2, items were confirmed in their respective factors. It is important to note that no item was shifted to another factor to achieve the goodness-of-fit. Considering CFA goodness-of-fit indices, it can be concluded that the structure generated by EFA fits the data. In other words, the structure of the midwives' labour support questionnaire is validated.

In what follows, drawing on the nature of items under the factor, a brief description of each scale is provided.

4.3.4.2 key concepts

For clarity, it is worth defining some key concepts. Here reference is made to Field (2009), Byrne (2013) and Brown (2015). An 'eigenvalue' refers to the weight of a factor in explaining the entire questionnaire structure. The 'total variance explained' indicates the percentage attributed to a factor in explaining the construct under investigation. The "R square" (R^2) indicates how much of the factor is accounted for by an individual item.

4.3.4.3. Factor description

Factor 1: Professional support

Factor 1 has an eigenvalue of 7.55 and accounts for 30.23% of the total variance explained. It comprises 10 items. Drawing on the latter, it can be argued that this factor conceives labour support care as providing professional support for successful delivery. This professional support involves practices such as treating woman with respect (R^2 = 0.80); answering questions clearly (R^2 = 0.71); engaging woman in conversation about progress of labour including delivery (R^2 =0.71); maintaining confidentiality (R^2 = 0.61); giving continuous reassurance (R^2 = 0.59); and massaging the lower back (R^2 = 0.53); providing food and/or drinks to the mother in labour (R^2 = 0.52); helping the mother to move and change positions (R^2 = 0.50); keeping woman free from negative thoughts and promoting positive thoughts (R^2 = 0.48); and teaching breathing, relaxation and pushing techniques (R^2 = 0.47).

Factor 2: Communication and expression-based support

Factor 2 has an eigenvalue of 2.24 and accounts for 8.98% of the total variance explained. A total of 7 items make up this factor. Considering the nature of items under factor 2, it is sound to argue that this factor depicts labour support in terms of providing the required communication. In this regard, labour support care is mainly understood as making a woman

feel safe (R^2 = 0.78); responding to the needs of woman (R^2 = 0.62); explaining possible options and potential consequences to make choices (R^2 = 0.61); providing confidence in woman's capability (R^2 = 0.55); eliminating disturbances around woman (R^2 = 0.55); helping to cope with labour and delivery (R^2 = 0.52); and use of verbal and nonverbal expression (R^2 = 0.37).

Factor 3: Comfort support

Factor 3 has an eigenvalue of 1.71 and accounts for 6.84 % of the total variance explained. This factor comprises 4 items which describe labour support in terms of providing relaxation or comfort to a woman in labour. In this regard, labour support care is portrayed along practices like providing woman with cold and/or heat packs (R^2 = 0.87); providing a warm shower (R^2 = 0.86); taking a woman to the toilet (R^2 = 0.56); and using jokes while interacting with woman (R^2 = 0.46);

Factor 4: Emotional/moral support

Factor 4 has an eigenvalue of 1.25 and accounts for 5.00 % of the total variance explained.

This factor comprises only three factors. Factor 4 considers labour support care as providing emotional and moral support. In this regard, the following practices are considered as critical to labour support: touching a woman and holding her hand (R^2 = 0.76); enabling woman to exercise her religious beliefs (R^2 = 0.59); providing guidance about the routine and procedures of the health facility (R^2 = 0.45).

4.3.4.4. Creation of scales

Drawing on the CFA structure, scales were created. This was done using the SPSS 'Transform-Compute variable' function, where scores for all items making up each scale were summed up. The following scales were created: Professional, Communication, Comfort, and Emotional. Table 4.10 lists the number of items and minimum and maximum achievable scores in each scale.

Table 4.10: Items, minimum and maximum scores in scales

Scales	Number of items	Minimum achievable score	Maximum achievable score
Professional	10	10	40
Communication	7	7	28
Comfort	4	4	16
Emotional	3	3	12

Given that in the present study items, were measured on a four-point Likert-type scale, in Table 4.7 the minimum score is calculated by multiplying the number of items by one. Equally, the maximum score is obtained by multiplying the number of items by four. Maximum scores serve as a baseline to interpret results from descriptive analysis. Descriptive and inferential statistics were run based on the newly created scales.

4.4. MOTHERS' LABOUR SUPPORT QUESTIONNAIRE

4.4.1 Reliability of instruments

In order to ensure that labour support care was consistently measured, as recommended by Field (2009), items on the mothers' questionnaire were subjected to the reliability test, i.e. Cronbach's Alpha. The obtained reliability was 0.95 (the standard is .60 and above), which suggests that items on the mothers' questionnaire were consistently measuring what they were expected to measure. In other words, internal consistency was guaranteed.

4.4.2 Data cleaning

The pilot test data set for mothers was checked for missing data and unusual values. Descriptive statistics (frequencies and percentages) for all items on the questionnaire were generated. No unusual value was observed in the descriptive statistics output. Table 4.11 provides the situation for missing data.

Table 4.11: Missing data in mothers' questionnaire (N= 648)

Number of missing data	Frequency	Percent
0	410	63.3
1	60	9.3
2	26	4.0
3	101	15.6
4	23	3.5
5	9	1.4
6	1	0.2
7	2	0.3
8	3	0.5
9	3	0.5

Number of missing data	Frequency	Percent
10	2	0.3
11	1	0.2
12	2	0.3
13	1	0.2
14	2	0.3
15	1	0.2
16	1	0.2
Total	648	100.0

As Table 4.11 shows, the response rate for the mothers' questionnaire is 63.3%. In other words, only 63.3% of respondents fully completed the questionnaire, i.e. without a missing response. For the sake of controlling missing data, the number of acceptable missing data was restricted to 25% of total items. Since the mothers' questionnaire comprised 25 items measured on a four-point Likert-type scale, the following formula was applied: 25*25/100 = 6.25 (Field, 2009). Respondents who missed more than 6 items were excluded from the analysis.

4.4.3 Exploratory Factor Analysis (EFA)

To ensure validity of the mothers' labour support scale, Exploratory Factor Analysis (EFA) was run with the option of Principal Component Analysis. EFA was run following the instructions provided by Field (2009). EFA sought to answer the following question: Is the scale measuring the construct it purports to measure, i.e. labour support care as understood by mothers? Are the items used 'good' enough to measure labour support care? EFA explored the underlying structure of the mothers' data without imposing a hypothesized structure. It was run using SPSS 25.

4.4.3.1 Assumptions

EFA output were measured through the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett Test of Sphericity, while the 'determinant' is an indicator of the absence or presence of multicollinearity (high levels of correlation between items). The Bartlett Test of Sphericity measures the strength of the bivariate relationship between items under investigation. Obtained values for the determinant, KMO and Bartlett Test of Sphericity are provided in Table 4.12.

Table 4.12: EFA assumptions

Assumption	Obtained value	Standard
Determinant	3.92	>0.00001
KMO	0.95	>0.60
Bartlett Test of Sphericity	0.000	<0.5

As Table 4.12 shows, the obtained determinant (3.92) meets the standard because it is greater than >.00001, which suggests that there is no multicollinearity. In other words, items on the mothers' questionnaire are not highly correlated. The obtained KMO (.95) is also ideal because it is greater than the minimum value of .60. The implication for this finding is that the considered sample is adequate and allows for EFA to take place. Similarly, the value for the Bartlett test of sphericity (.0000) is good because it is significant, i.e. lesser than <.5. This means that the strength of the bivariate relationship is good enough. As a result, one can expect that some items will form clusters.

4.4.3.2. Extraction of factors

Examination of eigenvalues of 1 or greater (Plichta and Kelvin, 2013) and the cumulative percentage (ideally factors should explain between 50% and 75%) suggested that three (3) factors were to be extracted. However, the scree plot suggested four (4) items. An attempt was made to extract four factors but one of the latter happened to have two (2) items only while each factor should comprise at least three (3) items. In order to remove the confusion on the number of factors to be extracted, Monte Carlo Parallel Analysis (Field, 2009) was used, and only three (3) factors generated by the data had eigenvalues greater than those randomly generated. Hence three (3) factors, accounting for 61.79% of the total variance, were retained. In this study, varimax rotation is used, given that what is at issue is to uncover independent factors underlying the mothers' labour support care questionnaire. The loading and structure of these factors are provided in Table 4.13.

Table 4.13: Loading of items under factors

Items	Factor 1	Factor 2	Factor 3
Responding to my needs	0.78	0.40	
Answering my questions clearly	0.78	0.24	0.14
Treating me with respect	0.77	0.33	0.15
Spending time with me	0.75	0.14	0.27
Engaging me in conversation about progress of labour including delivery	0.73	0.30	0.19
Maintaining confidentiality	0.73	0.11	0.23
Giving me continuous reassurance	0.72	0.18	0.28
Making me feel safe	0.71	0.42	0.17
Explaining possible options and potential consequences to make choices	0.70	0.32	
Teaching me breathing, relaxation and pushing techniques	0.66	0.17	0.27
Helping me to cope with labour and delivery	0.64	0.16	0.37
Helping me to move and change positions	0.50	0.45	0.34
Providing a warm shower	0.12	0.77	0.20
Providing me with cold and/or heat packs	0.17	0.77	0.25
Taking me out to the toilet	0.27	0.75	0.20
Massaging my lower back	0.31	0.68	0.18
Touching me and holding my hand	0.31	0.56	0.28
Providing me with food and/or drinks	0.41	0.53	0.22
Eliminating disturbances around me	0.44	0.50	0.34
Guiding me about the routine and procedures of the health facility	0.38	0.42	0.29
Enabling me to exercise my religious beliefs	0.13	0.34	0.77
Using verbal and nonverbal expression	0.28	0.21	0.73
Keeping me free from negative thoughts and promoting positive thoughts	0.40	0.18	0.73
Using jokes while interacting with me		0.36	0.68
Providing me with confidence in my own capabilities	0.50	0.20	0.52

In EFA, for an item to be considered as part of a factor it should load onto that factor with the weight of at least .40. Loading should be understood as the weight with which an item correlates with other items in the concerned factor. If an item has a loading less than .40, then it does not fit in any of the factors and should be removed from the analysis. Additionally, if an item loads as required in more than two factors, the item belongs where it has the greatest weight. Following these principles, there are three factors to be retained and their corresponding structure is provided in Table 4.14.

Table 4.14: Women factor structure

	Factor 1: Professional/technical support (11 items)	**Loadings**
Q2.24	Responding to my needs.	0.78
Q2.19	Answering my questions clearly.	0.78
Q2.22	Treating me with respect.	0.77
Q2.7	Spending time with me.	0.75
Q2.21	Engaging me in conversation about progress of labour including delivery.	0.77
Q2.9	Maintaining confidentiality	0.73
Q2.8	Giving me continuous reassurance.	0.72
Q2.23	Making me feel safe.	0.71
Q2.25	Explaining possible options and potential consequences to make choices.	0.7
Q2.18	Teaching me breathing, relaxation and pushing techniques.	0.66
Q2.1	Helping me to cope with labour and delivery.	0.64
	Factor 2: Comfort support (9 items)	**Loadings**
Q2.11	Helping me to move and change positions.	0.45
Q2.14	Providing a warm shower.	0.77
Q2.13	Providing me with cold and/or heat packs.	0.77
Q2.15	Taking me out to the toilet.	0.75
Q2.17	Massaging my lower back.	0.68
Q2.12	Touching me and holding my hand.	0.56
Q2.10	Eliminating disturbances around me.	0.50
Q2.20	Guiding me about the routine and procedures of the health facility.	0.42
Q2.16	Providing me with food and drinks	0.53
	Factor 3: Emotional/moral support (5 items)	**Loadings**
Q2.5	Enabling me to exercise my religious beliefs.	0.77
Q2.3	Using verbal and nonverbal expression.	0.73
Q2.4	Keeping me free from negative thoughts and promoting positive thoughts.	0.73
Q2.6	Using jokes while interacting with me.	0.68
Q2.2	Providing me with confidence in my own capabilities.	0.52

As indicated in Table 4.14, factor one has eleven items, factor two has nine items, and factor three comprises five items. Once the structure has been established, it is necessary to ascertain its accuracy or goodness-of-fit. This is done through Confirmatory Factor Analysis.

4.4.4 Confirmatory Factor Analysis for the women's three-factor structure

The women's mothers' three-factor structure described in Table 4.14 was submitted to Confirmatory Factor Analysis (CFA) for the sake of establishing goodness-of-fit with the data. CFA was run using the software AMOS 25. The CFA was conducted excluding all

missing data because CFA is very sensitive to missing cases. Guidelines provided by Byrne (2013) and Brown (2015) were instrumental in running the CFA.

4.4.4.1 CFA process

Before conducting CFA, all missing data were excluded. The model can only run in this condition. The model-fit associated with the first CFA analysis indicated the following indices of goodness-of-fit: Goodness-of-fit index (GFI) = 0.82, comparative fit index (CFI) = 0.89, Tucker Lewis Index (TLI) = 0.87 and Root Mean Square Error of Approximation (RMSEA) = 0.08. Since these measures were below the standard, modification indices were consulted to improve the model. In this regard, the modification indices recommended to covariate step by step a series of pairs of error terms belonging to the same factor. In the first instance the following error term pairs were correlated: e24 and e21, e25 and e24, e14 and e13, e17 and e15, e20 and e17, e6 and e4. Secondly, it was recommended to correlate e24 and e22, e15 and e13, e17 and e14, e18 and e12, e18 and e15, e3 and e1, e4 and e1, e7 and e4, e10 and e1, e11 and e9. The final covariance concerned the following pairs: e14 and e12, e5 and e3, e5 and e4, e6 and e3, e7 and e6, e8 and e7, e10 and e2, e10 and e3, e11 and e4, e11 and e5, e11 and e8, e11 and e10.

The goodness-of-fit indices achieved were GFI =0.90, CFI= 0.94 Tucker Lewis Index (TLI) = 0.92, PCLOSE = 0.000 and RMSEA = 0.06. The value of the Chi-square was 2.65. However, this Chi-square is significant (p<0.05) while the standard states that the Chi-square should not be significant: $X^2(244) = 2.65$; $p = 0.000$. These measures of goodness-of-fit were considered acceptable although the PCLOSE is still low. The confirmed mothers' structure and model are provided in Table 4.15 and Figure 4.3 respectively.

Table 4.15: Confirmed women three-factor structure

Factor 1: Professional/technical support (11 items)		**Regression weight**
Q2.24	Responding to my needs.	0.78
Q2.19	Answering my questions clearly.	0.78
Q2.22	Treating me with respect.	0.77
Q2.7	Spending time with me.	0.75
Q2.21	Engaging me in conversation about progress of labour including delivery.	0.77
Q2.9	Maintaining confidentiality	0.73
Q2.8	Giving me continuous reassurance.	0.72
Q2.23	Making me feel safe.	0.71
Q2.25	Explaining possible options and potential consequences to make choices.	0.7
Q2.18	Teaching me breathing, relaxation and pushing techniques.	0.66
Q2.1	Helping me to cope with labour and delivery.	0.64
Factor 2: Comfort support (9 items)		**Regression weight**
Q2.11	Helping me to move and change positions.	0.45
Q2.14	Providing a warm shower.	0.77
Q2.13	Providing me with cold and/or heat packs.	0.77
Q2.15	Taking me out to the toilet.	0.75
Q2.17	Massaging my lower back.	0.68
Q2.12	Touching me and holding my hand.	0.56
Q2.10	Eliminating disturbances around me.	0.50
Q2.20	Guiding me about the routine and procedures of the health facility.	0.42
Q2.16	Providing me with food and drinks	0.53
Factor 3: Emotional/moral support (5 items)		**Regression weight**
Q2.5	Enabling me to exercise my religious beliefs.	0.77
Q2.3	Using verbal and nonverbal expression.	0.73
Q2.4	Keeping me free from negative thoughts and promoting positive thoughts.	0.73
Q2.6	Using jokes while interacting with me.	0.68
Q2.2	Providing me with confidence in my own capabilities.	0.52

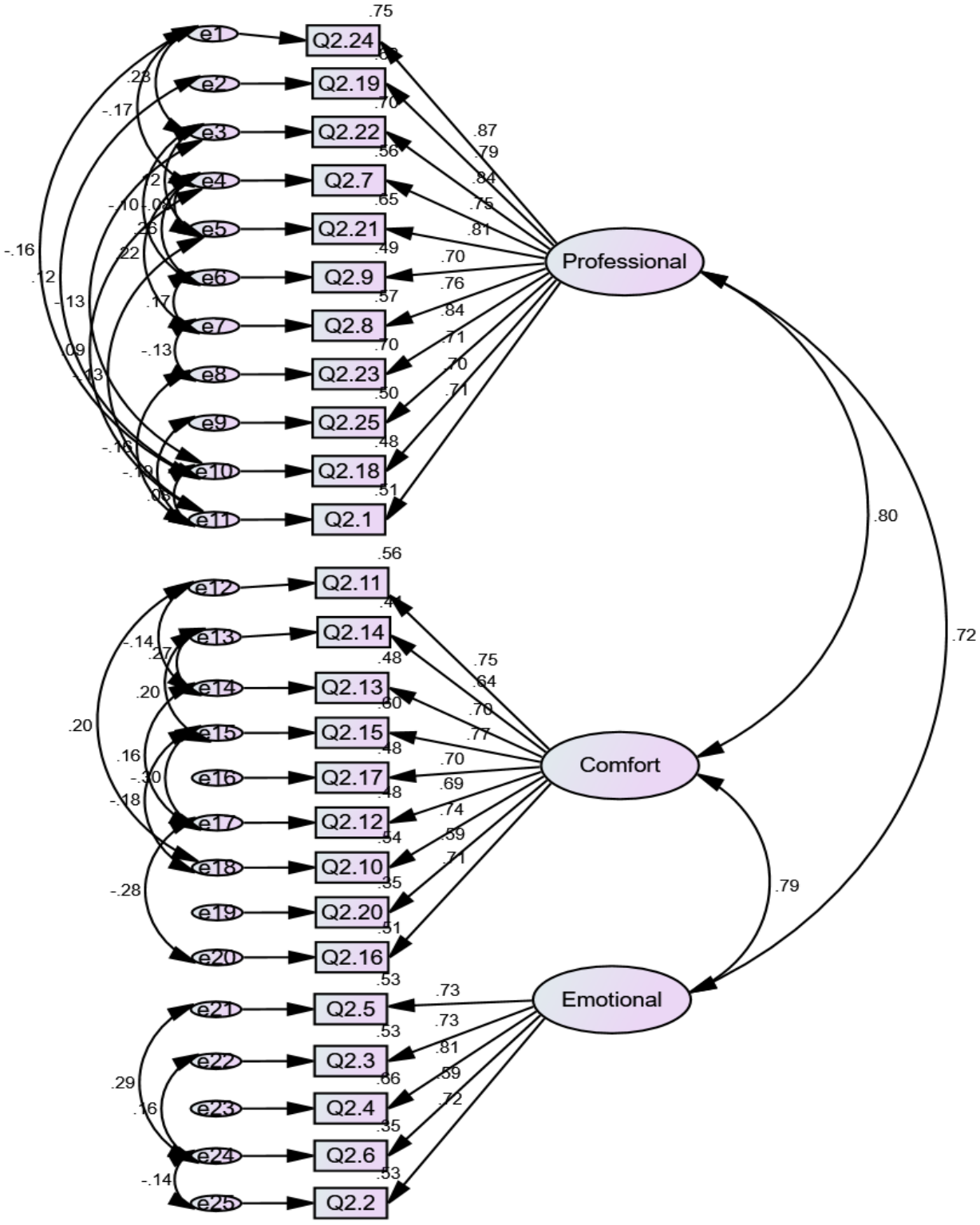


Figure 4.3: Confirmed mothers' structure

As can be seen from Table 4.15 and Figure 4.3, items were confirmed in their respective factors. It is important to note that no item was shifted to another factor to achieve the

goodness-of-fit. Considering CFA goodness-of-fit indices, it can be concluded that the structure generated by EFA fits the data. In other words, the structure of the mothers' questionnaire is validated. In what follows, drawing on the nature of items under the factor, a brief description of each scale is provided.

4.4.4.2. Factor description

Factor 1: Professional support

Factor 1 has an eigenvalue of 12.12 and accounts for 48.50% of the total variance explained. It comprises 11 items. Items composing this factor suggest that mothers understand labour support care in terms of receiving professional guidance during delivery. For a mother in labour, receiving this professional support involves gestures such as responding to her needs (R^2 = 0.86), making her feel safe (R^2 = 0.83), treating the mother with respect (R^2 = 0.83), engaging the mother in conversation about progress of labour including delivery (R^2 = 0.80), answering her questions clearly (R^2 = 0.78), spending time with the mother (R^2 = 0.75), giving the mother continuous reassurance (R^2 = 0.75), helping the mother to cope with labour and delivery (R^2 = 0.71), maintaining confidentiality (R^2 = 0.70), explaining possible options and potential consequences to make choices (R^2 = 0.70) and teaching the mother breathing, relaxation and pushing techniques (R^2 = 0.69).

Factor 2: Comfort

Factor 2 has an eigenvalue of 1.99 and accounts for 7.97% of the total variance explained. It comprises 9 items. This factor describes labour support care as receiving comfort during labour. Such comfort entails actions like taking the mother out to the toilet (R^2 = 0.77), helping the mother to change and move positions(R^2 = 0.74), eliminating disturbances around her (R^2 = 0.73), providing the mother with food and drinks (R^2 = 0.71), providing her with cold and/or heat packs (R^2 = 0.69), massaging her lower back (R^2 = 0.69), touching her and holding her hand (R^2 = 0.69), providing her with a warm shower (R^2 = 0.64) and guiding the mother about the routine and procedures of the health facility(R^2 = 0.59).

Factor 3: Emotional/Moral support

Factor 3 has an eigenvalue of 1.32 and explains 5.30% of the total variance explained. It has five items all of which describe labour support care in terms of being emotionally or morally supported. Understood this way, emotional support entails keeping the mother free from negative thoughts and promoting positive thoughts (R^2 = 0.81), enabling the mother to

exercise her religious belief (R^2 = 0.73), providing the mother with confidence in her own capabilities (R^2 = 0.72), using verbal and nonverbal expression (R^2 = 0.72) and using jokes while interacting with the mother in labour (R^2 = 0.58).

4.4.4.3 Creation of scales

Based on the CFA structure, scales were created using the SPSS 'Transform-Compute Variable' function, where scores for all items making up each scale were summed up. The following scales were created: Professional, Comfort, and Emotional. Table 4.16 lists the number of items and minimum and maximum achievable scores in each scale.

Table 4.16: Items, minimum and maximum scores in scales

Scales	Number of items	Minimum achievable score	Maximum achievable score
Professional	11	11	44
Comfort	9	9	36
Emotional	5	5	20

Given that in this study items were measured on a four-point Likert-type scale, in Table 4.16 the minimum score is calculated by multiplying the number of items by one. Equally, the maximum score is obtained by multiplying the number of items by four. Maximum scores serve as a baseline to interpret results from descriptive analysis. Descriptive and inferential statistics was run based on the newly created scales.

4.5 CONCLUSION

This chapter has documented the process and underlying rigorous techniques and procedures used to define and validate the structure of the new labour support questionnaires developed. The nurses' and midwives' questionnaire has four factors: professional support, communication, comfort and emotional support, while the mothers' labour support questionnaire has three factors: professional support, comfort and emotional support.

In the next chapter, findings and discussions about quantitative data from the survey are presented and discussed.

CHAPTER 5 : DATA ANALYSIS AND FINDINGS OF SURVEY

5. 1. INTRODUCTION

This chapter provides details of the data analysis and findings of the survey conducted to meet objectives three and four of the study. The objectives were:

- To explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities.
- To explore and describe the views of mothers about the importance of labour support practices they receive from nurses and midwives at public health facilities.

The purpose of the study was to establish the current state of the importance of labour support practices for mothers and nurses and midwives at public health facilities in Rwanda. To do this a scoping review was performed as phase one of the project. This determined that no suitable labour support questionnaire was available. In phase two of the study a labour support questionnaire was developed, and pilot tested. The developed labour support questionnaire was used to conduct a survey of 154 nurses and midwives and 684 mothers in labour wards in one referral/academic hospital and four district hospitals in Kigali City, Rwanda

Data were collected from nurses and midwives and mothers in postnatal wards. The data collected in section one of the questionnaire is socio-demographic data, while section two of the questionnaire includes mainly quantitative data from close-ended questions with Likert-type scale answers about labour support practice. The quantitative data were entered onto an Excel spreadsheet and, with the assistance of a statistician, further statistical tests and analysis were done. Using SPSS software (version 25) descriptive and inferential statistics were performed to create scales for labour support practice that included professional support, communication, comfort and emotional support. A second step of the analysis centered on the distribution of responses of the participants; this was performed in the four scales, based on the frequency to which participants agreed or disagreed with regards to labour support practice.

The third section of the labour support questionnaire was mainly qualitative, including an open-ended question. Nurses and midwives were requested to provide their comments about

factors that influence the provision of supportive care during labour and delivery. Mothers were requested to suggest what can be done to improve the supportive care provided during labour and delivery. All details relating to qualitative findings are presented in the next chapter.

5.2 NURSES' AND MIDWIVES' FINDINGS AND ANALYSIS

The data set for nurses and midwives was checked for missing data and unusual values. The frequencies and percentages of missing data for all items on the questionnaire was generated. No unusual values were observed in the statistical output related to missing data. To this end, for 190 questionnaires distributed among nurses and midwives, the response rate for the nurses and midwives was 81%. In other words, 154 respondents returned fully completed questionnaires, without any missing responses.

5.2.1 Descriptive analysis: Socio-demographic characteristics of the sample

A total of 154 fully completed questionnaires by nurses and midwives were considered for statistical analysis. Using SPSS software (version 25), descriptive and inferential results are presented with a focus on significant findings.

Table 5.1: Socio-demographic characteristics of nurses and midwives (N154)

Characteristics		Frequency	Percentage
Age	20-29	45	29.4
	30-39	82	53.6
	40-49	21	13.1
	50 years and plus	6	3.9
Gender			
	Female	115	76.7
	Male	39	23.3
Experience in labour and delivery ward			
	0-4 years	64	41.6
	10 years and plus	60	39
	5-9 years	30	19.4
Academic qualification			
	Diploma	123	80.4
	Bachelors' degree	29	18.3
	Master's degree	1	0.7
	Other	1	0.7
Professional qualification			
	General nursing	20	13
	Midwifery	134	87
Personal birth experience			
	No	29	86.2
	Yes	125	13.8
Health facility			
	District hospital	50	67.5
	Referral hospital	104	32.5

As Table 5.1 shows, the majority of respondents were in the age category 30-39 (53.6%), followed by the category of young people (20-29 years) who represent 29.4% of the total sample. This shows a young nursing and midwifery population in the area selected for the study.

In terms of gender, females (76.7%) outnumbered males (23.3%). This is representative of the distribution of gender within the nursing profession, which is female dominated. Most of the respondents had spent 0-4 years in labour and delivery wards (41.6%). Regarding academic qualifications, the vast majority of respondents held a diploma (80%) and had

completed a midwifery course (87%). Results also indicated that a large portion of respondents had had a personal birth experience (86.2%).

In relation to health facilities, most respondents came from district hospitals (67.7%), while 32% came from the referral hospital. This study included only one referral hospital (H-1), while four district hospitals (H-2, H-3, H-4 and H-5) were included.

Table 5.2: Age categories and years of experience in labour and delivery wards (N154)

Age	Years of experience in labour and delivery wards						
	0-4 years		5-9 years		10+ years		Total
	Frequency	% within age	Frequency	% within age	Frequency	% within age	Frequency
20-29	37	82.2	8	17.8	0		45
30-39	23	28	48	58.5	11	13.4	82
40-49	2	10	3	15	**16**	**75**	20
50 years +	2	33.3	1	16.7	3	50	6
Total	64	41.8	60	39.2	30	20	154

Table 5.2 illustrates that nurses and midwives in the age group 40-49 had more years of experience in labour and delivery wards. Hence, findings show that within this age category, 15 out of 20 (75%) of nurses and midwives had spent 10 years and more in labour and delivery wards.

The least number of nurses and midwives, n = 6 or 3.9%, were aged 50 years and above. In this age category, three (3) (50%) of nurses and midwives had spent 10 years and more in labour and delivery wards.

5.2.2 Inferential analysis

5.2.2.1 Ranking of scales for labour support provision

Descriptive statistics were used to indicate the importance of supportive care.

Table 5.3: Ranking of scales for labour support provision (N = 154)

Labour support scales	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Professional	20	40	36.46	3.82	-1.27	1.24
Communication	14	28	24.95	2.78	-0.9	0.53
Comfort	2	16	11.73	2.77	-0.52	0.41
Emotion	3	12	9.64	1.86	-0.84	0.86

Table 5.3 shows the ranking of labour support scales by nurses and midwives and indicates that nurses and midwives placed strong importance on the "providing professional or technical assistance" element of labour support, (M = 36.46, SD = 3.82, with a minimum value of 20 and a maximum value of 40).

Professional support involves practices such as teaching breathing, relaxation and pushing techniques, providing food and/or drinks to the mother, helping the mother to move and change positions, treating woman with respect, answering questions clearly, giving a continuous reassurance, maintaining confidentiality, massaging the lower back, engaging a labouring woman in conversation about progress of labour including delivery and keeping mother free from negative thoughts and promoting positive thoughts.

Nurses and midwives ranked the importance of communication second (M = 24.95, SD = 2.78,, with values ranging from 14 to 28). Communicative or expression-based support includes practices like explaining possible options and potential consequences to make choices;, providing confidence in mother's capability, making a mother feel safe, use of verbal and nonverbal expression, responding to the needs of mother, helping to cope with labour and delivery, and eliminating disturbances around mother.

The third ranked labour support feature was 'comfort support' (M = 11.73, SD = 2.77, with scores ranging from 2 to 16). Comfort is understood as labour support care practices such as

providing a warm shower, providing a mother with cold and/or heat packs, taking a mother out to the toilet; and using jokes while interacting with a mother.

Emotional support was ranked fourth in order of importance (M = 9.64, SD = 1.86, with scores ranging from 3 to 12). Emotional care involves the following practices: enabling mother to exercise her religious beliefs, providing guidance about the routine and procedures of the health facility and touching a mother and holding her hand.

5.2.2.2 Comparison of scales on socio-demographic features

The study investigated whether ranking of the importance of labour support practices i.e. professional, communication, comfort, and emotional support varied according to gender (male versus females), professional qualification (midwifery versus nursing), personal birth experience (whether the respondent had or had not had a personal birth experience), and the health facility (referral hospital versus district hospital).

To achieve this, a series of independent sample T-tests were run, and the equality of variance was assumed. Results showed no statistically significant difference ($p > .05$) between males and females, midwifery and nursing graduates, those with birth experience and those with no birth experience, those working in referral and district hospitals in their ranking order of the importance of professional support, communication, comfort and emotional support. In other words, for this study the gender, professional qualification, personal birth experience and the nature of the health facility were not relevant categories in influencing nurses and midwives' ranking order of the importance of labour support care.

To establish whether age, experience in labour and delivery wards, and academic qualifications were relevant categories to the perception of the importance of professional support, communication, comfort and emotional support, an analysis of variance (ANOVA) was run.

The results showed that there was a statistically significant difference between the age groups of nurses and midwives in the ranking of the importance of comfort: ($F(3,149) = 2.701$, $p = 0.048$). The Least Significant Difference (LSD) was found, while running a Post Hoc Test (Plichta and Kelvin, 2013), to confirm where the differences occurred between groups. The Post Hoc Test indicated that the difference was particularly observed between the following age categories: 20-29 years and 40-49 years, 30-39 and 40-49 years, 50 years and above and

40-49 years. The results indicated that nurses and midwives aged 40-49 perceived comfort (M = 10.25, SD = 2.88) as less important compared to other groups, i.e. 20-29 years (M = 11.76, SD = 2.95), 30-39 (M = 11.96, SD = 2.59), and 50 years and plus (M = 13.17, SD = 2.40). It indicated that nurses and midwives aged 50 and above showed more concern for comfort than others, as is illustrated in Figure 7.1.

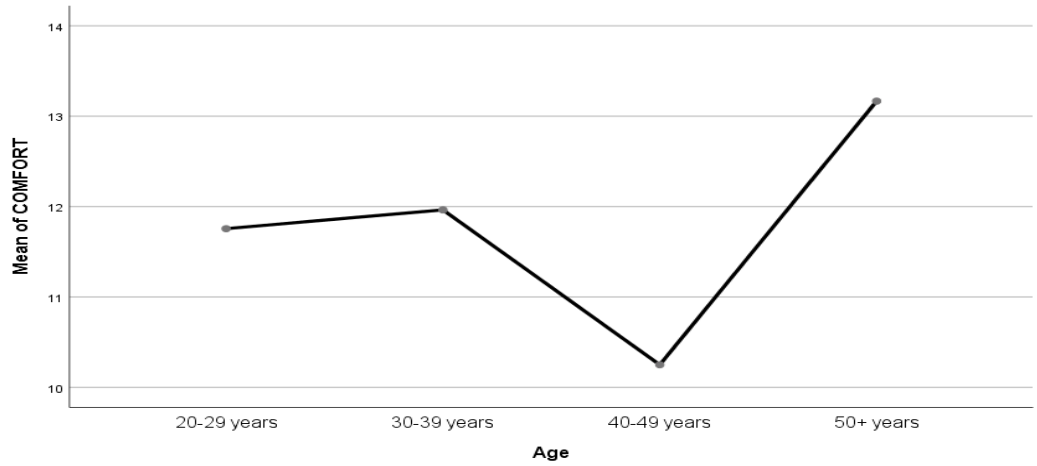


Figure 5.1: Comparison of the importance of comfort across age categories

It is noticeable from Figure 5.1 that nurses and midwives aged 40-49 consider the provision of comfort to mothers during labour and delivery less important. Reasons for such poor ranking remain unclear.

Regarding experience in labour and delivery wards, the findings revealed that there was a statistically significant difference between nurses and midwives in their appreciation of the importance of the labour support provision of comfort F (2,151) = 3.272, p = 0.041. The LSD Post Hoc showed a difference between nurses and midwives having 0-4 years (M = 12.17, SD = 2.88) and those with 10 years and above (M = 10.63, SD = 2.90) experience.

The difference was also noticeable between nurses and midwives who had spent 5-9 years (M = 11.80, SD = 2.46) and those with 10 years and above (M = 10.63, SD = 2.90) in labour and delivery wards. Results revealed that young nurses and midwives (0-4 years) and those with 5-9 years of experience in the labour and delivery ward ascribed more importance to comfort compared to those with long careers (10 years and above) as it is shown in Figure 5.2.

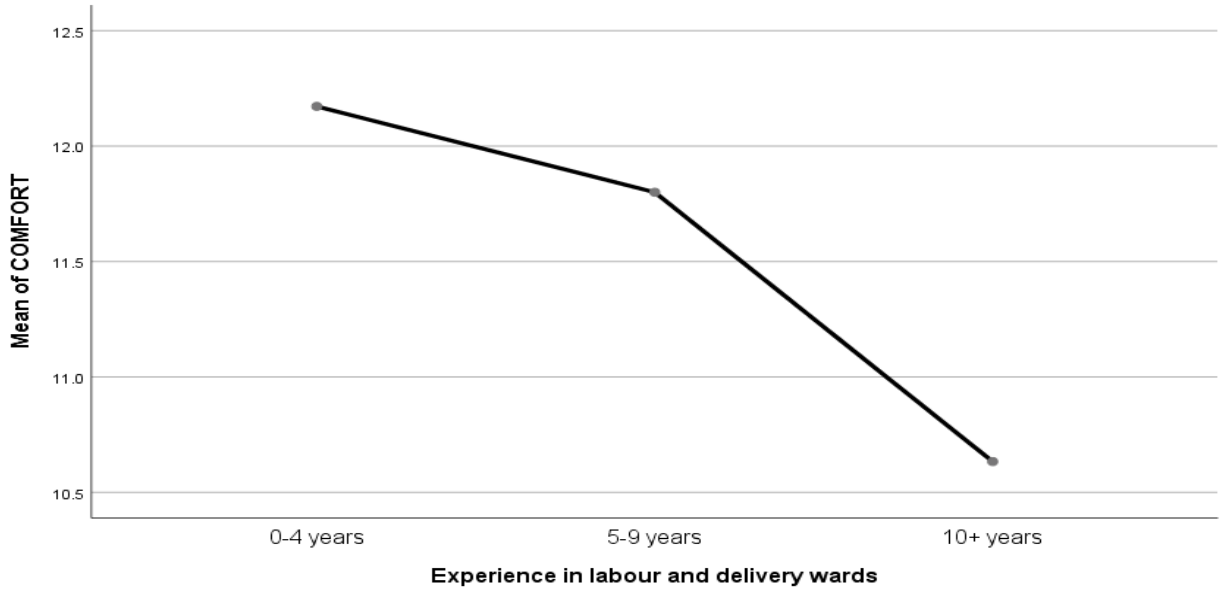


Figure 5.2: Comparison of the importance of comfort based on years of experience in the delivery and labour wards

Figure 5.2 shows that as nurses and midwives spent more time in the labour and delivery ward, their perceptions of the importance of the provision of comfort diminishes.

Concerning academic qualifications, the category of nurses and midwives holding a Masters' and other degrees had one participant each. Therefore, it was not deemed appropriate to run an ANOVA. Instead, a T-test (Plichta and Kelvin, 2013) was run (the equality of variance was assumed) to establish whether diploma holders differ from bachelor's degree holders in their appreciation of the importance of the components of labour support provision, i.e. professional, communication, comfort, and emotional. Results showed that there was no statistically significant difference (p>.05) between diploma holders and bachelor's degree holders in their appreciation of the importance of the features of labour support provision.

Descriptive and inferential analysis showed two outstanding findings. Firstly, the age of the nurses and midwives was a relevant category for labour support provision understood in terms of comfort. Secondly, this study showed that the importance of the provision of comfort diminished as nurses and midwives spent time in labour and delivery wards. The time spent in labour and delivery wards was the second relevant category to labour support care provision.

5.2.3. Nurses and midwives second step analysis

While the first analysis was chiefly centred on items under the factors, the second step in analysis of the data focuses on participants, i.e. the distribution of nurses and midwives' responses on the basis of the degree of importance attached to labour support practices: low, moderate and high. It is worth noting that this approach has been used in other studies engaged with health professionals (Didarloo and Khalkhali, 2014).

Table 5.4: Classification framework of nurses/midwives according to their views of the importance of labour support practices

Scales	Number of items	Minimum achievable score	Maximum achievable score	<50%	50%	75%	>75%
Professional	10	10	40	0-19	20	30	31-40
Communication	7	7	28	0-13	14	21	21-28
Comfort	4	4	16	0-7	8	12	13-16
Emotional	3	3	12	0-5	6	9	10-12

The classification battery is as follows: a score of less than 50% means ‘low importance’ to labour support practice, a score between 50% and 75% suggests a ‘moderate importance’ to labour support practice, and a score above 75% indicates ‘high importance’ attributed to the particular labour support practice. Drawing on this principle, frequencies and percentages of nurses and midwives falling in each group under low, moderate and high importance schemes were developed.

Table 5.5: Distribution of nurses/midwives according to their perceptions of the importance of labour support practices (N = 154)

Labour support scales	Low importance Frequency (%)	Moderate importance Frequency (%)	High importance Frequency (%)
Professional	0 (0%)	16(10.4%)	138(89.6%)
Communication	0 (0%)	23(14.9%)	131(85.1%)
Emotional	5 (3.2%)	65(42.2%)	84(54.5%)
Comfort	11 (7.1%)	84(54.5%)	59(38.3%)

The results presented in Table 5.5 show that a majority of nurses and midwives attached high importance to professional support (89.6%) and communication (85.1%). On the other hand, there was a lower number of nurses and midwives who attached high importance to

emotional support (54.5%) and comfort (38.3%). Having had a personal birth experience was not a relevant aspect in influencing nurses and midwives' ranking order of the importance of labour support care.

5.3 MOTHERS' FINDINGS AND ANALYSIS

The data set for mothers was checked for missing data and unusual values and descriptive statistics for all items on the questionnaire was generated. No unusual value was observed in the descriptive statistics output.

The response rate was 83.3% for 778 questionnaires distributed among mothers in post natal ward and 648 respondents returned completed questionnaires. However, some respondents did not complete fully all items of the mothers' questionnaire; there were missing responses on 23% of returned questionnaires. The missing response rate was linked to miscommunication between the new research assistant and postnatal women about value of full completion of all questions provided on self-administered questionnaires. To control missing data (Field, 2009), the number of acceptable missing data elements was restricted to 25% of total items. Since the mothers' questionnaire comprised 25 items, measured on a four-point Likert-type scale, the following formula was applied: 25*25/100 = 6.25. Respondents who missed more than 6 items were excluded from the analysis. This excluded 155 questionnaires from a size of 648 returned questionnaires to leave 493 questionnaires to be analysed. The remaining sample of 493 participants was statistically enough to achieve robust results.

Descriptive and inferential statistics were used to analyse created scales including professional, comfort and emotional support. In what follows, descriptive and inferential results are presented with a focus on significant findings.

5.3.1. Descriptive Analysis: Socio-demographic characteristics of the sample

Using SPSS software (version 25), descriptive and inferential results are presented with a focus on significant findings.

Table 5.6: Socio-demographic characteristics of the mothers (N = 493)

Characteristics		Frequency	Percentage
Age	= < 20 years	33	6.7
	21-30 years	284	57.6
	31-40 years	165	33.5
	>40 years	11	2.2
Marital status			
	Married	243	49.7
	Unmarried with a partner	196	40.1
	Unmarried without a partner	48	9.8
	Divorced	2	0.4
Number of pregnancies to viable foetus			
	Primiparous	289	59.7
	Multiparous	195	40.3
Educational level			
	Primary school	226	46
	Technical/vocational school	59	8.4
	University	41	29.9
	Post-Secondary School	18	3.7
	Secondary school	147	12
Area of residence			
	Urban	114	23.4
	Rural	374	76.6
Health facility			
	Referral hospital	44	8.9
	District hospital	452	91.1
Employment			
	Employed	60	12.8
	Student	119	25.5
	Unemployed	260	55.7
	Self-employed	28	6

As table 5.6 shows, the majority of mothers who participated in the study were aged between 21 and 30 (57.6%), and a further 33.5% were in the age category 31-40. Most of the women were married (49.7%), while 40.1% were unmarried women living with a partner. Multiparous women outnumbered primiparous ones (59.7% and 40.3%, respectively).

Most women had a primary education (46%). Given the area of residence, the participants were predominantly located in urban areas (76%), although rural areas were represented (23.4%).

A large proportion of the mothers were surveyed at district hospitals (91.1%), while those surveyed at the referral hospital represented only 8.9%. The majority of mothers were unemployed (55.7%), followed by students (25.5%).

5.3.2. Inferential analysis

The study sought to explore labouring women's perceptions relating to the importance of supportive care provided by nurses and midwives during labour. Statistical analyses were used to identify the level of ranking of labour support scales by order of importance. Table 5.7 shows the ranking of labour support scales by women.

Table 5.7: Ranking of Labour Support Scales by mothers

Labour support scales	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Professional	11	44	39.48	5.02	-1.28	2.18
Comfort	9	36	29.85	4.75	-0.54	0.51
Emotional	5	20	16.7	2.88	-0.56	-0.15

Table 5.7 exhibits the ranking of the elements of labour support. The mothers ranked 'receiving professional assistance" highest (M = 39.48, SD = 5.02, with the minimum value of 11 and the maximum value of 44). As outlined in a previous chapter on tool development, for a labouring woman, professional support entails practices such as responding to her needs, making her feel safe, treating the mother with respect, engaging the woman in conversation about progress of labour including delivery, answering her questions clearly, spending time with the mother, giving the woman continuous reassurance, helping the mother to cope with labour and delivery, maintaining confidentiality, explaining possible options and potential consequences to make choices, and teaching the mother breathing, relaxation and pushing techniques.

The mothers rated comfort second (M = 29.85, SD = 4.75, with scores ranging between 7 and 36). Comfort during labour involves the following caring practices: taking the mother out to the toilet, helping the mother to change and move positions, eliminating disturbances around her, providing the mother with food and drinks, providing her with cold and/or heat packs, massaging her lower back, touching the mother and holding her hand, providing her with a

warm shower, and giving guidance to the mother about the routine as well as procedures of the health facility.

The mothers rated emotional support lowest (M = 16.70, SD = 2.88, with scores ranging between 5 and 20). Emotional support involves keeping the woman free from negative thoughts and promoting positive thoughts, enabling the mother to exercise her religious beliefs, providing the mother with confidence in her own capabilities, using verbal and nonverbal expression, and using jokes while interacting with the mother in labour.

5.3.3. Comparison of scales on socio-demographic features

This study attempted to establish whether mothers' views of the importance of labour support practices i.e. professional, comfort, and emotional support varied across demographic features, including the number of viable pregnancies arrived at term, the area of residence, and the health facility. The T-test was run, given that the quality of variance was relatively equal.

T-test results revealed that there was no statistically significant difference (p>.05) between primiparous and multiparous, between mothers in rural and urban areas, mothers using district and those using a referral hospital in their perception of the importance of labour support care provision. In other words, the number of pregnancies arrived at term, the area of residence, and the health facility did not influence the mothers' perception of labour support.

ANOVA was also used to investigate whether a mother's age, marital status or level of education influenced her perception of the importance of labour support. ANOVA results indicated that there is only a statistically significant difference between mothers regarding their level of education in appreciating the importance of labour support especially professional support: $F(4,486) = 3.49$, $p = 0.008$). The LSD Post Hoc revealed that the difference was found between mothers with primary education and those with technical and vocational school education; and mothers with primary education compared to those with secondary education.

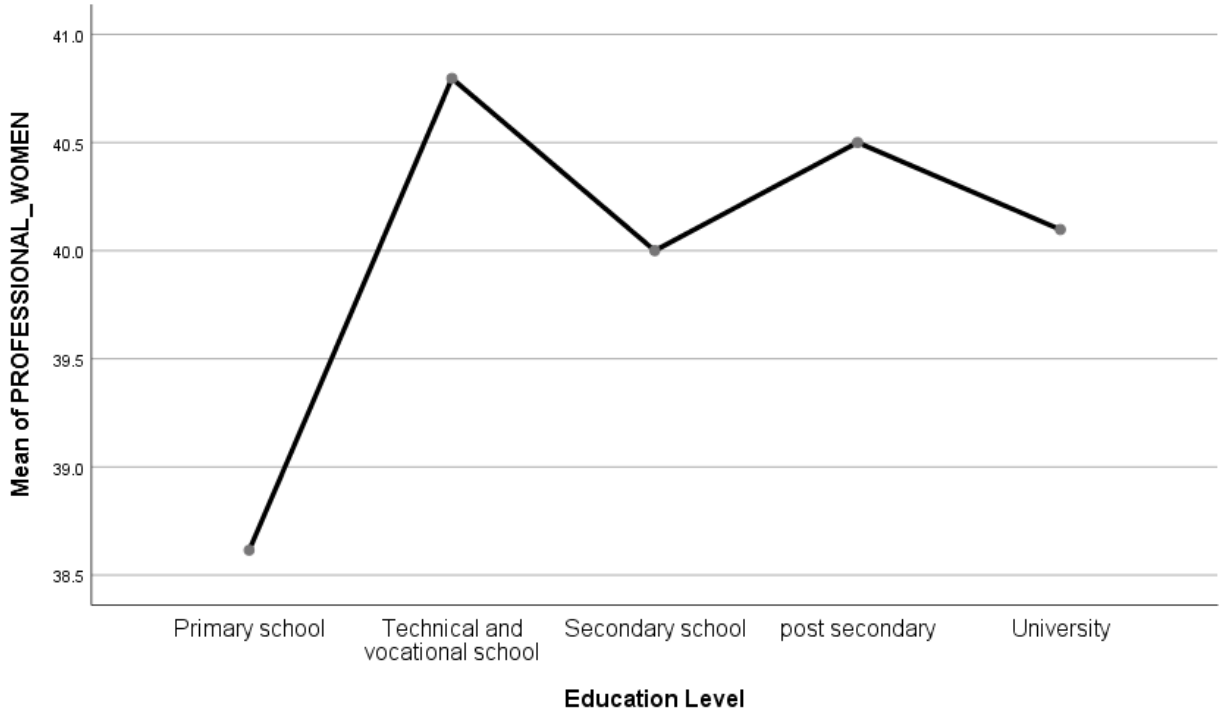


Figure 5.3: Comparison of the importance of professional support across mothers' level of education

Figure 5.3 shows that mothers with primary education attribute little importance to professional support (M = 38.62, SD = 5.58) compared to their counterparts (i) who completed technical and vocational education (M = 40.80; SD = 4.17), and (ii) mothers with secondary education (M = 40.00; SD = 4.32). The level of education is, therefore, a relevant category in mothers' appreciation of the importance of labour support features.

5.3.4. Mothers second step analysis

While the first analysis was chiefly centred on scales, the second step of analysis focused on participants, i.e. the distribution of mothers in groups on the basis of the degree of importance they attributed to labour support practices: low, moderate and high.

Table 5.8: Classification framework of mothers according to their perceptions of the importance of labour support practices

Scales	Number of items	Minimum achievable score	Maximum achievable score	<50%	50%	75%	>75%
Professional	11	11	44	0-21	22	33	34-44
Comfort	9	9	36	0-17	18	27	28-36
Emotional	5	5	20	0-9	10	15	16-20

The classification battery is as follows: a score <50% means 'low importance' to labour support practice, a score between 50% and 75% suggests a 'moderate importance' to labour support practice, and score above 75% indicates 'high importance' attributed to labour support practice. Drawing on this principle, frequencies and percentages of mothers falling in each scale under low, moderate and high importance schemes were developed.

Table 5.9: Distribution of mothers according to their perceptions of the importance of labour support practices (N = 648)

Labout support scales	Low importance Frequency (%)	Moderate importance Frequency (%)	High importance Frequency (%)
Professional	1(0.2%)	127(20.2%)	501(79.7%)
Emotional	10(1.6%)	240(38.2%)	379(60.3%)
Comfort	16(2.5%)	283(45.0%)	330(52.5%)

As Table 5.9 shows, a large proportion of mothers attached strong importance to professional support (79.7%). Mothers attached less importance to emotional support and comfort (60.3% and 52.5%, respectively).

5.4. DISCUSSION OF THE FINDINGS OF THE SURVEY

5.4.1 Introduction

In this section, the key findings of the survey about the views of nurses, midwives and mothers are discussed in relation to the third and fourth objectives of the study:

- To explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities

- To explore and describe the views of mothers about the importance of labour support practices they receive from nurses and midwives at public health facilities.

The variables that depict the provision of labour support practice are analysed and discussed. These include demographic characteristics of mothers and nurses and midwives, such as age, years of experience and education. The ranking of labour support scales including professional, communication, emotional and comfort by mothers, nurses and midwives are also presented and discussed.

5.4.2. Demographic characteristics

When examining the characteristics of nurses and midwives who responded, the findings showed that the majority (76%) of respondents were female. This illustrated that the midwifery and nursing careers were still female dominated professions in Rwanda, as in the rest of the world (Zamanzadeh et al., 2013, Limiñana-Gras et al., 2013, Stott, 2007). Similarly, the International Council of Nurses reported that women are predominant in the nursing workforce at a service delivery level in Sub-Saharan Africa (Munjanja et al., 2015).

Apart from gender, the findings revealed a young population of nurses and midwives located in the age category of 30-39 (53.6%) with a large proportion of respondents (41.6%) holding a midwifery diploma and having spent 0-4 years in labour and delivery wards. This showed that the allocated staff in labour and delivery wards was composed of relatively young and newly qualified nurses and midwives. This could be explained by the fact that the Government of Rwanda had recently invested in midwifery and nursing training at diploma level. Before 1994, there was no training of nurses and midwives at university level. Post 1994, after completion of midwifery training, the first cohorts of graduate nurses and midwives were hired and deployed in public maternal and child health services, which process is ongoing to increase skilled birth attendance (Rwanda Health Department, 2016).

A large proportion of mothers participating in this study (46%) have only primary education. These findings are consistent with the results of the Demographic Health survey conducted in Rwanda in 2015 which stated that two-thirds of women have primary education across the country (National Institute of Statistics of Rwanda, 2015).

5.4.3 Provision of labour support

The findings indicated that midwives and nurses ranked the importance of professional and communication support highly, while a majority of mothers (79.7%) attached strong importance to professional support. These findings were corroborated by Ronnerhag et al. (2018) who, in their study of women's experience of safe childbirth in maternity care, argued that the presence and supportive behaviours of a health care practitioner, were perceived by women as professional, communicative and meaningful for them in order to engender trust and to feel safe during labour and delivery (Ronnerhag et al., 2018).

Evidence in this study indicated a low ranking for the importance of the comfort and emotional support by both nurses-midwives and mothers.

Factors influencing labour support provision include staffing, space and equipment, which require investment by the health facilities with related budget implications. For instance, this study took place in Rwanda where resources are still limited for maternity services and the sector in general (World Health Organization, 2015a). The constrained working environment, including limited resources in Rwandan health institutions, may well have an impact on the implementation of labour support practice. A study conducted on challenges in day to day midwifery practice in Tanzania indicated that provision of appropriate childbirth care in developing countries was principally limited by insufficient resources including lack of enough personnel, materials and facilities (Bremnes et al., 2018).

On the other hand, a study's findings of Irish women's experience with care in labour, indicated positive experiences by women linked to emotional and comfort support during labour and delivery (Cornally et al., 2014). It can be argued that the context of labour support provision can influence women's perceptions about supportive care they received depending on resources available at the health facility. The more resources were available at health settings, the greater their expectations for quality labour support.

Furthermore, while comparing socio demographic characteristics with factors of labour support, the findings of this study indicated that mothers with primary education gave a low ranking to the importance of professional support compared to other levels of education including university, high and technical schools. While the reason for these findings is not clear, it could possibly be due to the lack of awareness about the importance of professional support or simply because of lack of experience with the provision of professional support.

The literature indicates that a lower education level can impact negatively on women's capacity to value and use maternal health services appropriately. The more educated women are, the more they become aware and responsive to health services (Tsala Dimbuene et al., 2018, Tuncalp et al., 2014, Kwaleyela et al., 2019).

In this study, the majority of nurses and midwives (75%) who have spent more than 10 years in labour and delivery wards were in the age group 40-49 years, and they showed a limited importance for comfort compared to other age groups. This could be due to career fatigue and psychological challenges associated with the forties that negatively affect the provision of labour support care. Wheatley stated that excessive nursing fatigue leads to a greater risk of burnout and loss of empathy for clients (Wheatley, 2017). Similarly, a study carried out in Sweden indicated that an excessively high workload and stress constitute a big barrier for the implementation of women-centred care during the antenatal, delivery and postnatal periods (Lundgren et al., 2019).

Finally, the findings showed that young nurses and midwives with 0-4 years and those with 5-9 years of experience in labour and delivery wards rated comfort as more important compared to those with long careers (10 years and plus). It might be that young nurses and midwives, who are mainly in their early- or mid-career, are enthusiastic about their work while those with 10 years and plus experience might have fallen prey to fatigue and routine. A study conducted in Mozambique on the working conditions of nurses and midwives supports this idea, and showed that long exposure to a working environment with limited resources and high levels of job dissatisfaction prevented the nurses and midwives from behaving professionally, and created frustration among them (Adolphson et al., 2016).

5.5 CONCLUSION

In this chapter, the findings of the survey were analysed and discussed. In light of the survey findings, the years of experience and age of nurses and midwives should be taken into consideration by the health facilities management before establishing the duty roster for nurses and midwives to enhance the quality of supportive care. Tailored supportive care can increase awareness of the importance of labour support practices among labouring women. In the next chapter, findings and discussions about qualitative data from the open-ended questions of the survey are presented and discussed.

CHAPTER 6 : QUALITATIVE FINDINGS AND DISCUSSION OF SURVEY

6.1 INTRODUCTION

This chapter describes the combined findings of the answers to the open-ended questions put to the mothers and nurses and midwives. Latent content analysis was conducted to identify categories and subcategories that emerged from the participants' answers of to develop meaning about the particular topic under study (Hsieh and Shannon, 2005). Midwives and nurses were asked the following open-ended question *"What factors influence the provision of supportive care during labour including delivery at your workplace"*. Postnatal women were asked *"What do you suggest can be done to improve the supportive care provided during labour and delivery"*.

The codes in this chapter refer to individual participants, for example, participant KB 01, where KB stands for one hospital among five hospitals included in this study and 01 represents the number of the participant.

6.2 FINDINGS

6.2.1 Nurses' and midwives' responses

Two categories with six sub-categories each were identified during analysis, as illustrated in the Table 6.1 below.

Table 6.1: Nurses' and midwives' categories and sub-categories

Categories	Sub-categories
1. Factors influencing labour support	1.1 Staffing
	1.2 Working environment
	1.3 Equipment
2. Practice of labour support	2.1 Advocacy
	2.2 Interpersonal relationship
	2.3 Physical needs

6.2.1.1 Factors influencing labour support

This category showed issues identified by nurses and midwives that they believed influenced the possibility of providing supportive care. This category has three sub-categories, namely staffing, working environment and equipment.

6.2.1.1.1 Staffing

Staffing refers to nurses and midwives as providers of labour support at health facilities. Participants indicated that their shortage severely limited the provision of labour support. The combination of staff shortage and work overload led to difficulties in providing supportive care. Midwives and nurses reported that work overload negatively affected their ability to assist adequately the women in labour, as illustrated by participant KB 31, *"Most of the time we are overloaded because we receive many clients and we do not have time to give them proper labour support."*

Participants also reported that a limited number of midwives and nurses were assigned to attend many tasks, including provision of labour support, for a high number of women in labour wards. Shortage of staff was an indicator of work overload, which made the provision of supportive care during labour and delivery impossible. Participant MS 21 explained, *"Heavy workload and many tasks assigned to nurses and midwives. Therefore, we are not able to provide supportive care*."

6.2.1.1.2 Working environment

Working environment refers to the setting and organizational working conditions, including institutional support that nurses and midwives experienced during the provision of labour support at health facilities. Midwives and nurses raised the issue of infrastructure of maternity services, which posed a challenge to give supportive care to labouring women. There was a need to have enough space to provide labour support to labouring women. Participant KH 17 stated, *"Need of enough space to allow labouring women moving around and making relaxation. Imagine having twenty women in one labour room … Not easy to assist them."*

Some important factors related to working conditions expressed by participants included teamwork, collaboration and motivation strategies for staff to encourage the practice of labour support. Participant KB 09 said, *"Teamwork influence us to provide good care to*

women in labour." Participant KH 05 stated, *"Staff collaboration and effective communication among staff."*

Midwives and nurses valued the continuous training of staff for better implementation of support offered to mothers during the childbirth process. Participant CK 26 said, *"Nurses and midwives, we need continuous training on supportive care."*

6.2.1.1.3 Equipment

Participants were not specific about the equipment to which they referred, although it could reasonably include material, devices and linen used in labour and delivery rooms. Participants were concerned about equipment which enabled them to offer appropriate supportive care to women in the process of labour and delivery, as illustrated by participant MH 26, "*Need of equipment to keep privacy for labouring women."*

6.2.1.2 Practice of labour support

When asked the question "*What factors influence the provision of supportive care during labour including delivery at your workplace*" midwives and nurses elaborated on what they understood about the practice of labour support. This category of practice of labour support focused on what midwives and nurses thought that may contribute to the provision of labour support. This category included three sub-categories, namely advocacy, interpersonal relationship and physical needs.

6. 2.1.2.1 Advocacy

Advocacy refers to the ability of midwives and nurses to claim and defend the rights of women during the labour and delivery process. Midwives and nurses emphasized that women needed continuous assistance while they are in labour room. Participant MS 18 said, *"Being with woman during labour and give her continuous reassurance."*

Male involvement in childbirth care was raised by midwives and nurses and they reported that mother's partner should be given an opportunity to assist his wife in the labour and delivery wards. Participant KB 16 commented on husbands' involvement, *"Allow husbands to be with their wife during labour if they request it."*

Midwives and nurses expressed their appreciation for the support provided to women in labour from a companion of choice at birth. Participant CK 50 stated, *"Companion at birth by the next of kin or relative to the choice of labouring woman.*"

Respect and confidentiality for women during labour and delivery were valued by many midwives and nurses. Participant KH 06 said, "*Always treating woman with respect during labour and delivery*". Another participant KH 01 stated, *"Keeping confidentiality for clients in labour and delivery room."*

6. 2.1.2.2 Interpersonal relationship

Interpersonal relationship refers to the ways in which midwives and nurses communicate and interact with women in labour and delivery wards. While providing care to woman during labour and delivery, the midwives and nurses reported the need to establish communication and a relationship with women in order to engage their participation in all care offered to them. Participant KB 03 said, *"Engage woman in conversation about progress of labour including delivery."*

Participants stated their concern about the quality of interactions and communication between midwives and nurses and mothers for the provision of supportive care. Participant KH 07 stated, *"Need of effective communication with women during labour and delivery*."

6. 2.1.2.3 Physical needs

Physical needs included nourishment and practical measures used by midwives and nurses to provide comfort to women in labour and delivery rooms. Midwives and nurses expressed the need for some measures for pain control, including back massage and pain relief during labour and delivery. Participant CK 41 said, *"Use of pain relief during labour and delivery if necessary."* Participant KB 03 recommend back massage, *"Provide the back massage for women in labour."*

Nourishment for women during labour and delivery was raised by midwives and nurses who recommended to permit drink and food in labour and delivery wards. Participant KB 05 stated, *"Allowing drinks and food for women in labour ward."*

6.2.2 Mothers' responses

From the mothers' responses two categories with six sub-categories were identified during analysis, as shown in Table 6.2 below:

Table 6.2: Mothers' categories and sub-categories

Categories	Sub-categories
1. Elements of supportive care	1.1 Coping with labour
	1.2 Interpersonal relationships
	1.3 Advocacy
2. Factors impacting provision of supportive care	2.1 Staffing
	2.2 Resources
	2.3 Nourishment

6.2.2.1. Elements of supportive care

The mothers highlighted elements of supportive care that could be improved by nurses and midwives while assisting during the labour and delivery process. This category has three sub-categories: coping with labour, interpersonal relationships and advocacy.

6.2.2.1.1 Coping with labour

Coping with labour refers to how labouring mothers were able to deal successfully with normal birth experience through supportive care offered by nurses and midwives and others.

Apart from the support given by midwives and nurses, participants reported the value of having a birth companion during labour and delivery. Participant MH 010 said, *"Having assistance from female friend during labour and delivery."* Two participants expressed a similar idea of a birth companion, especially when health care providers were not available. Participant KB 66 stated, *"Allow my companion or my husband to be with me especially when nurse/midwives are busy with other women,"* and participant KB 003 said, *"Call my relative to be with me instead to stay alone in labour room."*

Participants indicated the issue of taking all mothers' concerns into consideration, and they recommended that all mothers in labour should be given equal respect by midwives and nurses. Participant MH 030 explained, *"Never ignore or take as simple the complaint of*

woman in labour," and participant CK 046 stated, *"Offer equal respect to all women without considering their social economic conditions."*

Participants expected the midwives and nurses to show and give them more compassion, assistance and encouragement while they were in the labour room. Participant KH 01 stated, "*Try to be more compassionate with labouring woman"*. Participant KH128 said, *"Improve assistance offered by midwives and nurses to labouring woman,"* and participant KH 131 stated*," More encouragement for women in labour room."*

Participants commented on the importance of physical assistance to the comfort aspect, also, mobilization, relaxation and pain management during labour and delivery. Participant KB 146 said, *"Provide physical assistance during labour and while pushing the baby."* Participant KB 109 stated, *"Assist woman to relax and walk and around during labour."* Participant CK 016 said, *"Administer pain relief during labour when contractions seem to be excessive."*

6.2.2.1.2 Interpersonal relationships

Interpersonal relationships are all about communication between labouring women and midwives and nurses. Labouring women expected midwives and nurses to provide good communication, interaction, information and advice related to the childbirth process. The majority of participants expressed the need for encouraging interactions and effective communication between labouring women and labour support providers. Labouring women indicated their desire to receive instructions in gentle way. Participant KH 94 stated, *"Kindly provide instructions related to labour management and not get tired to explain to me what will follow."* Another participant talked about the issue of shouting. Participant MS 023 reported, *"Avoid shouting on women during labour and delivery."*

Some mothers reported the need to receive enough updates related to the status of labour and delivery process. Participant KB 100 said, *"Give me full information about progress of labour,"* and another woman wanted to know findings after her examination. Participant KH 080 stated, *"Communicate results of blood tests and cervix examination."*

Mothers expressed their desire to be more engaged in the process of management of labour, including participant KB 68 who stated, *"Give information about how to cope with intensive contractions."* Participant KB 57 stated, *"Convince me why contractions are so painful."* The

mothers wanted all details about actions to be performed. Participant MH 17 said, "*Explain to me which procedure is being done on me."* One participant wanted explanations about the experience of labour. Participant KB 96 said, *" Explain to me why I have to experience labour and not get caesarean section as I wished it."*

Counselling was raised by mothers as an element of supportive care. Participant KB 97 said, *"I needed counselling about time to spend on labour."* Education was also mentioned as essential for women. Participant KH 34 said, *"Education about breast feeding and family planning."*

Participants reported concerns related to the continuity of care during handover of supportive care among nurses and midwives. Participant CK 006 said, *"Provide clear shift report to on coming team to avoid repetition of same information asked to clients"*. Harmonisation of supportive care was valued by women. Participant WMS 011 said, *"Harmonise supportive care among nurses and midwives to avoid miss understanding between staff and clients*."

One participant talked about the importance of a caring attitude at health facilities. Participant CK 038 stated, *"I could feel happy when I could receive customer care from admission to discharge."*

Another issue indicated by one participant was about badge identification for midwives and nurses on duty. Participant MS 012 stated, *" Every nurse or midwife should carry her/his badge for easy identification."*

6.2.2.1.3 Advocacy

Advocacy as expressed by with the mothers concerned raising their voices about the areas and conditions in which they desired to be cared for while they were experiencing the labour and delivery process at health facilities.

Participants reported their wishes related to the extension of the infrastructural aspect for labouring women at a health facility. Participant KH 021 said, *"Building enough space to accommodate women in labour."* Participant KB 109 indicated the same issue and she stated, *"More rooms for women in labour."*

One participant raised an issue related to the use of cell phones while caring for women in labour. There was a reminder about paying attention to the mothers' care and not being

distracted. Participant MS 011stated, *" Not use cell phone while caring for labouring woman."*

Concern about medical aid and consultation fees information requested at admission unit before receiving the labouring woman was indicated by one participant. There was a need to value the client first and make a follow up of invoice after providing needed care for women in labour. Participant MS 050 said, *"Do not ask medical insurance or money for consultation before receiving and checking the reason for coming at admission unit."*

Two participants reported behaviours which did not promote the provision of supportive care including delays. Participant KH 120 said, "*Staff at admission unit delayed in receiving clients."* Polite manners were pointed out as important with regards to any inconvenience caused when delay happened. Participant CK 027 stated, *"Staff did not apologize for delay experienced by women while they expected to receive supportive care from admission service"*.

6.2.2.2 Factors impacting provision of supportive care

Most of the mothers mentioned positive and negative factors affecting the provision of supportive care. Mothers in the postnatal ward reported the factors that they considered needed more attention for better implementation of supportive care by midwives and nurses at health facilities. This category has three sub-categories namely staffing, facilities and nourishment.

6.2.2.2.1 Staffing

Staffing refers to midwives' and nurses' quantity, behaviours and ability to offer supportive care among labouring women at health facilities. Participants valued the importance of enough midwives and nurses at a health facility to assist women in the labour ward appropriately. Participant MS 007 stated, *"Increase number of midwives and nurses to timely take care for all admitted women in labour ward."*

Mothers reported that training of midwives and nurses was an important element for the provision of supportive care. Participant CK 049 said, *"Provide regular training for nurses and midwives to harmonize provision of supportive care."* They also appreciated the work done by midwives and nurses. Participant MS 001 stated, *"Nurses and midwives deserve motivation (credit) due to the hard work they do in labour and delivery wards."*

6.2.2.2.2 Resources

Resources include equipment, material and space, which enhance the provision of supportive care at health facilities. Participants reported lack of comfort space and overcrowded labour room as result of the shortage of labour and birth rooms. Participant KH 117 stated, *"Small space and labouring room is always overcrowded."* Participant KB 112 said, "*I felt bad when I missed enough space to move around."*

Many participants were concerned about the hygienic environment during labour and delivery process. They indicated the need to increase the number and accessibility of bathrooms with enough water in labour wards. Participant CK 008 stated, *"Increase bathrooms and sufficient water in labour ward."* Participant KB 55 said, *"The birth room was not nearby, and I could not go there with contractions."*

Participants expressed their worries about insufficient material and equipment in labour wards. They raised the issue of sharing one bed while they could have different health issues. There was a risk of contamination when sharing one bed. They reported their desire to increase the number of chairs and beds in labour wards. Participant KH 149 stated, *"Increase number of beds and chairs according to the demand of women in labour."* Participant MS 015 said, "*Not comfortable for two labouring women to share one bed while they have different medical conditions."*

6.2.2.2.3 Nourishment

Two women mentioned the issue of lack of provision of food and drink while they were experiencing labour at health facilities. They commented about availability of a restaurant. Participant KH 004 said, *"Need of clients' restaurant within hospital to get food overnight"*. Participant KH 106 commented that a place near to the health facility to obtain food and drink would be useful and stated, *"Need of a near place to buy food and drink during labour process*."

6. 3 DISCUSSION

6.3.1 Introduction

This section discusses the combined findings of the answers to the open-ended questions put to the mothers and nurses and midwives, and demonstrates support found in the literature to corroborate the findings. This is discussed in two sections namely factors influencing labour support and elements of supportive care. The former refers to factors that either positively or negatively impact on the ability of the midwives and nurses to provide supportive care. The latter refers to the aspects of care that the participants believe constitute labour support.

6.3.2 Factors influencing labour support

When examining the findings of the qualitative data collected from mothers and the nurses and midwives, it was clear that both groups identified similar factors that they believe influence the capacity of midwives and nurses to deliver labour support. Both groups reported issues related to staffing in public health facilities and argued that the limited number of midwives and nurses impacts negatively on their ability to adequately assist labouring women. This view is supported by Spencer et al. (2018) who, after conducting a study in a South African health care setting, concluded that appropriate staffing was essential for nurses to assist women in the process of labour and delivery, and to offer them possible supportive care according to their needs (Spencer et al., 2018).

Participants indicated that the ability of nurses and midwives to provide labour support to mothers was limited by the many tasks assigned to them. In this regard nurses and midwives experienced a lack of time and high demands from women in the labour and delivery wards, which hindered the provision of labour support. Similar findings were found in Ghana where Avortri and Modibas' study (2018) reported an inability of staff to offer appropriate care to women during the childbirth process, because of the high number of women in labour and delivery wards (Avortri and Modiba, 2018).

Further evidence of the relationship between shortage of staff and poor labour support was provided in Cochrane review (Bohren et al., 2017) about factors that influence the provision of intrapartum and postnatal care by skilled birth attendants in low- and middle-income countries. The synthesis indicated that inadequate staffing increased work overload among

skilled birth attendants and resulted in women being given poorer care (Munabi-Babigumira et al., 2017).

According to the World Health Organization, the problem of the global nursing and midwifery shortage affects both developing countries as well as many high-income settings. The health sector in Rwanda, where this study was undertaken, experiences severe shortages of health care professionals, especially midwives (World Health Organization, 2015a). While there is a limited number of qualified midwives to be deployed in maternity services, general nurses attend to women in labour and delivery wards at most public health facilities in Rwanda. The report of the National Institute of Statistics in Rwanda, cited in Bazirete et al.'s study, confirmed that 91% of deliveries took place at health facilities. The same report indicates the shortage of midwives available in maternity services and 70% of deliveries were attended by nurses in Rwandan Public Health facilities (Bazirete et al., 2017).

Apart from the problems related to staffing, another factor that was identified by both mothers and nurses and midwives, and when asked about factors impacting on supportive care, was that of the physical working environment. Matters related to the working environment were reported by participants and consisted on space, equipment and other supplies that influence the provision of supportive care. Midwives and nurses indicated that they experienced overcrowded labour and delivery wards which posed a challenge to offer supportive care to labouring women. Similar results were found in Tanzania in a study conducted by Bremnes et al. (2018), which indicated poor physical structure and inadequate space impacted adversely on the provision of childbirth care (Bremnes et al., 2018).

Several examples of a lack of facilities that impact on their comfort needs including were raised by participants. These included a lack of space during labour, few bathrooms and a lack of space or facilities to enable birth companion and relatives to be present during labour. From the participants' perspective, infrastructural concerns found in this study constituted obstacles to the provision of supportive care. The findings of this study are consistent with those found in several studies indicating the importance of space in the labour ward. For instance, Spencer et al. (2018) reported that a shortage of infrastructure did not allow labouring women to be with their birth companion, and Pitchforth et al. (2010) stated that a lack of space compromised privacy and comfort for women as they were admitted into

overcrowded labour and delivery wards, and resulted in insufficient space for personal care (Pitchforth et al., 2010).

Beside the issues of staffing and physical environment that influence the provision of supportive care, participants highlighted the lack of essential equipment and materials as a barrier to the practice of labour support. These findings were in line with a framework for high quality maternity care, which revealed that the availability of essential material and equipment in maternity services was vital to allow midwives and nurses adequate provision of continuous supportive during childbirth process (Renfrew et al., 2014).

In addition to factors related to resources at health facilities, mothers and nurses and midwives expressed their views about the behaviour of staff and the need for institutional support if supportive care was to be enabled.

Continuous training for midwives and nurses was highlighted in the study findings indicating the need for health professional to be up to date and to maintain harmony with regard to supportive care. The literature strongly supports in-service training which serves to increase skills and knowledge needed for better delivery of childbirth care (Sheferaw et al., 2017).

Participants commented on positive factors including teamwork, reporting and collaboration among nurses and midwives which, in their opinion, enhance the implementation of labour supportive care and continuity of care at public health facilities. These views are closely related to the results of an Australian study indicating the importance of interdisciplinary collaboration and consultation among health professionals for successful continuity of supportive care among women in the process of labour and delivery (Bradfield et al., 2019).

Participants of the study had mixed perceptions about midwives' and nurses' behaviours. Some of the participants gave credit to staff who worked tirelessly and were very willing to assist them to cope with the labour process. There was acknowledgement of great endurance of nurses and midwives while implementing supportive care among labouring women. In Iravani et al.'s study, women reported that being supported during labour and delivery made them feel satisfied and content with the work done by health professionals (Iravani et al., 2015).

Concern about rewarding and motivating midwives and nurses was raised by women who believed that staff in labour and delivery wards should have some form of institutional

motivation or recognition to maintain their good spirit of perseverance while providing supportive care. Findings from Sharma et al. concurred with the findings of the study. In their study about solutions to scale up interventions of quality care in maternity services, they recommended health facilities improve work climate by increasing incentive mechanisms for staff allocated in maternal and neonatal services (Sharma et al., 2015).

Other participants, however, reported the delay experienced in receiving supportive care at a health facility. These views of participants of the study could be linked with the evidence from an integrated review about delayed and unfinished nursing care, which showed that delayed care could happen in settings with understaffing issues and a long process for admission. Jones et al. (2015) argued that the time required to give care for each client is long if one is to provide the care planned for patients in maternity services. The review indicated that health care providers should rapidly identify and respond to all emergencies at health facilities regardless administration procedures (Jones et al., 2015).

6.3.3. Elements of supportive care

Both groups reported elements that they believe constitute supportive care offered to women during the labour and delivery process.

One of the elements identified was communication, which consisted of the provision of complete information, explanations, instructions and updates about procedures performed during the childbirth process. It appears that there exists a need for improvement of effective communication between mothers and the midwives and nurses at public health facilities. Evidence drawn from this study indicated that mothers need to know what is happening in terms of progress of their labour and wish to be kept informed. Thus, it is important for nurses and midwives to pay attention to providing relevant and accurate information to the mothers.

Recently the World Health Organization (WHO) published recommendations around supportive care for improving childbirth experience. The recommendations referred to effective communication between health care providers and women during labour and the delivery process. The WHO recommendation highlighted minimum elements that should be included in effective communication namely: introduction of health care provider to woman, responding to woman's needs, provision of full information. (World Health Organization,

2018). The results of this study concurred with the items covered under effective communication as stipulated by the WHO recommendation.

Chang et al. (2018) contend that women appreciate their active participation in maternity care. They argued that involving and listening to women throughout childbirth care contributes to better implementation of supportive care and increases satisfaction with the birth experience (Chang et al., 2018). Moreover, recent results of a study conducted in Australia about midwives' experiences of being with woman during labour and delivery revealed that communication between women and midwives was key to establishing trust and relationships that enable provision of support care and increased woman-centred care (Bradfield et al., 2019).

Some study mothers shared their views about health education that they expected to receive during the labour and delivery process. There was concern about a lack of education related to the postnatal period. Information and education offered by midwives to women during the childbirth process should not be limited to delivery matters but also prepare the women for breastfeeding, family planning and neonatal health care (Nilsson and Lundgren, 2009).

Existing evidence recommending that midwives and nurses should attend to women's emotional needs with compassion and encouragement during labour and delivery process (World Health Organization, 2018), and the current study found the same, with mothers needing to be assisted emotionally. They explained that midwives and nurses should be more compassionate and give them respect while providing supportive care. This finding is in line with the study carried out in Addis Ababa, which showed that respondents valued compassion and reassurance offered to them for dealing with labour and delivery process in positive manner highly (Wassihun and Zeleke, 2018).

Mothers raised issues about physical support, and they pointed out limited physical assistance, comfort, support and pain relief throughout labour and birth process. Comfort measures expressed by some mothers indicated that they could not relax or even walk around while they were experiencing the childbirth process. In birth settings in the developed world, many efforts have been made to increase the availability of comfort measures including: hydrotherapy, use of warm and cold compresses, relaxation techniques and pain relieving medication (Khitam et al., 2014).

Evidence drawn from this study also reported the need for midwives and nurses to have an advocacy role, particularly in relation to birth companions. Both groups of participants shared their views related to a lack of birth companionship. Midwives and nurses indicated that husbands should be involved in childbirth care and give support to their wives during the birth process. For mothers, the presence of a birth companion of their choice would prevent them being left alone during labour and in the delivery room. In Rwanda, where this study took place, most public health facilities face the issue of limited space in maternity wards and when women do have companions, they do not stay with them in the labour ward.

These findings were similar to conditions in Brazil, as reported in a study by Rahman et al., where Brazilian women reported that birth companionship was restricted due to inadequate physical structure of labour ward, and most times, labouring women felt lonely. The same study stated that involving men in maternity care, especially in low incomes settings, could play a crucial role for accessing and utilizing skilled maternal and new-born services (Rahman et al., 2018).

Furthermore, participants of this study made comments related to eating and drinking in labour wards. There is a need to advocate for mothers to have access to food and drink in maternity services of public health facilities. This is in line with evidence from literature, which reported that Iranian women desired to eat and drink to get enough energy for birthing. (Iravani et al., 2015). Moreover, the World Health Organization encourages light food for women in labour, and recommends that health care providers should use their judgement and not withhold nourishment for women with no apparent risks during labour (World Health Organization, 2016a).

6.4. CONCLUSION

The findings of this study were presented and discussed and compared with international literature. This study showed that the constrained working environment, including limited resources in Rwanda, has a negative influence on the implementation of labour support care. The findings of the current study are significant and hence need to be addressed in increasing the quality of childbirth care in Rwandan health facilities. The next chapter presents overall findings from the scoping review, tool development and survey of the study, limitations of the study, recommendations and conclusions.

CHAPTER 7 : SUMMARY OF FINDINGS, LIMITATIONS, CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter provides an answer to the research question, summarizes the key findings related to each of the research objectives, discusses the limitations of the study and formulates recommendations emanating from the key findings of this study.

This study, entitled " Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda," had four objectives namely:

- to establish international best practice with regard to labour support practice and measurement of labour support practice,
- to develop and validate a labour support questionnaire for Rwanda
- to explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities in Rwanda
- to explore and describe the views of mothers about the importance of labour support they receive from nurses and midwives at public health facilities in Rwanda.

The model of labour support provided by The Royal College of Midwives (2012), with four categories of support including emotional support, physical support, informational support and advocacy, was used to guide this study.

The methodology that guided this study was a descriptive quantitative, cross-sectional design. The study started with a scoping review followed by the development of a labour support tool. A survey was then conducted using the labour support questionnaire with closed and open-ended questions among 648 women in postnatal wards and 154 nurses and midwives working in labour and delivery wards of public health facilities located in Kigali City, Rwanda. The data collection was undertaken for a period of four weeks in November 2018. The data analysis of quantitative data was performed using two software packages, viz. SPSS (version25) and AMOS, while latent content analysis was conducted to identify categories

and subcategories that emerged from the answers of participants to develop meaning about the topic of the study.

Together, the findings from all three phases of this study namely the scoping review, the tool development and the survey provided new knowledge and understanding about labour support practices at public health facilities in the context of Rwanda. Based on the findings of this study, the researcher proposed new ways forward and provided opinions on the practice of labour support.

7.2 SUMMARY OF MAJOR FINDINGS

A synthesis of the findings of each phase of the study is presented under each relating objective. The overall aim of the research study was to establish the current state of the importance of labour support practices for mothers and nurses and midwives at public health facilities in Rwanda. The research question was "What importance do mothers and nurses and midwives ascribe to labour support practices at public health facilities in Rwanda?"

7.2.1 Phase one: Scoping review

Research objective one: To establish international best practice with regard to labour support practice and measurement of labour support practice

The review of existing literature outlined the status of labour support practice and its measurement worldwide. The review reported largely on information about supportive care implemented by nurses and midwives during labour and delivery within a different context to Africa. The findings of the scoping review indicated the best practices of labour support in western countries that include emotional support, physical support, information and advice and advocacy. However, labour support does not really happen in low-income settings with limited resources such as shortage of staff, physical infrastructure and institutional factors.

In relation to labour support measurement, the findings of this study noted that the measurement tools found in this review were developed and used in high income and well-

resourced settings. This review indicated that the dimensions of labour support were measured differently depending on the study purpose and setting.

The findings of scoping review contributed to the literature on the labour support practices which has been predominantly western. The findings revealed the scarcity of evidence about the nature of labour support provision, and its measurement, especially in developing countries, which includes Rwanda. This gap was evidence of the need for the current study to develop a tool for the measurement of labour support and to use the tool to determine the importance of labour support in Rwanda as a first step to improving care.

7.2.2 Phase two: Development of labour support questionnaire

Research objective 2: To develop and validate a labour support questionnaire for Rwanda

The labour support questionnaire was developed and validated by the researcher following rigorous methodological protocol of tool development during two phases of this study. Phase one was a scoping review which identified items for inclusion in the questionnaire which was developed in phase two. This tool was then used in phase three to collect data.

The assessment of content validity was done through the review of items drawn from the scoping review by a team of experts. Before data collection, a pilot test of the developed questionnaire was conducted on a small sample of respondents who were not included in the study but represented the study population.

The questionnaire included three sections. The first section related to demographic characteristics. The second section contained statements about the importance of labour support care/behaviours with Likert-type scale responses to measure the level of participants' agreement. The last section included one open ended question on the views of participants on factors influencing provision of labour support practice.

A test of reliability was conducted for both labour support questionnaires of women and nurses-midwives and scores on the Cronbach's Alpha of 0.95 and 0.89 were obtained respectively. Using AMOS software, an Exploratory Factor Analysis (EFA) and

Confirmatory Factor Analysis (CFA) were performed to classify the items of questionnaires under factors and to confirm how the structure fits the data. The findings of the study revealed that the nurses and midwives believed that four factors are important namely professional support, communication support, comfort and emotional support while the women identified only three factors as important namely professional support, comfort and emotional support. Both labour support questionnaires are valid and reliable to measure the current status of supportive care provided to labouring at public health facilities in Rwandan. These can be found in appendices.

7.2.3 Phase three: Survey

Research objective 3: To explore and describe the views of nurses and midwives about the importance of labour support practices they provide to labouring women at public health facilities in Rwanda

Research objective 4: To explore and describe the views of mothers about the importance of labour support they receive from nurses and midwives at public health facilities in Rwanda

In this phase a survey was undertaken among nurses and midwives and mothers at public health facilities of Kigali, which included one referral hospital and four district hospitals. The data collection was conducted using the tool developed in phase two of the study, as described above.

The findings of this study indicated that

- The majority of nurses and midwives working in labour and delivery wards were relatively young (less than 40 years old). Most of them were newly qualified nurses and midwives. On the other hand, a large number of the mothers who participated in this study were between 21 and 30 years and most had only obtained a primary level of education.

- Nurses and midwives and mothers valued and ranked highly the importance of professional support and communication during the childbirth process. Professional support was perceived as the presence of a nurse or midwife during labour and

delivery. Professional support and communication were very meaningful for mothers as they engendered trust and made the mothers feel safe during the labour and delivery process.

- Both participant groups ranked the importance of comfort and emotional support as less important. It can be argued that the context of labour support provision can influence both providers and mothers' perceptions about supportive care during labour and delivery process.

- Level of education of women can play a significant role in mothers' appreciation of the importance of labour support features. The findings of this study indicated that mothers with primary education attributed a low ranking to the importance of professional support compared to women with higher levels of education, including secondary and tertiary education.

- Career fatigue and psychological challenges associated with the forties may affect negatively the provision of labour support care. The findings of this study indicated that majority of nurses and midwives who had spent more than 10 years in labour and delivery wards were between 40 and 49 years and were the ones who indicated a limited importance for comfort compared to other groups.

- Young midwives with less than 10 years of experience in labour and delivery wards rated comfort as more important compared to those with longer careers. It may be argued that in their early- or mid-careers, nurses and midwives are more enthusiastic about supportive care.

- Mothers and nurses and midwives reported issues that they believe influenced the implementation of labour support practices at public health facilities. The factors highlighted included limited infrastructure, shortage of staff and equipment, institutional factors and a lack of awareness of labour support practices.

7.3 LIMITATIONS

The researcher acknowledges the limitations of the study.

Sample of the study

- The study was conducted in an urban area of Rwanda and focused only on public referral and district hospitals. Nurses and midwives working in primary health facilities were not included in the study and may well hold different opinions to those participants included in the study, as they work in a different context.

- The existing shortage of nurses and midwives at public health facilities led the researcher to invite all nurses and midwives working in labour and delivery wards of the study sites to participate in the study. The current study achieved a fair representation of postnatal women, nurses and midwives in an urban area. The results of the study cannot be generalized to all nurses, midwives and postnatal women in Rwanda, as not all public health facilities have similar resources and procedures relating to the provision of labour support.

Lack of prior research studies on the topic

- Scarcity of evidence in developing countries, including Rwanda, that could serve as primary evidence for citation and understanding of the topic prior to this research study, which could have provided support for the findings, was limited.

- The review only included studies published in the English language, from three databases for the period of January 2009 to March 2018. Research publications outside of the scope of the review were not included and there is a possibility that they may have influenced the results, had they been included.

Self- reported data

- A self-report survey questionnaire, including an open ended question, was used to collect data from women in postnatal wards. During the first days of data collection, women showed reluctance to respond to some questions while ranking the importance of labour support practices. The researcher and research assistants provided improved explanations of the purpose of the research on subsequent days after which there was improved compliance in answering all questions. Despite the limitations of the survey

questionnaire the study generated valuable insight about labour support practices in the Rwandan context and provides a baseline data for further research in this area which is much needed.

Budget

- Budget and time constraints did not allow the researcher to involve participants from both rural and urban areas in the study. This could have provided different information about labour support practices.

7.4 RECOMMENDATIONS

The recommendations from the study are outlined for education, practice, research and policy development and implementation.

7.5.1 Nursing practice and management

- The results of the study indicate that the provision of labour support is lacking. The plan for recognition and support of the midwives and nurses will enable them to improve the provision of labour support to mothers. In making recommendations for practice, it is necessary to distinguish between malleable and non-malleable risks and to concentrate on the malleable risks, such as participatory duty roster , providing education and supporting staff as this can bring about change, whereas structural issues are much more difficult to improve in the short term.

- It was of interest to note that there was no difference between midwives and nurses in their practice. This led the researcher to believe that the level of knowledge does not influence labour support. This notion was supported by the finding that younger nurses with less exposure to the environment, and therefore less experience, provide better labour support care. It would seem therefore that experience (in a negative environment) has a negative impact on the quality of labour support.

- The evidence shows that patients were not aware of their rights related to the provision of labour support and therefore do not expect it. It is recommended that

tailored education and patient rights be included in ante-natal classes that women attend.

7.5.2 Nursing education

- From this study, results showed that midwives and nurses' theoretical knowledge of labour support is not lacking. However, they seem to have little opportunity or ability to practice the skill of labour support. Educators should create the opportunity to assist students to learn this skill in simulation laboratories.

- It is also recommended that clinical instructors provide improved support for students to practice labour support while the environment is being improved.

7.5.3 Nursing research

- Further research should be undertaken to extend this study to a broader population, covering all public and private health facilities in urban and rural areas of Rwanda and in other settings with similar resources, to obtain a better understanding of labour support provision in poorly resourced countries.

- More qualitative research should be conducted with a focus on experience and outcomes of supportive care among labouring women in countries with constrained resources to provide more and deeper understanding on labour support provision in such a context.

- Further research would be useful to determine the usability and effectiveness of providing labour support in a resource constrained environment.

- There should be more research to generate evidence and innovative strategies to overcome barriers and threats to the implementation of labour support care in developing countries, which experience high maternal mortality rate.

7.5.3 Policy

- It is recommended that guidelines, which highlight the package of supportive care including emotional support, physical support, informational support and advocacy, be developed. The guidelines should then be made easily accessible to midwives, nurses and women as a reminder of what is required.

- It is further recommended that the tool developed in this study be used for routinely monitoring patient satisfaction on discharge from maternal health facilities. The tool for midwives and nurses could be used as a self-evaluation tool to improve the quality of labour support care.

7.5 CONCLUSION

Provision of labour support practice by nurses and midwives to labouring women has a positive impact on the birth experience. This study contributes to the body of knowledge by using a combination of research methods, namely the scoping review, the use of expert team to develop a new research tool and a survey, to provide, for the first time, a picture of the importance of labour support practices in the Rwandan context from the perspectives of both the mothers and the health care providers. The development of new labour support tool facilitates the measurement of labour support care and subsequently it improves maternity care.

The findings of the study revealed that both groups of participants, namely mothers and nurses and midwives, valued and ranked highly the importance of professional support and communication during labour and delivery. However, this study established that both groups ascribe little importance to emotional support and comfort.

The results of the study indicated that the level of education is a relevant aspect in mothers' appreciation of the importance of labour support. Mothers with primary education attribute little importance to professional support compared to others with a higher level of education.

The findings also revealed that young nurses and midwives, with less than ten years of experience in labour and delivery wards, rated comfort as more important compared to those nurses and midwives who had been practicing for a long time. Nurses and midwives who had spent more than ten years in labour and delivery wards ascribed limited importance to comfort support compared to the other groups. In light of these findings, the years of experience and age of nurses and midwives should be taken into consideration by the management of health facilities before establishing the duty roster for nurses and midwives to increase quality of supportive care.

Finally, it should be noted that the constrained working environment, including limited resources in Rwanda, has a negative influence on the implementation of labour support practice. The present study recommends further qualitative studies investigating health care providers and mothers' experience of labour support care in low-resource settings be done. It is hoped, therefore, that the findings of the current study can contribute to improving the working environment for the provision of labour support and hence increase the quality of childbirth care in Rwandan health facilities and in other developing countries.

REFERENCES

Adams, E. & Bianchi, A. 2008. A practical approach to labor support. *J Obstet Gynecol Neonatal Nurs,* 37**,** 106-15.

Adolphson, K., Axemo, P. & Hogberg, U. 2016. Midwives' experiences of working conditions, perceptions of professional role and attitudes towards mothers in Mozambique. *Midwifery,* 40**,** 95-101.

Alves, M. B. & Poli, M. C. 2016. When a Woman Is Mother: Feminine Jouissance in Motherhood. *Ágora: Estudos em Teoria Psicanalítica,* 19**,** 191-207.

Arksey, H. & O'Malley, L. 2005. Scoping studies towards a methodological framework. *International Journal of Social Research Methodology,* 8**,** 19-32.

Aschenbrenner, A., Hanson, L., Johnson, T. & Kelber, S. 2016. Nurses' Own Birth Experiences Influence Labor Support Attitudes and Behaviors. *JOGNN,* 45**,** 491-501.

Aune, I., Amundsen, H. & Aas, L. 2014. Is a midwife's continuous presence during childbirth a matter of course? Midwives' experiences and thoughts about factors that may influence their continuous support of women during labour. *Midwifery* 30**,** 89-95.

Avortri, G. S. & Modiba, L. M. 2018. Women's perspective of facility-based childbirth services in Ghana: A qualitative study. *Afr J Prim Health Care Fam Med,* 10**,** e1-e8.

Baas, C. I., Erwich, J. J. H., Wiegers, T. A., De Cock, T. P. & Hutton, E. K. 2015a. Women's Suggestions for Improving Midwifery Care in The Netherlands. *Birth,* 42**,** 369-378.

Baas, C. I., Erwich, J. J. H., Wiegers, T. A., De Cock, T. P. & Hutton, E. K. 2015b. Women's Suggestions for Improving Midwifery Care in The Netherlands. *BIRTH* 42**,** 369-378.

Babbie, E. 2010. *The Practice of Social Research,* Belmont Wadsworth.

Barclay, L. & Kornelsen, J. 2016. The closure of rural and remote maternity services: Where are the midwives? *Midwifery,* 38**,** 9-11.

Barrett, S. J. & Stark, M. A. 2010. Factors associated with labor support behaviors of nurses. *The Journal of Perinatal Education,,* 19**,** 12-8.

Bazirete, O., Mbombo, N. & Adejumo, O. 2017. Utilisation of the partogram among nurses and midwives in selected health facilities in the Eastern Province of Rwanda. *Curationis,* 40.**,** a 1751-1760.

Bissonnette, V. L. & Bertram, D. 2007. Statistical tables and Likert Scales. Berry College-Georgia.

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quinonez, H. R. & Young, S. L. 2018. Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. *Front Public Health,* 6**,** 149.

Bohren, M., Hofmeyr, G., Sakala, C., Fukuzawa, R. & Cuthbert, A. 2017. Continuous support forwomen during childbirth (Review). Cochrane Database of Systematic Reviews: Cochrane Library.

Bohren, M. A., Berger, B. O., Munthe-Kaas, H. & Tuncalp, O. 2019. Perceptions and experiences of labour companionship: a qualitative evidence synthesis. *Cochrane Database Syst Rev,* 3**,** CD012449.

Bradfield, Z., Hauck, Y., Kelly, M. & Duggan, R. 2019. "It's what midwifery is all about": Western Australian midwives' experiences of being 'with woman' during labour and birth in the known midwife model. *BMC Pregnancy Childbirth,* 19**,** 29.

Bremnes, H. S., Wiig, A. K., Abeid, M. & Darj, E. 2018. Challenges in day-to-day midwifery practice; a qualitative study from a regional referral hospital in Dar es Salaam, Tanzania. *Glob Health Action,* 11**,** 1-8.

Brown, T. A. 2015. Confirmatory factor analysis for applied resach. *Methodology in Social Sciences*-. New York: The Guilford Press.

Burns, N. & Grove, S. 2009. *The Practice of Nursing Research: Appraisal, synthesis, and generation of evidence* St. Louis- Missouri Saunders Elsevier.

Byrne, B. M. 2013. *Structural-equation-modeling-with-AMOS.Basic Concepts Applications and Programming.,* New York, Routledge-Taylor & Francis Group.

Caro-Bautista, J., Martin-Santos, F. J., Villa-Estrada, F., Morilla-Herrera, J. C., Cuevas-Fernandez-Gallego, M. & Morales-Asencio, J. M. 2015. Using qualitative methods in developing an instrument to identify barriers to self-care among persons with type 2 diabetes mellitus. *J Clin Nurs,* 24**,** 1024-37.

Carquillat, P., Vendittelli, F., Perneger, T. & Guittier, M. J. 2017. Development of a questionnaire for assessing the childbirth experience (QACE). *BMC Pregnancy and Childbirth,* 17**,** 279-290.

Chang, Y., Coxon, K., Portela, A. & Furuta, M. 2018. Interventions to support effective communication between maternity care staff and women in labour: A mixed-methods systematic review. *Midwifery,* 54**,** 4-16.

Cornally, P., Butler, M., Murphy, M., Rath, A. & Canty, G. 2014. Exploring women's experiences of care in labour. *Evidence Based Midwifery,* 12**,** 89-94.

Creswell, J. W. 2014. *Research Design Qualitative, Quantitative, and Mixed Methods Approaches,* California, SAGE Publications.

Cronin, G. P. & Sadan, M. 2015. Use of evidence in policy making in South Africa: An exploratory study of attitudes of senior government officials. *African Evaluation Journal,* 3**,** 10-20.

Daniel, B. 2013. An Exploratory Study to assess the Expectations of Mothers During Labour from Professional Nurses in a Selected Hospital, Ludhiana. *International Journal of Nursing Care,* 1**,** 12-16.

Daniel, G., Oyetunde, M. & Eleri, G. 2015. Mothers validation of midwives care in the management of labour pain in Plateau State, Nigeria. *International Journal of Nursing and Midwifery,* 7**,** 1-8.

de Carvalho, l. & Higginbottom, G. 2017. Doulas in Canada: A Scoping Review. *Canadian Journal of Midwifery Research and Practice,* 16**,** 23-38.

Dencker, A., Taft, C., Bergqvist, L., Lilja, H. & Berg, M. 2010. Childbirth experience questionnaire (CEQ): development and evaluation of a multidimensional instrument. *BMC Pregnancy and Childbirth,* 10**,** 81-88.

Didarloo, A. & Khalkhali, H. R. 2014. Assessing study skills among university students: an Iranian survey. *J Educ Eval Health Prof,* 11**,** 8.

Dunne, C. L., Fraser, J. & Gardner, G. E. 2014. Women's perceptions of social support during labour: development, reliability and validity of the Birth Companion Support Questionnaire. *Midwifery,* 30**,** 847-52.

Eklund, M. & Gunnarsson, A. B. 2008. Content Validity, Clinical Utility, Sensitivity to Change and Discriminant Ability of the Swedish Satisfaction with Daily Occupations (SDO) Instrument: a Screening Tool for People with Mental Disorders. *British Journal of Occupational Therapy,* 71**,** 9.

Field, Y. 2009. *Discovering statistics using SPSS,* London, UK, SAGE.

Floyd, L. 2013. Helping midwives in Ghana to reduce maternal mortality. *African Journal of Midwifery and Women's Health* 7**,** 34-38.

Ford, E., Ayers, S. & Wright, D. B. 2009. Measurement of Maternal Perceptions of Support and Control in Birth (SCIB). *Journal of Women's health,* 18**,** 245-252.

Ghanbari-Homayi, S., Dencker, A., Fardiazar, Z., Jafarabadi, M. A., Mohammad-Alizadeh-Charandabi, S., Meedya, S., Mohammadi, E. & Mirghafourvand, M. 2019. Validation of the Iranian version of the childbirth experience questionnaire 2.0. *BMC Pregnancy Childbirth,* 19**,** 465.

Hodnett, E., Gates, S., Hofmeyr, G. & Sakala, C. 2007. Continuous support for women during childbirth (Review). *The Cochrane Library***,** 1-68.

Hodnett, E., Gates, S., Hofmeyr, G. & Sakala, C. 2012. Continuous support for women during childbirth (Review). *TheCochrane Library,* 10.

Hodnett, E., Gates, S., Hofmeyr, G. & Sakala, C. 2014. Continuous support for women during childbirth. Cochrane Database Systematic Review: Cochrane Library.

Hsieh, H. F. & Shannon, S. E. 2005. Three approaches to qualitative content analysis. *Qual Health Res,* 15**,** 1277-1288.

Hu, L. & Bentler, P. M. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal,* 6**,** 1-55.

Hunter, L. P. 2009. A descriptive Study of ‘‘Being with Woman’’ During Labor and Birth. *Journal of Midwifery & Women's Health,* 52**,** 111-118.

Iravani, M., Zarean, E., Janghorbani, M. & Bahrami, M. 2015. Women's needs and expectations during normal labor and delivery. *J Educ Health Promot,* 4**,** 6.

Isbir, G. G. & Serçekus, P. 2017. The Effects of Intrapartum Supportive Care on Fear of Delivery and Labor Outcomes: A Single-Blind Randomized Controlled Trial. *The Journal of Nursing Research* 25**,** 112-119.

Jones, T. L., Hamilton, P. & Murry, N. 2015. Unfinished nursing care, missed care, and implicitly rationed care: State of the science review. *Int J Nurs Stud,* 52**,** 1121-1237.

Khalid, K., Abdullah, H. H. & Kumar M, D. 2012. Get along with quantitative research process. *International Journal of Research in Management*.

Khitam, I. S. M., Insaf, S., Caroline, H. & Debra, C. 2014. Womens satisfaction with hospital-based intrapartum care: A Jordanian study. *International Journal of Nursing and Midwifery,* 6**,** 32-39.

Kumar, A. 2015. Review of the Steps for Development of Quantitative Research Tools. *Journal of Advanced Practices in Nursing,* 1**,** 2-7.

Kungwimba, E., Malata, A., Maluwa, A. & Chirwa, E. 2013. Experiences of women with the support they received from their birth companions during labour and delivery in Malawi. *Health,* 05**,** 45-52.

Kwaleyela, C., White, G. & Denis, S. W. 2019. Being There: Perspectives of Women Giving Birth in Zambia. *Journal of Midwifery and Reproductive Health.,* 7**,** 1602-1609.

Kyei-Nimakoh, M., Carolan-Olah, M. & McCann, T. V. 2017. Access barriers to obstetric care at health facilities in sub-Saharan Africa-a systematic review. *Systematic Review,* 6**,** 110-126.

Limiñana-Gras, R. M., Sánchez-López, M. P., Román, A. I. S.-S. & Corbalán-Berná, F. J. 2013. Health and Gender in Female-Dominated Occupations: The Case of Male Nurses. *The Journal of Men's Studies,* 21**,** 135-148.

Lunda, P., Minnie, C. S. & Benade, P. 2018. Women's experiences of continuous support during childbirth: a meta-synthesis. *BMC Pregnancy Childbirth,* 18**,** 167.

Lundgren, I. 2010. Swedish women's experiences of doula support during childbirth. *Midwifery,* 26**,** 173-80.

Lundgren, I., Berg, M., Nilsson, C. & Olafsdottir, O. A. 2019. Health professionals' perceptions of a midwifery model of woman-centred care implemented on a hospital labour ward. *Women Birth*.

Maputle, M. S. 2018. Support provided by midwives to women during labour in a public hospital, Limpopo Province, South Africa: a participant observation study. *BMC Pregnancy Childbirth,* 18**,** 210.

Mohammed, A. K. 2016. Maternal satisfaction regarding quality of nursing care during labor and delivery in Sulaimani teaching hospital. *International Journal of Nursingand Midwifery,* 8**,** 18.

Munabi-Babigumira, S., Glenton, C., Lewin, S., Fretheim, A. & Nabudere, H. 2017. Factors that influence the provision of intrapartum and postnatal care by skilled birth attendants in low- and middle-income countries: a qualitative evidence synthesis. *Cochrane Database Syst Rev,* 11**,** 1-131.

Munjanja, O. K., Kibuka, S. & Dovlo, D. 2015. Nursing workforce in sub Saharan Africa. *The Global Nursing Review Initiative*.

Nathan, L. M., Shi, Q., Plewniak, K., Zhang, C., Nsabimana, D., Sklar, M., Mutimura, E., Merkatz, I. R., Einstein, M. H. & Anastos, K. 2015. Decentralizing Maternity Services to Increase Skilled Attendance at Birth and Antenatal Care Utilization in Rural Rwanda: A Prospective Cohort Study. *Matern Child Health Journal,* 19**,** 1949-55.

National Institute of Statistics of Rwanda 2015. Rwanda 2014-15 Demographic and Health Survey:Key Findings. Kigali_ Rwanda: National Institute of Statistics of Rwanda.

National Institute of Statistics of Rwanda 2018. *Annual Statistical book -year 2017,* Kigali_Rwanda.

Nikula, P., Laukkala, H. & Pölkki, T. 2015. Mothers'Perceptions of labour support. *Wolters Kluwer Health* 40**,** 373-380.

Nilsson, C. & Lundgren, I. 2009. Women's lived experience of fear of childbirth. *Midwifery,* 25**,** e1-9.

Papagni, K. & Buckner, E. 2006. Doula Support and Attitudes of Intrapartum Nurses: A Qualitative Study from the Patient's Perspective. *Journal of Perinatal Education,* 15**,** 11–18.

Pitchforth, E., Lilford, R. J., Kebede, Y., Asres, G., Stanford, C. & Frost, J. 2010. Assessing and understanding quality of care in a labour ward: a pilot study combining clinical and social science perspectives in Gondar, Ethiopia. *Soc Sci Med,* 71**,** 1739-48.

Plichta, S. B. & Kelvin, E. 2013. *Munroâs statistical methods for healt care research,* Philadelphia, Lippincott Williams & Wilkins.

Plitchta, S. B. & Kelvin, E. 2013. *Munroâs-statistical-methods-for-healt-care-research,* Philadelphia, Lippincott Williams & Wilkins.

Polit, D. F. & Beck, C. T. 2003. Nursing research-Principles and methods 2003 ed.: Wolters Kluwer Health | Lippincott Williams & Wilkins.

Polit, D. F. & Beck, C. T. 2010. *Essentials of Nursing Research Appraising Evidence for Nursing Practice Essentials of Nursing Research.*, Wolters Kluwer Health | Lippincott Williams & Wilkins.

Polit, D. F. & Beck, C. T. 2012. *Generating and Assessing Evidence for Nursing Practice.*, Wolters Kluwer Health | Lippincott Williams & Wilkins.

Rahman, A. E., Perkins, J., Islam, S., Siddique, A. B., Moinuddin, M., Anwar, M. R., Mazumder, T., Ansar, A., Rahman, M. M., Raihana, S., Capello, C., Santarelli, C., El Arifeen, S. & Hoque, D. M. E. 2018. Knowledge and involvement of husbands in maternal and newborn health in rural Bangladesh. *BMC Pregnancy Childbirth,* 18**,** 247-258.

Renfrew, M. J., McFadden, A., Bastos, M. H., Campbell, J., Channon, A. A., Cheung, N. F., Silva, D. R. A. D., Downe, S., Kennedy, H. P., Malata, A., McCormick, F., Wick, L.

& Declercq, E. 2014. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. *The Lancet,* 384**,** 1129-1145.
Romano, A. & Lothian, J. 2008. Promoting, Protecting, and Supporting Normal Birth: A Look at the Evidence. *JOGNN,* 37**,** 94-105.
Ronnerhag, M., Severinsson, E., Haruna, M. & Berggren, I. 2018. Qualitative study of women's experiences of safe childbirth in maternity care. *Nurs Health Sci,* 20**,** 331-337.
Rosen, H. E., Lynam, P. F., Carr, C., Reis, V., Ricca, J., Bazant, E. S., Bartlett, L. A., Quality of, M., Newborn Care Study Group of the, M. & Child Health Integrated, P. 2015. Direct observation of respectful maternity care in five countries: a cross-sectional study of health facilities in East and Southern Africa. *BMC Pregnancy Childbirth,* 15**,** 306.
Ross-Davie, M. & Cheyne, H. 2014a. Intrapartum support: what do women want? A literature review. *Evidence Based Midwifery,* 12**,** 52-58.Ross-Davie, M. & Cheyne, H. 2014b. Understanding support in labour: the potential of systematic observation. *Evidence Based Midwifery* 12**,** 121-126.
Ross-Davie, M., Cheyne, H. & Niven, C. 2013. Measuring the quality and quantity of professional intrapartum support: testing a computerised systematic observation tool in the clinical setting. *BMC Pregnancy and Childbirth* 13**,** 163.
Rwanda Health Department 2013. Rwanda Maternal newborn and child health national strategy 2013-2018.
Rwanda Health Department 2016. Rwanda Demographic and Health Survey 2014-2015: Key Indicators.
Sauls, D. 2004. The Labor Support Questionnaire: Development and Psychometric Analysis. *Journal of Nursing Measurement,* 12**,** 123-132.
Sauls, D. 2006. Dimensions of Professional Labor Support for Intrapartum Practice. *Journal of Nursing Scholarship,* 38**,** 36-41.
Sayinzoga, F., Bijlmakers, L., Van Dillen, J., Mivumbi, V., Ngabo, F. & Velden, K. 2016. Maternal death audit in Rwanda 2009-2013: a nationwide facility-based retrospective cohort study. *BMJ Open,* 6**,** e009734.
Setia, M. S. 2016. Methodology Series Module 3: Cross-sectional Studies. *Indian J Dermatol,* 61**,** 261-4.
Sharma, G., Mathai, M., Dickson, K., Weeks, A., Hofmeyr, G., Lavender, T., Day, L., Mathews, J., Fawcus, S., Simen-Kapeu, A. & Bernis, L. 2015. Quality care during labour and birth: a multi-country analysis of health system bottlenecks and potential solutions. *BMC Pregnancy and Childbirth,* 15**,** 2-20.
Sheferaw, E. D., Bazant, E., Gibson, H., Fenta, H. B., Ayalew, F., Belay, T. B., Worku, M. M., Kebebu, A. E., Woldie, S. A., Kim, Y. M., van den Akker, T. & Stekelenburg, J. 2017. Respectful maternity care in Ethiopian public health facilities. *Reprod Health,* 14**,** 60.
Shenton, A. K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information,* 22**,** 63–75.
Shrotryia, V. K. & Dhanda, U. 2019. Content Validity of Assessment Instrument for Employee Engagement. *SAGE Open,* 9**,** 215824401882175.
Singh, P., Hashmi, G. & Swain, P. K. 2018. High prevalence of cesarean section births in private sector health facilities- analysis of district level household survey-4 (DLHS-4) of India. *BMC Public Health,* 18**,** 613.

Sleutel, M., Schultz, S. & Wyble, K. 2007. Nurses' views of factors that help and hinder their intrapartum care. *Journal of Obstetrics Gynecology and Neonatal Nursing,* 36**,** 203-11.

Sleutel, M. R. 2002. Development and Testing of the Labor Support Scale. *Journal of Nursing Measurement,* 10**,** 249-262.

Son, J. 2018. Back translation as a documentation tool. *Translation & Interpreting,* 10.

Spencer, N. S., Du Preez, A. & Minnie, C. S. 2018. Challenges in implementing continuous support during childbirth in selected public hospitals in the North West Province of South Africa. *Health SA Gesondheid,* 23**,** 1-10.

Stott, A. 2007. Exploring factors affecting attrition of male students from an undergraduate nursing course: a qualitative study. *Nurse Educ Today,* 27**,** 325-32.

Tapia, J. C., Ruiz, E. E., Ponce, O. J., Malaga, G. & Miranda, J. J. 2015. Weaknesses in the reporting of cross-sectional studies according to the STROBE statement: the case of metabolic syndrome in adults from Peru. *Colombia Médica,* 46.

The Royal College of Midwives 2012. Evidence Based Guidelines for Midwifery-Led Care in Labour: Supporting Women in Labour. 1-10.

Thorstensson, S., Ekstrom, A., Lundgren, I. & Hertfelt Wahn, E. 2012. Exploring Professional Support Offered by Midwives during Labour: An Observation and Interview Study. *Nurs Res Pract,* 2012**,** 648405.

Tsala Dimbuene, Z., Amo-Adjei, J., Amugsi, D., Mumah, J., Izugbara, C. O. & Beguy, D. 2018. Women's Education and Utilization of Maternal Health Services in Africa: A Multi-Country and Socioeconomic Status Analysis. *J Biosoc Sci,* 50**,** 725-748.

Tsang, S., Royse, C. F. & Terkawi, A. S. 2017. Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. *Saudi J Anaesth,* 11**,** S80-S89.

Tuncalp, O., Souza, J. P., Hindin, M. J., Santos, C. A., Oliveira, T. H., Vogel, J. P., Togoobaatar, G., Ha, D. Q., Say, L., Gulmezoglu, A. M., Maternal, W. H. O. M. S. o. & Newborn Health Research, N. 2014. Education and severe maternal outcomes in developing countries: a multicountry cross-sectional survey. *BJOG: Onternational Journal of Obstetrics and Gyncology,* 121 57-65.

Vermeulen, J., Peersman, W., Quadvlieg, L., Fobelets, M., De Clercq, G., Swinnen, E. & Beeckman, C. 2018. Development and validation of the Midwife Profiling Questionnaire assessing women's preferred perinatal care professional and knowledge of midwives' legal competences. *Sexual & Reproductive Healthcare,* 16**,** 23-32.

Walker, K., Wilson, P., Bugg, G., Dencker, A. & Thornton, J. 2015. Childbirth experience questionnaire: validating its use in the United Kingdom. *BMC Pregnancy and Childbirth,* 15**,** 2-8.

Wassihun, B. & Zeleke, S. 2018. Compassionate and respectful maternity care during facility based child birth and women's intent to use maternity service in Bahir Dar, Ethiopia. *BMC Pregnancy Childbirth,* 18**,** 294.

Wheatley, C. 2017. Nursing Overtime: Should It Be Regulated? *NURSING ECONOMIC$,* 35**,** 213-217.

Whittemore, R. & Knafl, K. 2005. The integrative review: updated methodology. *Journal of Advanced Nursing 52(5), 546–,* 52**,** 546-553.

World Health Organization 2005. Make every mother and child count. *WHO Library Cataloguing-in-Publication Data.*

World Health Organization 2015a. Success factors for women's and children's health: Rwanda. *World Health Organization Library*.

World Health Organization 2015b. Trends in Maternal Mortality: 1990 to 2015. *WHO Library Cataloguing-in-Publication Data*.

World Health Organization 2016a. Standards for improving quality of maternal and newborn care in health facilities. *WHO Reproductive Health Library*.

World Health Organization 2016b. *Standards for improving quality of maternal and newborn care in health facilities.,* Geneva, Switzerland., WHO Library.

World Health Organization 2018. WHO recommendation on effective communication between maternity care providers and women in labour. *WHO Reproductive Health Library*.

Yaghmaie, F. 2003. Content validity and its estimation. *Journal of Medical Education,* 3**,** 25-27.

Zamanzadeh, V., Ghahramanian, A., Rassouli, M., Abbaszadeh, A., Alavi-Majd, H. & Nikanfar, A. R. 2015. Design and Implementation Content Validity Study: Development of an instrument for measuring Patient-Centered Communication. *Journal of Caring Sciences,* 4**,** 165-178.

Zamanzadeh, V., Valizadeh, L., Nagarandeh, R., Monadi, M. & Azadi, a. 2013. Factors Influencing Men Entering the Nursing Profession and Understanding the Challenges Faced by Them: Iranian and Developed Countries' Perspectives. *Nursing Midwifery Studies,* 2**,** 49-56.

APPENDICES

APPENDIX A: QUESTIONNAIRE FOR MIDWIVES AND NURSES

Labour support questionnaire for nurses and midwives

Views related to labour support practice

Section I: Demographic characteristics

Please select the option that is applied to you

1. Age		**2. Experience in labour and delivery wards**		**4. Academic qualification**	
20- 29 years	1	0-4 years	1	Diploma	1
30-39 years	2	5- 9 years	2	Bachelor's degree	2
40- 49 years	3	>10 years	3	Master's degree	3
>50 years	4			Other	4
3. Gender		**5. Professional qualification**		**6. Personal birth experience**	
Female	1	General Nursing	1	Yes	1
Male	2	Midwifery	2	No	2
7. Health facility					
District Hospital		1		Referral Hospital	2

Section-II: Views of midwives and nurses related to labour support care behaviours

Indicate to what extent you agree or disagree with the importance of the following supportive care behaviours that nurses or midwives provide to women during labour and delivery.

Please circle the extent of agreement or disagreement for each item

1= Strongly disagree	2= Disagree	3= Agree	4= Strongly agree

	Supportive care behaviours	Strongly disagree	Disagree	Agree	Strongly agree
1	Helping to cope with labour and delivery	1	2	3	4
2	Providing confidence in woman's capabilities	1	2	3	4
3	Use of verbal and nonverbal expression	1	2	3	4
4	Keeping woman free from the negative thoughts and promoting positive thoughts	1	2	3	4
5	Enabling woman to exercise her religious beliefs	1	2	3	4
6	Using jokes while interacting with woman	1	2	3	4
7	Spending time with woman	1	2	3	4
8	Giving a continuous reassurance	1	2	3	4
9	Maintaining confidentiality	1	2	3	4
10	Eliminating disturbances around woman	1	2	3	4
11	Helping woman to move and change positions	1	2	3	4
12	Touching woman and held her hand	1	2	3	4
13	Providing woman with cold and/or heat packs	1	2	3	4
14	Providing a warm shower	1	2	3	4
15	Take the woman out to the toilet	1	2	3	4
16	Providing food and/or drinks	1	2	3	4
17	Massaging the lower back	1	2	3	4
18	Teaching breathing, relaxation and pushing techniques	1	2	3	4
19	Answering questions clearly	1	2	3	4

20	Providing guidance about the routine and procedures of the health facility	1	2	3	4
21	Engaging woman in conversation about progress of labour including delivery	1	2	3	4
22	Treating woman with respect	1	2	3	4
23	Making woman feel safe	1	2	3	4
24	Responding to the needs of woman	1	2	3	4
25	Explaining possible options and potential consequences to make choices	1	2	3	4

Section-III: Midwives and nurses' opinions about factors influencing practice of labour support

What factors influence the provision of supportive care behaviours during labour including delivery at your workplace?

_____

_____

_____

_____

APPENDIX B: LABOUR SUPPORT QUESTIONNAIRE FOR MOTHERS (English version)

Labour support questionnaire for women in post-natal ward

Views on the importance of labour support care behaviour of nurses and midwives

Section I: Demographic characteristics: Please select the option that is applied to you

1. Age

< 20	1
21-29 years	2
30-39 years	3
>40 years	4

2 Marital status

Married	1
Unmarried- living with a partner	2
Unmarried- not living with a partner	3
Widowed	4
Divorced	5

3. Number of pregnancies to viable foetus

Primiparous	1
Multiparous	2

4. Level of education

Primary school	1
Technical and vocational school training	2
Secondary school	3
Post-secondary	4
University	5

5.Area of residence

Rural	1
Urban	2

6 Health facility

Health Centre	1
District Hospital	2
Referral Hospital	3

7. Employment

Employed	1
Self-employed	2
Unemployed	3
Student	4

Section-II: Views of women about the importance of items of labour support practice they would like to receive from nurses and midwives during labour and delivery

Indicate the importance of the caring or supportive behaviours listed below. Please circle the degree of importance for each item.

Not important	Somewhat important	Important	Very important
1	2	3	4

	Supportive care behaviours	Not important	Somewhat important	Important	Very important
1	Helping me to cope with labour and delivery	1	2	3	4
2	Providing me with confidence in my own capabilities	1	2	3	4
3	Using verbal and nonverbal expression	1	2	3	4
4	Keeping me free from my negative thoughts and promoting positive thoughts	1	2	3	4
5	Enabling me to exercise my religious beliefs	1	2	3	4
6	Using jokes while interacting with me	1	2	3	4
7	Spending time with me	1	2	3	4
8	Giving me continuous reassurance				
9	Maintaining confidentiality	1	2	3	4
10	Eliminating disturbances around me				
11	Helping me to move and change positions				
12	Touching me and holding my hand	1	2	3	4
13	Providing me with cold and/or heat packs	1	2	3	4

14	Providing a warm shower	1	2	3	4
15	Taking me out to the toilet	1	2	3	4
16	Providing me with food and/or drinks	1	2	3	4
17	Massaging my lower back	1	2	3	4
18	Teaching me breathing, relaxation and pushing techniques	1	2	3	4
19	Answering my questions clearly	1	2	3	4
20	Guiding me about the routine and procedures of the health facility	1	2	3	4
21	Engaging me in conversation about progress of labour including delivery	1	2	3	4
22	Treating me with respect	1	2	3	4
23	Making me feel safe	1	2	3	4
24	Responding to my needs	1	2	3	4
25	Explaining possible options and potential consequences to make choices	1	2	3	4

Section-III: Women s' suggestions to improve labour support care from nurses and midwives

What do you suggest can be done to improve the supportive care provided during labour and delivery?

_____

_____

APPENDIX C: LABOUR SUPPORT QUESTIONNAIRE FOR MOTHERS (Kinyarwanda version)

URUHERERekane RW'IBIBAZO BIBAZWA ABABYEYI KU BURYO BITAWEHO MU GIHE CYO KUBYARA

Ibitekerezo ku kamaro k'imikorere y'ababyaza n'abaforomo ku kwita ku mubyeyi uri ku nda kugeza abyaye

Igice cya mbere: Amakuru rusange arebana n'ubazwa: Hitamo akazu kagendanye n'amakuru akureba

1. Imyaka ufite

Utagejeje ku myaka 20	1
Kuva ku myaka 21 kugera kuri 29	2
Kuva ku myaka 30 kugera kuri 39	3
Hejuru y'imyaka 40	4

2. Irangamimerere

Wasezeranye n'uwo mwashakanye	1
Mubana mutarasezeranye	2
Utarasezeranye kandi utabana n'umugabo	3
Umupfakazi	4
Watandukanye n'uwo mwashakanye	5

3. Inda zavukiye hejuru y'amezi atandatu

Incuro imwe	1
Imbyaro zirenze imwe	2

4. Icyiciro cy'amashuri wize

Amashuri abanza	1
Amashuri y'imyuga n'ubukorikori	2
Amashuri yisumbuye	3
Andi mashuri/masomo nyuma y'ayisumbuye	4
Kaminuza	5

5. Aho utuye

Mu cyaro	1
Mu mujyi	2

6. Ivuriro wabyariyeho

Ikigo nderabuzima	1
Ibitaro by'akarere	2
Ibitaro bikuru	3

7. Umurimo ukora

Ufite akazi	1
Uwikorera	2
Nta kazi ufite	3
Umunyeshuri	4

Igice cya kabiri: Ibitekerezo ku kamaro k'ibintu binyuranye bikorwa n'ababyaza n'abaforomo umuntu yifuza ko yakabonye kuva ari ku nda kugeza abyaye.

Mu rutonde rw'ibintu bikurikira, garagaza akamaro k'igikorwa cyangwa imyitwarire byakugaragarijwe mu mu gihe wari ku nda kugeza ubyaye. Ukurikije uburemere n'akamaro kuri buri gikorwa, ca uruziga ku mubare uhuye n'uburyo wumva byagufashije.

Nta kamaro bifite	Hari icyo bimaze	Bifite akamaro	Bifite akamaro cyane
1	2	3	4

	Uburyo bwifashishwa mu kwita ku mubyeyi uri ku nda kugeza abyaye	Nta kamaro bifite	Hari icyo bimaze	Bifite akamaro	Bifite akamaro cyane
1	Kumfasha kwihanganira ibise no mu gihe cyo kubyara	1	2	3	4
2	Kundemamo icyizere ko nshoboye	1	2	3	4
3	Gukoresha amagambo n'ibimenyetso bamvugisha	1	2	3	4
4	Kundinda ko nagira ibitekerezo bibi ahubwo bamfasha kwiyungura ibitekerezo byiza	1	2	3	4
5	Kumfasha mu myizerere yanjye mu birebana n'idini	1	2	3	4
6	Kunganiriza banterera inzenya	1	2	3	4
7	Kumba hafi cyane	1	2	3	4
8	Gukomeza kumpumuriza				
9	Kumbikira ibanga	1	2	3	4
10	Kundinda ibimbangamira byose				

11	Kumfasha kugendagenda no kudahora nicaye, ndamye cyangwa mpagaze mu buryo bumwe				
12	Kunkoraho no kumfata mu kiganza	1	2	3	4
13	Kungezaho ibituma ngira ubukonje cyangwa ubushyushye	1	2	3	4
14	Kumfasha kwiyuhagira cyangwa kunyuhagiza amazi ashyushye	1	2	3	4
15	Kumfasha kujya mu bwiherero	1	2	3	4
16	Kumpereza icyo kunywa no kurya	1	2	3	4
17	Kunkandakanda mu mugongo	1	2	3	4
18	Kunyigisha uko ngomba guhumeka, kwiruhutsa n'uko basunika umwana	1	2	3	4
19	Kunsobanurira neza ku bintu mbabajije	1	2	3	4
20	Kunsobanurira neza ku bijyanye n'imitrere rusange n'imikorere y'ivuriro	1	2	3	4
21	Kunganiriza no kunsobanurira neza uko bigenda kuva umuntu agiye ku bise kugeza abyaye	1	2	3	4
22	Kunyitaho kandi bakananyubaha	1	2	3	4
23	Kumfasha gutuma numva ntekanye	1	2	3	4
24	Kungezaho ibyo nkeneye byose	1	2	3	4
25	Kunsobanurira neza ko mfite amahitamo menshi no kunyumvisha inyungu ndetse n'ingaruka buri mahitamo afite.	1	2	3	4

Igice cya 3: Ibyifuzo by'ababyeyi byafasha ababyaza n'abaforomo kunoza imikorere yabo mu gihe bita ku babyeyi bari ku nda kugeza babyaye

Ni ibiki bitavuzwe hejuru wumva byagakozwe n'ababyaza n'abaforomo mu gihe bita ku mubyeyi uri kunda kugeza abyaye

APPENDIX D: ETHICS CLEARANCE CERTIFICATE

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R14/49 Ms MC Uwimana

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M170956

NAME: (Principal Investigator)	Ms MC Uwimana
DEPARTMENT:	School of Therapeutic Sciences Department of Nursing Education Medical School University
PROJECT TITLE:	Measuring the importance of a labour support practice for mothers and nurses and midwives at public health facilities in Rwanda
DATE CONSIDERED:	29/09/2017
DECISION:	Approved unconditionally
CONDITIONS:	Revised title noted on 04/11/2019 Single phase project (formerly three phases)
SUPERVISOR:	Drs N Geyer and S Armstrong
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	15/06/2018

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 on the 3rd Floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

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 submit details to the Committee. I agree to submit a yearly progress report. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **September** and will therefore reports and re-certification will be due early in the month of **September** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE CLEARANCE CERTIFICATE NUMBER IN ALL ENQUIRIES

APPENDIX E: APPROVAL OF INSTITUTIONAL REVIEW BOARD (IRB)

UNIVERSITY of RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DIRECTORATE OF RESEARCH & INNOVATION

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 4th / 12/2019
No 498/CMHS IRB/2019

UWIMANA Marie Chantal
School of Nursing and Midwifery, CMHS, UR

Re: Amendment Request for Research Protocol

Dear UWIMANA Marie Chantal

We thank you for submitting your request for research project amendments in the project titled "***Measuring The Importance Of Labour Support Practices For Nurses And Midwives And Mothers At Public Health Facilities In Rwanda***".

After reviewing your request, the amendments have been approved with changes in the following:

- The title has changed from "**Developing and pilot testing a labour support intervention by nurses and midwives at public health facilities in Rwanda**" to ***"Measuring the Importance of Labour Support Practices for Nurses and Midwives and Mothers at Public Health Facilities in Rwanda"***.

We wish you success in this important study.

Professor Gahutu Jean Bosco
Chairperson Institutional Review Board
College of Medicine and Health Sciences, UR

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Innovations, UR

Email: researchcenter@ur.ac.rw P.O Box 3286 Kigali, Rwanda www.ur.ac.rw

APPENDIX F: PARTICIPANT INFORMATION SHEET (English version)

INFORMATION SHEET

Good Day,

Project title: Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda

Introduction

My name is Marie Chantal Uwimana, I am currently enrolled as a PhD student at University of Witwatersrand in Johannesburg, South Africa, in the Department of Nursing Education. I would like to invite you to participate in my study entitled "Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda"**.** This information sheet is to help you decide if you would like to participate. You need to understand everything before you agree to take part in this study**.** The purpose of this study is to develop, and pilot test a labour support intervention by nurses and midwives.

Your involvement, if you consent to participate

You were selected to participate in this study as nurse/midwife who has expertise to provide labour and delivery care. Participants in this study will be asked to complete the labour support questionnaire by indicating the extent you agree or disagree with items related to labour support care. This will take about 20 minutes of your time to complete a self-administered questionnaire.

Expected Benefits

There will be no immediate benefit to you in participating in the study. However, the information that you will provide through the completion of the labour support questionnaire will be valuable for the development of an intervention programme to improve quality of maternal care. **Payment and Cost**

There is neither payment nor cost to participants.

Voluntary participation

Participation in this study is voluntary, and even after the study begins you have right to withdraw from the study at any point without any negative effects. You have the right not to answer questions if you do not feel comfortable to do so.

Study results

The data from the study will be confidential and it will be stored securely in the Department of Nursing at the University of the Witwatersrand for a minimum of two years after publication, or six years in the absence of publications. I will be happy to send you, on request, a copy of any report arising from the study.

Confidentiality

No reports of the study will identify your names, which will be designated a code, so that it will not be possible to identify you in any way.

Contact details

For questions or more details about the study, you can contact me at +250(0)788527435, or through the email: 1586122@students.wits.ac.za. Alternatively, you may contact

Prof. Gahutu Jean Bosco the Chairperson of the Institutional Review Board at college of Medecine and Health Sciences-University of Rwanda using Tel. +250783340040, email: jbgahutu@yahoo.com or you may contact my supervisors:

Dr. Nelouise Geyer using Tel: +27(0) 828 814 090 and email: ceo.nea@edunurse.co.za

Dr. Sue Armstrong using Tel: +27 011 488 3094 and email: Sue.Armstrong@wits.ac.za

Thank you for reading this Participant Information Sheet.

APPENDIX G: PARTICIPANT INFORMATION SHEET (Kinyarwanda version)

INYANDIKO IKUBIYEMO AMAKURU

Muraho,

Izina ry'umushinga w'ubushakashatsi: Gushaka amakuru no gusobanukirwa uburyo abaforomo n'ababyaza bakora ku mavuriro ya Leta mu Rwanda bafasha abagore bari ku nda kugeza babyaye

Intangiriro

Nitwa Marie Chantal Uwimana nkaba ndi umunyeshuri mu Cyiciro cya Nyuma cy'Amashuri, PhD, muri Kaminuza ya WITS mu mugi wa Johannesburg muri Afurika y'Epfo nkaba niga mu Ishami ry'Ubumenyi mu by'Ubuforomo. Nifuzaga kubasaba kugira icyo mwamfasha mu bushakashatsi bwanjye bufite umutwe ugira uti," **Gushaka amakuru no gusobanukirwa uburyo abaforomo n'ababyaza bakora ku mavuriro ya Leta mu Rwanda bafasha abagore bari ku nda kugeza babyaye ".** Iyi nyandiko ikubiyemo amakuru agamije kubafasha kumva neza niba hari icyo mwamfasha muri ubu bushakashatsi. Murasabwa gusobanukirwa neza ibikubiyemo byose mbere yo kwemera kugira uruhare muri ubu bushakashatsi. Ubu bushakashatsi bugamije kugerageza gusobanukirwa neza uko abaforomo n'ababyaza bafasha abagore bari ku nda kugeza babyaye.

<u>Icyo musabwa niba mwemeye kugira uruhare muri ubu bushakashatsi</u>

Twabahisemo nk'umubyeyi kugira ngo mugire uruhare muri ubu bushakashatsi kubera ko mwigeze guhabwa ubufasha mu gihe mwari ku nda kugeza mubyaye mubifashijwemo n'umuforomo cyangwa umubyaza ku kigo nderabuzima cya Leta. Uwemeye kugira uruhare muri ubu bushakashatsi arasabwa gutanga ibisubizo ku ruhererekane rw'ibibazo azashyikirizwa, akavuga ku bufasha yaherewe ku kigo nderabuzima cya Leta. Gusubiza ibyo bibazo bifata iminota nka makumyabiri n'itanu gusa. Umushakashatsi azabashyikiriza urwo ruhererekane rw'ibibazo muzasubiza anabasobanurire uko ibisubizo muzaba mwatanze bizamugeraho.

Mu gihe gusubiza ibyo bibazo byaba bibagoye cyangwa mubibonamo imbogamizi, nateganyije uburyo bwa kimwuga mwaboneramo ubufasha kandi ku buryo butabavunnye. Mu gihe mwaba muhuye n'ikibazo mwakifashisha uburyo bukurikira: Bwana Munyandekwe Simon, uboneka kuri telephone +250 (0)788416798, cyangwa kuri email: kanyasim@hotmail.fr

<u>Inyungu zo kugira uruhare muri ubu bushakashatsi</u>

Nta nyungu z'ako kanya uzahita ubona mu kugira uruhare muri ubu bushakashatsi ariko amakuru uzatanga usubiza ibibazo byabajijwe bizagira akamaro cyane mu gufasha gushyiraho gahunda

iboneye mu kwita ku buzima bw'ababyeyi; tukaba twizeye ko bizagirira akamaro kenshi ababyeyi baza kubyarira mu ivuriro.

Igihembo n'ikiguzi muri ubu bushakashatsi

Kugira uruhare muri ubu bushakashatsi nta gihembo ubivanamo nta n'ikiguzi bigusaba.

Ubushake mu kugira uruhare mu bushakashatsi

Kugira uruhare muri ubu bushakashatsi ni ubushake. Ndabamenyesha ko no mu gihe waba wemeye ndetse watangiye kugira uruhare muri ubu bushakashatsi, igihe cyose ubishakiye, ufite uburenganzira bwo kubuvamo kandi ko nta ngaruka byakugiraho. Ufite kandi uburenganzira bwo kudasubiza ibibazo ibi n'ibi mu gihe wumva byaba bikubangamiye.

Ibizava mu bushakashatsi

Amakuru azava muri ubu bushakashatsi azabikwa nk'ibanga rikomeye kandi ashyingurwe ku buryo bw'umutekano usesuye mu Ishami rirebana n'Ubuforomo muri Kaminuza ya Witwatersrand. Ayo makuru azabikwa neza mu gihe cy'imyaka ibiri mu gihe ubushakashatsi buzaba bumuritswe bugashyirwa hanze cyangwa se abikwe mu gihe cy'imyaka itandatu mu gihe ubushakashatsi buzaba butamuritswe. Mu gihe muzaba mubinsabye, nifuza kuzabagezaho kopi ku makuru azaba yavuye muri ubu bushakashatsi.

Ibanga mu kazi

Nta gace na kamwe kuri ubu bushakashatsi kazagaragaramo amazina yanyu. Ibizakorwa byose bizajya bihabwa izina ry'ibanga cyangwa kodi kugira ngo ntimuzagire aho mugaragara nk'abatanze amakuru.

Abo mwavugisha cyangwa mwaka amakuru

Muramutse mufite ikibazo cyangwa hari andi makuru mukeneye ku bushakashatsi mwambona ku buryo bukurikira: Telefone igendanwa: +250(0)788527435, cyangwa ku buryo bwa imeyili (email): 1586122@students.wits.ac.za. Igihe kandi hari ikitagushimishije cyangwa kitakunyuze ushobora kwitabaza umwe muri aba bakurikira:

Prof. Gahutu Jean Bosco akuriye urwego rw'ubushakashatsi muri Kaminuza y'u Rwanda, Koleji y'ubuzima. Mwamubona kuri telefone igendamwa +250783340040, jbgahutu@yahoo.com

Cyangwa se mukaba mwabaza abanyobora muri ubu bushakashatsi:

Dr. Nelouise Geyer ukoresha telephone: +27(0)828814090, email: ceo.nea@edunurse.co.za ndetse na

Dr. Sue Armstrong ukoresha telephone: +27 011 488 3094 email: Sue.Armstrong@wits.ac.za

Tubashimiye kuba musomye iyi nyandiko ku makuru arebana n'ubu bushakashatsi.

APPENDIX H: CONSENT FORM (English version)

Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda

CONSENT FORM

I hereby confirm that I have read the letter of information, have had the nature of the study explained to me and I agree to participate in the broad study entitled "Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda**"** of Marie Chantal Uwimana**.** In this study I will complete the labour support questionnaire by indicating the extent to which I agree or disagree with items related to labour support care. I may at any stage, without prejudice, withdraw my consent and participation in the study. All questions have been answered to my satisfaction.

Participants in this study will be asked to Participant's Name (please print):

Participant's Signature:

Date:

APPENDIX I: CONSENT FORM (Kinyarwanda version)

"KUGENZURA NO GUSOBANUKIRWA UBURYO ABAFOROMO N'ABABYAZA BAKORA KU MAVURIRO YA LETA MU RWANDA BAFASHA ABAGORE BARI KU NDA KUGEZA BABYAYE"

KWEMERA KU UBUSHAKE

Njyewe.....Ndemeza ko namenye ubushakashatsi bwo "**Kugenzura no gusobanukirwa uburyo abaforomo n'ababyaza bakora ku mavuriro ya Leta mu Rwanda bafasha abagore bari ku nda kugeza babyaye"**bukorwa na Uwimana Marie Chantal. Kandi namenye icyo ubushakashatsi bugamije, icyo nsabwa, inyungu n'ingorane mu kubwitabira.

Nabonye ibaruwa ibumenyesha kandi numvise ibiyikubiyemo. Bityo rero nemeye kugira uruhare k'ubushake ngasubiza ibibazo kandi amakuru ntanga ashobora gukoreshwa n'umushakashatsi mu buryo yansobanuriye buzubahiriza ibanga. Kandi nasobanuriwe ko nshobora guhagarika ubushakashatsi igihe icyo aricyo cyose ntangaruka bingizeho.
Nagize igihe gihagije cyo kubaza ibibazo.

Amazina:

umukono **Itariki / /2018**

APPENDIX J: CERTIFICATE OF TRANSLATION

CERTIFICATION

I, the undersigned, HAVUGINTWARI Lambert in my quality as a professional Translator/Interpreter, hereby certify that the document" **QUESTIONNAIRE ABOUT LABOUR SUPPORT CARE"** of 3 pages in English, original text, has been faithfully translated into Kinyarwanda as **"URUHERE REKANE RW'IBIBAZO BIBAZWA ABABYEYI KU BURYO BITAWEHO MU GIHE CYO KUBYARA"** of 3 pages as well and can be used for any purpose it is intended to in Kinyarwanda as would its original in English.

Done in Kigali by

10/03/2018

HAVUGINTWARI Lambert,

Professional Translator/Interpreter

APPENDIX K: CERTIFICATE OF EDITING

Catherine A. Bell

P O Box 489
Strathavon
2031
Tel: 082 558 2912
Email: incaline@iafrica.com

CERTIFICATE OF EDITING

To whom it may concern:

This letter confirms that the thesis detailed below was edited for English language grammar, language, spelling and punctuation.

Date:	9 March 2020
Thesis Title:	Measuring the importance of labour support practice for mothers and nurses and midwives at public health facilities in Rwanda
Thesis Author:	Marie Chantal Uwimana
Student Number:	1586122
Institution:	Faculty of Health Sciences, University of the Witwatersrand

C. A. Bell