

UNIVERSITY OF KWAZULU NATAL

**EXPLORING KNOWLEDGE, ATTITUDES AND UTILISATION OF THE
PARTOGRAPH BY MIDWIVES AND OBSTETRICIANS IN A
REGIONAL HOSPITAL IN THE ETHEKWINI DISTRICT**

Lungile Audrey MSOMI

2016

**EXPLORING KNOWLEDGE, ATTITUDES AND UTILISATION OF THE
PARTOGRAPH BY MIDWIVES AND OBSTETRICIANS IN A
REGIONAL HOSPITAL IN THE eTHEKWINI DISTRICT**

A dissertation submitted to the school of Nursing and Public Health
College of Health Sciences University of the Kwa-Zulu Natal South
Africa, in partial fulfilment of the requirements for a course-work Master's
Degree in Maternal and Child Health

By

Lungile Audrey MSOMI

Student Number: 207519164

Research Supervisor: Dr. Sisana J. MAJEKE

December 2016

Declaration

I, Lungile Audrey Msomi, declare that this dissertation is my original work and has not been submitted in any form to another university. Where use was made of the work of others, it has been duly acknowledged in the text by means of complete reference. The research topic is entitled “**Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a Regional Hospital in the eThekweni District**”.

Student’s signature

Date: 20th November 2016

Mrs. Lungile Audrey Msomi

Supervisor’s signature

Date: 20th November 2016

Dr. Sisana J. Majeke

Dedication

This work is dedicated to the Glory of the Almighty God, in whom I live and move and have my being, my Ebenezer, the God of all flesh with whom nothing is impossible, the Glory and the Lifter of my head, my Hiding place and my Fortress.

Acknowledgements

First and foremost, I thank God, Almighty, for the strength, wisdom and courage he has given me.

I wish to express appreciation and thanks to my supervisor, Dr. S. Majeke, for her guidance, support and encouragement from the initiation of the study to its completion.

I am grateful to the UKZN School of Nursing for giving me the opportunity to conduct this study and for all the help I received from the staff.

I thank the respondents who willingly took part in the study; without them this study would not have been a success.

Thanks to the KwaZulu-Natal Provincial Department of Health Research Office for granting me permission to conduct this research study.

I extend my warm appreciation to Dr. M Aung, Medical Manager at Prince Mshiyeni Memorial Hospital, for his continued support and encouragement.

A special thanks goes to Dr. Ray Maharaj, Head of Department, Obstetrics and Gynecology, for his support and encouragement.

My heartfelt thanks to Mr. Innocent Myeni for his handy assistance and motivational skills.

Mr. Shaun for his invaluable assistance and endless support.

Miss Hlengiwe Mhlongo for her endless assistance, support and encouragement.

My gratitude is also extended to Mr. Sbusiso Clerence Gwala who devoted his precious time formatting this dissertation.

A special thank you goes to my friends Sbongile Khanyile, Nomusa Ngongoma and Delo Bhengu for their wholehearted support.

Last, but not least, I would like to extend my gratitude to my family who have been my pillar of strength throughout this study.

Abstract

Introduction: A partograph, alternatively called labour graph, is a simple pre-printed paper form on which midwives and obstetricians record labour observations. These observations consist of foetal condition vital signs, features of progress of labour, maternal condition vital signs and therapeutics undertaken in the course of labour. Improper use of the partogram was a major avoidable factor in women dying as a result of puerperal sepsis and postpartum haemorrhage.

Purpose of the study: The purpose of this study was to explore and describe the **knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni district.**

Methodology: This is a quantitative descriptive study. Data collection was done in October and November, 2011. The first part of the study, was prospective in nature, data were collected from self-administered questionnaire which explored the knowledge, attitudes and utilization of the partograph by midwives and obstetricians. The second part of the study was retrospective in nature, data were collected by a chart audit of partograms from the maternity files of women who delivered vaginally in September, 2010 at the study site.

Results: The partograph was used to monitor the progress of labour in all the deliveries, but the recording of variables was incomplete in 38 (38%) partograms, whereas 62 (62%) partograms were completely recorded. The incompletely recorded parameters included temperature, pulse, blood pressure and urine estimation, date and time of rupture of membranes. There were differences in the responses of obstetricians compared to midwives, not only in the use of partograph, but also in the recording of data.

Conclusion: It is evident therefore, that, despite the wide use of the partograph to monitor women in labour, the recording, interpretation and eventual interventions are still deficient, and that more need to be done in order to address this protracted weakness in the management of labour.

Key words: Partograph, Partograms, Midwives, Labour, Obstetricians,

List of abbreviations

AIDS:	Acquired-Immuno-Deficiency syndrom
ANC:	Antenatal Care
AROM:	Artificial Rupture of Membranes
C/S:	Ceasarian Section
CL:	Clear Liquor
CTG:	Cardiotocograph
HIV:	Human Immune Virus
LMIC:	Low and Middle Income Countries
MDG:	Millennium Developmental Goals
MMR :	Maternal Mortality Rate
MRC:	Medical Research Council
MSL:	Meconium Stained Liquor
NCCEMD:	National Committee on Confidential Enquiries into Maternal Deaths
PNC:	Postnatal Care
RCT:	Randomized controlled trial
SMR:	Saving Mothers Report
SROM:	Spontaneous Rupture of Membranes
WHO:	World Health Organisation

Table of contents

Declaration.....	i
Dedication.....	ii
Acknowledgements.....	iii
Abstract.....	iv
List of abbreviations	v
Table of contents.....	vi
List of annexures.....	xii
List of figures.....	xiii
List of tables.....	xvi
Chapter One	1
Introduction to the study	1
1.1. Background of the study	1
1.2. Problem statement.....	5
1.3. Purpose of the study.....	7
1.4. Research objectives.....	7
1.5. Research questions.....	7
1.6. Significance of the study.....	8
1.7. Operational definitions.....	8
1.7.1. Partograph	8
1.7.2. Partogram	8
1.7.3. Midwives.....	9
1.7.4. Obstetrician	9
1.7.5. Labour	9
1.7.6. Maternal death.....	10
1.7.7. Neonatal death.....	10

1.7.8.	Stillbirth.....	10
1.7.9.	Perinatal mortality	10
1.7.10.	Records.....	10
1.8.	Chapters outline	11
1.9.	Conclusion	12
	Chapter two.....	13
	Literature review	13
2.1.	Introduction.....	13
2.2.	Maternal and newborn mortality rate.....	13
2.3.	Importance of partograph	16
2.4.	The utilization of partograph	19
2.5.	Challenges in the utilization of the partograph.....	23
2.6.	Theoretical framework guiding the research study.....	25
2.6.1	Structure.....	25
2.6.2	Process	26
2.6.3	Outcome.....	27
2.7.	Eight principles of Tessier’s Model and application of those relevant to this study: ...	28
2.7.1.	Unique Identification.....	29
2.7.2.	Accuracy.....	29
2.7.3.	Confidentiality.....	30
2.7.4.	Completeness	30
2.7.5.	Timeliness	30
2.7.6.	Accountability	31
2.7.7.	Legibility	31
2.7.8.	Resources	31
2.8.	Conclusion	32
	Chapter Three.....	33

Research Methodology	33
3.1. Introduction.....	33
3.2. Research approach and design	33
3.3. Research setting	34
3.4. Target population.....	34
3.5. Sampling technique and sample size	34
3.6. Research instruments	35
3.7. Data collection process	37
3.8. Validity and reliability	36
3.8.1. Validity.....	36
3.8.2. Reliability	37
3.9. Data analysis	38
3.10. Ethical considerations	39
3.11. Data management.....	40
3.12. Dissemination of information.....	40
3.13. Conclusion.....	41
Chapter Four	42
Presentation of Results.....	42
4.1. Introduction.....	42
4.2. Section A: Socio demographic characteristics.....	43
4.2.1. Gender and the profession of the participants	44
4.2.2. Age group and the profession of the respondents (n=30 obstetricians, n=70 midwives)	44
4.2.3. Race and the profession of the respondents (n=30 obstetricians, n=70 midwives) ..	45
4.2.4. Marital status and the profession of the respondents (n=30 obstetricians, n=70 midwives).....	46
4.2.5. The experience and the profession of the respondents in the labour ward (n=30 obstetricians, n=70 midwives)	46

4.3.	Section B: Interventions performed by the respondents when assessing the women in labour on admission	47
4.4.	Section C: Knowledge and skills of the participants in the use of the partograph	50
4.4.1.	Training of respondents on the use of the partograph (n=30 obstetricians, n=70 midwives).....	50
4.4.2.	Type of tertiary education for respondents Table (n=30 obstetricians, n=70 midwives)	50
4.4.3.	Perception of the participants on the use of partograph (n=30 obstetricians, n=70 midwives).....	51
4.5.	Section D: Foetal condition monitoring by the respondents.....	57
4.6.	Section E: Progress of labour, treatment administered during labour and maternal condition data.....	60
4.6.1.	Progress of labour.....	60
4.6.2.	Treatment administered during labour	64
4.6.3.	Maternal condition	68
4.7.	Second part of study: Utilization of the partograph (Results of the retrospective data)...	73
4.7.1.	Section A: Identification of women in labour.....	74
4.7.1.1.	Data relating to demographic details of women in labour.....	75
4.7.1.2.	Recording of the state of the membranes on admission, date and time of rupture of the membranes	76
4.7.1.3.	Foetal condition	77
4.7.2.	Section B: Progress of labour.....	78
4.7.2.1.	Data relating to the progress of labour	79
4.7.2.2.	Data relating to maternal condition	80
4.7.2.3.	Data relating to medication administered during labour	81
4.7.2.4.	Data relating to delivery of the neonate.....	82
4.7.2.5.	Data relating to the placenta.	83

4.7.2.6.	Data relating to condition of the infant at birth	83
4.8.	Conclusion	85
Chapter Five.....		86
Discussion, conclusion, recommendations, of the study		86
5.1.	Introduction.....	86
5.2.	Midwives' and obstetricians' knowledge of the use of partograph in monitoring progress of labour.....	86
5.2.1.	Source of Knowledge and skills to use the partograph	86
5.2.2.	Assessment of women in labour on admission to labour ward.....	87
5.2.3.	Monitoring of the foetal condition	88
5.2.3.1.	Foetal Heart Rate	88
5.2.3.2.	State of membranes and liquor	89
5.2.3.3.	Caput and moulding.....	89
5.2.3.4.	The progress of labour.....	90
5.2.3.5.	Administration of medication during labour	91
5.2.3.6.	Maternal condition.....	91
5.3.	Factors that influence the use of the partograph in the labour ward.....	92
5.3.1.	Factors that facilitate the use of partograph in the labour ward	92
5.3.2.	Factors that hinder the use of the partograph in the labour ward.....	93
5.4.	Utilization of the partograph by midwives and obstetricians in the labour ward (retrospective part of the study)	95
5.4.1.	Documentation/recording of the partograph	95
5.4.1.1.	Presentation of demographic data in the partograph.....	95
5.4.1.2.	The state of the membranes on admission.....	96
5.4.1.3.	The foetal condition.....	96
5.4.1.4.	The progress of labour.....	97
5.4.1.5.	Administration of treatment during labour	97
5.4.1.6.	Maternal condition.....	97

5.4.1.7. Recording of post-delivery information	98
5.5. Training of midwives and obstetricians	100
5.6. Recommendations.....	101
5.6.1. In-service training for health care providers	101
5.6.2. Education and curriculum for training of midwifery and medical students.....	102
5.6.3. Policy-makers, management and government	102
5.6.4. Further research.....	103
5.7. Limitations of the study	103
5.8. Conclusion	104
References.....	105
Annexures	113

List of annexures

Annexure 1: Information Sheet.....	113
Annexure 2: Consent to Participate in Research Project	114
Annexure 3: Questionnaire	115
Annexure 4: Checklist for partograms for retrospective part of the study	120
Annexure 5: Request for permission to conduct research study	126
Annexure 6: Request for permission to conduct a research study	127
Annexure 7: Request for permission to conduct a research study	128
Annexure 8: Letter of approval from DoH	129
Annexure 9: Letter of approval from PMMH.....	130
Annexure 10: UKZN Ethical Clearance	131

List of figures

Figure 2.1: A diagrammatic illustration of the theoretical framework guiding the study	28
Figure 2.2: Eight principles of Tessier's model (Tessier, 2003).....	29
Figure 4.1: The study outline.....	42
Figure 4.2: The gender of the respondents (n=30 obstetricians, n=70 midwives)	44
Figure 4.3: Comparison of the different age groups of obstetricians versus midwives (n=30 obstetricians, n=70 midwives).....	45
Figure 4.4: The number of respondents from the different racial groups (n=30 obstetricians, n=70 midwives).....	45
Figure 4.5: Marital status and the profession of the respondents (n=30 obstetricians, n=70 midwives).....	46
Figure 4.6: The experience and the profession of the respondents in the labour ward (n=30 obstetricians, n=70 midwives).....	47
Figure 4.7: Responses of obstetricians and midwives on assessment of women in labour on admission (n=30 obstetricians, n=70 midwives).....	49
Figure 4.8: Response of obstetricians and midwives to the systematic use of the partograph (n=30 obstetricians, n=70 midwives)	52
Figure 4.9: Response to the significant use of the partograph in the labour ward (n=30 obstetricians, n=70 midwives).....	53
Figure 4.10: Response to the partograph as a tool for decision-making in the labour ward (n=30 obstetricians, n=70 midwives).....	53
Figure 4.11: Responses to the partograph as a tool to monitor the progress of labour (n=30 obstetricians, n=70 midwives).....	54
Figure 4.12: Responses to the partograph as a tool to detect complications during labour (n=30 obstetricians, n=70 midwives).....	55
Figure 4.13: Responses to the partograph as a tool that improves management of labour (n=30 obstetricians, n=70 midwives).....	55
Figure 4.14: Responses to the view that the partograph is difficult to use in the labour ward (n=30 obstetricians, n=70 midwives)	56
Figure 4.15: Monitoring of the foetal heart rate in the active phase of labour.....	58
Figure 4.16: Time intervals for monitoring the state of membranes and liquor in the active phase of labour (n=30 obstetricians, n=70 midwives)	59

Figure 4.17: Time intervals for monitoring of caput and moulding in the active phase of labour (n=30 obstetricians, n=70 midwives)	59
Figure 4.18: Views of obstetricians and midwives regarding time interval monitoring of cervical dilatation during the active phase of labour (n=30 obstetricians, n=70 midwives)....	61
Figure 4.19: Views of obstetricians and midwives regarding time interval of monitoring of cervical effacement during the active phase of labour (n=30 obstetricians, n=70 midwives).	62
Figure 4.20: Views of obstetricians and midwives regarding the time interval of monitoring of descent of the foetal head during the active phase of labour (n=30 obstetricians, n=70 midwives)	62
Figure 4.21: Views of obstetricians and midwives regarding the time interval of monitoring uterine contractions during the active phase of labour (n=30 obstetricians, n=70 midwives).	63
Figure 4.22: Views of obstetricians and midwives regarding administration of intravenous fluids, only if necessary (obstetricians n=30, midwives n=70).....	65
Figure 4.23: Views of obstetricians and midwives regarding the use of oxytocic drugs for augmentation of labour in cases of poor progress (obstetrician's n=30, midwives n=70).....	66
Figure 4.24: Views of obstetricians and midwives regarding analgesics, e.g. pethidine or entonox inhalation administered for pain relief (obstetricians n=30, midwives n=70)	67
Figure 4.25: Views of respondents that antibiotics may be administered in cases of prolonged rupture of the membranes (obstetricians' n=30, midwives n=70).....	68
Figure 4.26: Time interval for blood pressure and pulse rate monitoring in the active phase of labour (obstetricians' n=30, midwives n=70).....	69
Figure 4.27: Time interval for temperature observation throughout labour (obstetricians n=30, midwives n=70).....	70
Figure 4.28: Time interval for checking urinalysis and urine output during the active phase of labour (obstetricians n=30, midwives n=70)	70
Figure 4.29: Factors that facilitate the use of partograph in the labour ward.....	71
Figure 4.30: Factors that hinder the use of partograph in the labour ward.....	72
Figure 4.31: Recording of name and surname, age, gravid and parity on the partograms (n=100).	75
Figure 4.32: Recording of the state of membranes on admission, date and time of rupture of the membranes on partograms (n=100)	76
Figure 4.33: Recording of foetal heart rate, liquor, caput and moulding on partograms (n=100)	77

Figure 4.34: Recording of data regarding cervical dilatation and effacement, level of foetal head and uterine contractions on the partographs (n=100).....	80
Figure 4.35: Recording of temperature, pulse, blood pressure and urine output on partograms (n=100)	81
Figure 4.36: Recording of the type of medication, dosage, time of administration and mode of administration on the partograms (n=100).....	82
Figure 4.37: Recording of data relating to delivery of the neonate on the partogram (n=100)	82
Figure 4.38: Recording of the date and time of expulsion of the placenta, the state of the placenta and membranes after delivery (n=100).....	83
Figure 4.39: Recording of neonatal outcome, Apgar score, gender, birth weight and whether a quick examination of the newborn was recorded on the partograms (n=100)	84

List of tables

Table 3.1: Content validity	37
Table 4.1: General overview of the demographic data relating to all obstetricians and midwives (n= 100).....	43
Table 4.2: The responses of respondents on the assessment of women in labour on admission to the labour ward (n=30 obstetricians, n=70 midwives)	48
Table 4.3: Perception of the participants on the use of partograph (n=30 obstetricians, n=70 midwives).....	51
Table 4.4: Monitoring of the foetal condition at different time intervals (n=30 obstetricians, n=70 midwives).....	57
Table 4.5: Views of obstetricians and midwives on timely intervals for monitoring the progress of labour	60
Table 4.6: Views of obstetricians and midwives regarding treatment administered during labour (n=30 obstetricians, n=70 midwives).....	64
Table 4.7: Shows the views of the respondents about time interval of monitoring blood pressure, pulse, temperature, urinalysis and urine output (obstetricians n=30, midwives n=70)	68
Table 4.8: General overview of findings obtained from the old 100 partograms regarding demographic details, the state of membranes and the foetal condition in women who delivered in September, 2010 (n=100)	74
Table 4.9: The general overview of recording of information in the progress of labour, the maternal condition, medication administered during labour, delivery of the placenta and membranes, as well as the condition of the infant at birth, as recorded on the partograms (n=100).....	79
Table 4. 10: Proportions of partograms with records of parameters of labour (n=100 audited records)	84

Chapter One

Introduction of the study

1.1. Background

Globally it is of paramount importance that all pregnant women in labour are monitored by midwives utilizing a partograph so that a live baby is delivered (Mathibe-Neke, Lebeko and Motupa, 2013; Shokane, 2011). A partograph is a pre-printed paper that provides a visual display of recorded observations carried out on mother and foetus during labour. It is universally used as part of safe motherhood initiative for improving labour management and reducing maternal and foetal morbidity and mortality (Souza, Oladapo, Bohren, Mugerwa, Fawole, Moscovici et al., 2015; Khonje, 2012). The partograph is used to identify abnormal labours which are the cause of problems that lead to morbidity and mortality (Yisma, Dessalegn, Astatkie and Fesseha, 2013a). However, most parameters on the partograph are not monitored and most health care workers do not document their findings on the partograph after reviewing a woman in labour. Midwives seem not to utilize the partograph correctly when monitoring women in labour (Shokane, 2011). Hence the progress of labour may not be closely monitored or labour monitoring may not translate into actions required when need arise (Khonje, 2012).

It is immense problem that deaths of women from any cause associated with and or aggravated by the pregnancy or its management i.e. throughout the duration period of pregnancy (gestation), child birth (delivery) as well as after birth (postpartum period) continue to persist in the 21st century. Globally, in 2015, the maternal mortality rate (MMR) stabilized around 216 deaths per 100 000 live births while total estimate for maternal deaths was 300 000 (WHO and UNICEF, 2015; Hogan, Foreman, Naghavi, Ahn, Wang, Makela et al., 2010). According to the WHO and UNICEF (2015) there are stark disparities in service accessibility and utilization; for instance; women in sub-Saharan Africa have a 1:31 lifetime risk of dying as a consequence of childbirth, compared with a 1:4300 risk in high income countries, explaining the spatial sorting of the burden of maternal mortality (Sakala, 2011).

Notably, the difference in the (MMR) between less economically developed (LED) countries and high income countries provides strong indication that maternal deaths are after all preventable (UNICEF, 2009; Ozumba and Nwogu-Ikojo, 2008; De Lange, Budde, Heard, Tucker, Kennare and Dekker, 2008; Alves, 2007). It is with this view that the United Nations (UN) under the auspices of Millennium Development Goal number 5 (MDG 5) aimed to facilitate the reduction of the MMR which would be reduced by 49 per cent from its 1990 level by 2015 (United Nations, 2015).

Furthermore, United Nations (2015) states that the majority of neonatal deaths worldwide are caused by preterm birth complications (35 per cent), complications during labour and delivery (24 per cent) and sepsis (15 per cent). In sub-Saharan Africa and Southern Asia many deaths are also due to preventable infectious diseases. Many neonatal deaths could be avoided with simple, cost-effective and high-impact interventions that address the needs of women and newborns across the continuum of care, with an emphasis on care around the time of birth. However, analysis shows that too many newborns and mothers miss out on these key interventions (United Nations, 2015).

In spite of substantial efforts in many Sub-Saharan countries to reduce the maternal mortality ratio over recent decades, country-specific decline has been largely marginal, in fact, the MMR even is stalling in some countries/regions, such as Eritrea, Guinea Bissau and the Central African Republic where the rate of decline has been under 2 per cent over a 25-year period from 1990-2015. The adverse effect of HIV on women's health in sub-Saharan Africa appears to be an important contributing factor to poor progress towards the millennium developmental goals (MDG) (Wilmoth, Mathers, Say and Mills, 2010; Hogan et al., 2010).

According to Wakgari, Amano, Berta and Tessema (2015) obstructed labour accounted for 8% of maternal deaths, hence the reported incidence of obstructed labour expected to reach 20% in developing countries. Additionally, in Ethiopia obstructed or prolonged labour accounted for 13% of maternal deaths (Wakgari et al., 2015). The women who experience obstructed labour usually suffer from postpartum hemorrhage, uterine rupture, puerperal sepsis and obstetric fistula. Furthermore, it is highly associated with birth trauma, birth asphyxia, stillbirths, neonatal sepsis and

neonatal deaths (de Wet, 2016; Nakimuli, Chazara, Byamugisha, Elliott, Kaleebu, Mirembe et al., 2014; Prata, Passano, Sreenivas and Gerdt, 2010).

Therefore, prevention of prolonged and obstructed labour by using partograph during labour is a key intervention in the reduction of maternal and perinatal morbidity and mortality (Wakgari et al., 2015). The partograph provides a framework for assessing maternal and foetal condition and labour progress during Systematic monitoring of labour is doubly beneficial in that it secures the well-being of the pregnant mother and leverages it for in improving the foetal condition but altogether saving the lives of both (Shokane, 2011). With the premise that prolonged labour is a common cause of death for delivering mothers, universal uptake of partograph (i.e. a form for the registry of vital statistics on the progress of labour process) would detect birth complications timeously and refer women to relevant prevention and treatment procedures (Bazirete, 2014). In other words, the partograph seeks to illustrate, in the form of a pictorial overview labour, to signal midwives and obstetricians whether there are deviations in maternal and foetal well-being and the labour progress in general. In addition, a secondary benefit is that accurate imputation of birth related data facilitates smoother dissemination within the strata of health personnel attending to mothers in labour, increasing the odds of replicating the literacy for its use in a hospital (Bazirete, 2014).

The literature indicates that the use of partogram assist in deducing significantly maternal and perinatal mortality rate. According to Yisma et al. (2013a) a partograph is one of the valuable appropriate technologies in use for improved monitoring of labour progress, maternal and foetal wellbeing. In addition, the partograph enables midwives and obstetricians to record their examination findings on a standardized form, which generates a pictorial overview of labour progress, maternal and foetal condition, which allows for early identification and diagnosis of pathological labour (Masika, Katongole and Govule, 2015; Yisma et al., 2013a). Accordingly, it captures; measures of cervical effacement, dilatation, descent of the foetal head and contractions, foetal heart rate, maternal pulse, blood pressure and temperature, urine output and volume as well as type of intravenous infusions and medication given (Mathibe-Neke et al., 2013). The use of partograph is critical in preventing maternal and perinatal morbidity and mortality and therefore has applicability in developed as well as developing world settings (Yisma, Dessalegn, Astatkie and Fesseha, 2013b).

In diverse regions in Sub-Saharan Africa, the effective utilization of partograph during births is fraught by skills deficiency and a general lack will to adopt it fully (Yisma et al., 2013a). In a study examining completion of the modified WHO partograph during labour in public health institutions in Ethiopia finds evidence for poor management of labour, particularly associated with inappropriate completion of the tool. To counteract this, they recommend pre-service and regular on-job training for health workers on the correct completion of the partograph (Yisma et al., 2013a).

Elsewhere in Kenya, students undertaking training to be midwives were more likely to face technical difficulties completing partograph when practicing in the labour ward environment (Lavender, Omoni, Lee, Wakasiaka, Watiti and Mathai, 2011). These results reveal that partograph training and implementation are not adequately taught during formal training, increasing the need for re-orientation exercises and support for students in labour wards. Another interesting finding in Lavender et al. (2011) is that student midwife training was not likely to be implemented into practice unless the more qualified health workers supports their learning. This further reinforces the assertion that partograph will continue to be somewhat trivially regarded in the labour ward unless senior health professionals (midwives and obstetricians) lead by example, suggesting the need for further research to explore the views of obstetricians and qualified midwives on partograph use. A study in Ghana thus questions current strategies for implementing partograph by suggesting the need to further investigate reasons surrounding the limited use of partograph even among skilled birth attendants (Gans-Lartey, O'Brien, Gyekye and Schopflocher, 2013).

In the context of South Africa, in the review of the Millennium Development Goals (MDG) in 2013, South Africa was still listed as one of the countries making poor progress towards reducing maternal and perinatal mortality. South Africa, despite of being the single high-income nation among in a largely developing Sub-Saharan Africa, surprisingly high rates of maternal mortality persist (Department of Health, 2015b). Presently, the maternal mortality rate is 269 deaths per 100,000 live births, a standing glaringly higher than the rate of 38 which the national government committed by 2015, the termination on the MDGs. Yet, it is an unobjectionable view by patrons of maternal healthcare that up to 60% of maternal deaths in South Africa are in-fact

avoidable indicating mostly poor quality of care during the antenatal, intrapartum and postnatal period (Department of Health, 2015b).

Locally, the reason for this failure has been attributed to a combination of leading cause (Lloyd and De Witt, 2013). These causes include intrapartum asphyxia complications which can be monitored with widespread use of partograph during birth. For instance, between 2010-2011, deaths induced by intrapartum asphyxia were reported to be linked to healthcare-worker-related factors in 44% of the cases according to the Saving Babies 2010-2011 report (NCCEMD, 2013). Five of these determinants implicating the healthcare worker were: (i) fetal distress monitored but neglected; (ii) fetal distress not monitored and not detected; (iii) no intervention for prolonged second stage labour; (iv) delay in referring the patient and (v) delay in calling for expert assistance (NCCEMD, 2013; Lloyd and De Witt, 2013).

In south Africa midwives and obstetricians face challenges in the utilisation of the partograph to monitor the progress of labour. It is important that midwives should use the partograph when monitoring pregnant women in labour so that complications identified early during monitoring of labour can be attended to timeously by both the midwife and the attending obstetricians (Mathibe-Neke et al., 2013; Shokane, 2011). Despite the call by the National Department of Health, Mathibe-Neke (2009) highlighted that midwives use the partograph incorrectly and inappropriately.

Failure of midwives to utilise the partograph correctly and appropriately when monitoring women during intrapartum constitutes sub-standard care (Mianda, 2010; NCCEMD, 2006). This viewpoint is supported by Opiah, Ofi, Essien and Monjok (2012) who highlights that the number of pregnant women who suffer complications is likely to be reduced significantly through utilisation of a partograph to monitor women in labour.

1.2. Problem statement

Globally it is of paramount importance that all pregnant women in labour are monitored by midwives utilizing a partograph so that a live baby is delivered. Midwives seem not to utilize the partograph correctly when monitoring women in labour (Shokane, 2011). Although a considerable amount of experience and information on the use of the

partograph has been accumulated in the past forty years, it seems not to be effectively used in many developing countries (Adesola, Adekemi and Audu, 2014; Mathibe-Neke et al., 2013). Proper monitoring of women during labour and continuous accurate recording on the partograph are critical not only in intervening appropriately, but also for the purpose of minimizing unnecessary interventions (Mathibe-Neke et al., 2013).

The literature indicates that the tragedy of maternal mortality in sub-Saharan Africa is that, despite its recognition as a major public health issue, maternal mortality figures continue to rise, in spite of the apparent commitment by stake-holders. The majority of maternal and perinatal deaths and complications could be prevented by cost-effective and affordable health interventions like the use of the partograph as a tool for monitoring the progress of labour and prevent morbidity and improve neonatal outcome (Bazirete, 2014; Fawole, Adekanle and Hunyinbo, 2010).

Though several literatures demonstrated good knowledge about the partograph among midwives and obstetricians, several factors still hinder appropriate utilization of the partograph such as lack of detailed knowledge of the partograph, non-availability of the partograph, poor staff numbers, and inadequate training are factors that work against the effective utilization of the partograph in the study facility (Asibong, Okokon, Agan, Oku, Opiah, Essien et al., 2014). Furthermore a gross deficiencies have been highlighted regarding knowledge about normal characteristics during labour (Fawole et al., 2010). Midwives frequently do not utilize the partograph appropriately when monitoring pregnant women in labour by not plotting or incomplete plotting and not analyzing nor interpreting the findings (Shokane, 2011). With regards to the knowledge of different components of the partogram, Yisma et al. (2013a) in a cross-sectional quantitative study to assess knowledge and utilization of partograph among obstetric care givers in public health institutions of Addis Ababa, affirms that knowledge of the function of both alert line and action line were poor.

In diverse regions in Sub-Saharan Africa, the effective utilization of partograph during births is fraught by skills deficiency and a general lack will to adopt it fully (Yisma et al., 2013a). Although the partograph has been in use in many provinces including KwaZulu-Natal for over 25 years, its adoption and adaptation has been shown to be poor, and despite the training at undergraduate level, and in service training there is still a high maternal and peri-natal mortality rate associated with incorrect use of

partograph in regional hospitals in South Africa. Monitoring labour in a systematic way with use of the partograph; is advocated even in low income countries, to prevent possible child birth complications. Early detection and early management of complications reduces maternal and perinatal mortality and morbidity (Mathibe-Neke et al., 2013; Khonje, 2012; Barros, Bhutta, Batra, Hansen, Victora and Rubens, 2010).

Thus this study tends to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni district.

1.3. Purpose of the study

The purpose of this study was to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni district.

1.4. Research objectives

- To determine the midwives' and obstetricians' knowledge of the partograph in monitoring the progress of labour.
- To describe the utilization of the partograph by midwives and obstetricians in the labour ward.
- To identify factors that influence the utilization of the partograph to monitor the progress of labour.

1.5. Research questions

- What is the midwives' and obstetricians' knowledge regarding the use of the partograph?
- How do midwives and obstetricians utilize f the partograph in the labour ward?
- What factors influence partograph use by midwives and obstetricians in

the labour ward?

1.6. Significance of the study

The findings from this study may assist in awakening the importance of the appropriate utilization of the partograph. More important than this, the researcher will share findings with the Department of Health (DOH) and if required recommend ongoing in-service training on the correct usage of the partograph.

The participation in this study would allow the midwives and obstetricians to share their knowledge, attitude and the utilization of the partograph as well as the challenges they face while using the partogram.

The findings from this study would trigger further research in the utilization of the partograph, and necessity to put more emphasis on continuous development of midwives and obstetricians in terms of proper utilization of the partograph.

1.7. Operational definitions

1.7.1. Partograph

A partograph is a graphical presentation of a woman's progress of labour. Once the woman has true signs of labour, the midwife initiates the use of the partograph to record her findings of maternal, foetal condition, progress of labour and treatment administered to a woman (Mathibe-Neke et al., 2013). In this study, the term 'partograph' will refer to a blank or unplotted labour graph as a tool that is used by midwives and obstetricians to record their findings during labour so as to realize when intervention is necessary to prevent complications.

1.7.2. Partogram

A partogram is a printed format that provides a pictorial overview of what was plotted or recorded in the progress of labour, the purpose of which is to alert midwives and obstetricians to any maternal and foetal problem (Lavender, Alfirevic and Walkinshaw,

2006). In this study, the term 'partogram' will refer to a record of completed or plotted information by midwives and obstetricians to monitor the progress of labour.

1.7.3. Midwives

The International Confederation of Midwives (ICM) (ICM, 2005) defines the midwife as: A person who has been regularly admitted to a midwifery educational programme, duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery. She may practice in hospital, clinics, health units, domiciliary conditions or any other service (ICM, 2005).

In this study, the term 'midwife' will refer to a registered midwife (male or female) who provides prenatal care to expectant mothers, conducts delivery of the babies and provides postpartum care to mothers and their infants.

1.7.4. Obstetrician

The obstetrician is a medical practitioner who specializes in the care of pregnant women from the time of conception through delivery and the period following delivery, that is, the postpartum period (Sellers, 1995). In this study, an obstetrician is a medical officer who takes full responsibility (specialized) for the woman during pregnancy, labour and the puerperium period.

1.7.5. Labour

Labour is the process which involves the progressive dilatation and effacement or shortening of the cervix. This process is always accompanied by increasingly painful uterine contractions, descent of the foetal head and occasional spontaneous rupture of the membranes (Buhimschi, Buhimschi, Malinow, Saade, Garfield and Weiner, 2003). In this study, 'labour' will refer to uterine contractions that result in progressive dilatation and effacement of the cervix.

1.7.6. Maternal death

The International Classification of Diseases Injuries and Causes of Death (10th Revision) defines maternal deaths as: The death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (NCCEMD, 2006). In this study, 'maternal death' will refer to the death of a woman during or shortly after pregnancy, intrapartum and puerperium period which is within 6 weeks or 42 days after delivery.

1.7.7. Neonatal death

This is the death of a live born infant within the first 28 days of life. Death of a live born infant within the first 7 days of life is referred to as early neonatal death and death of a live born infant extending from 7-28 days is a late neonatal death (Nannan, Dorrington, Laubscher, Zinyakatira, Prinsloo, Darikwa et al., 2012). In this study, 'neonatal death' refers to the death of a live born infant within the first 28 days of life.

1.7.8. Stillbirth

A stillbirth is a viable foetus which has shown no signs of life after its complete birth, that is, no heart beat and respiration (Sellers, 1995). In this study, a 'stillbirth' is a viable infant that is born dead.

1.7.9. Perinatal mortality

This refers to a viable infant which is born dead (stillbirth), plus to infants who are born alive but die within seven days after delivery (NCCEMD, 2006). In this study, 'perinatal mortality' is death occurring during late pregnancy, (at 26 weeks completed gestation and above) during childbirth and up to seven completed days of life.

1.7.10. Records

This refers to documentation of all necessary information that gives a clear picture of

what took place (Keenan, Yakel, Tschannen and Mandeville, 2008). In this study, 'records' means the complete and legible pertinent assessment data such as vital signs, patients' complaints, who was notified and what interventions were carried out.

1.8. Chapters outline

Chapter One: Introduction and background

Chapter one presents the background of the study, the problem statement, the purpose to the study, objectives and research questions, significance to the study and operational definitions.

Chapter two: Literature review

Chapter two reviews the existing literature on partograph use, describes the different features of partographs used for monitoring the management of labour, and presents the conceptual framework used in the study. In addition, a review of the relevant literature and previous research studied on partograph use, in relation to the maternal and neonatal outcome is conducted.

Chapter Three: Methodology

Chapter three outlines the research approach, the research design, the study instruments, the research setting, the target population, the ethical considerations, and the study limitations. This takes the form of a prospective questionnaire-based survey and a retrospective chart review study.

Chapter Four: presentation of results

Chapter four presents the results of the study and are presented in tables and graphs. The presentation of the results of the study is divided into the following two main categories. Both the results from prospective questionnaire and Retrospective chart review are presented in this chapter.

Chapter Five: Discussion, conclusion of the study

This chapter discuss about the major findings and provide conclusion and the recommendations.

1.9. Conclusion

This chapter covered the introduction and the background to the study, the problem statement, the purpose to the study, objectives and research questions, significance to the study and operational definitions. And the following chapter covers the literature underpinning this study.

Chapter two

Literature review

2.1. Introduction

This chapter summarises the previous studies conducted on the use of the partograph. Grove, Burns and Gray (2013) state that literature review includes both theoretical and empirical sources that document the current knowledge of the problem. These authors continued that the theoretical component consists of theories, models and conceptual frameworks while the empirical component consists of sources from various studies published in journals, books and theses. Therefore, the literature for the present study was gleaned from published journal articles, textbooks, published reports, newsletters and internet search on partogram. The literature in this study was organized into the following headings: Maternal and new-born mortality rate, importance of the partograph, utilization of the partograph, challenges in the utilization of the partograph and the theoretical framework guiding the study. The following data bases were used: Google scholar, google, pub med, science direct.

Key words: Partograph, partogram, perinatal care, delivery ward.

2.2. Maternal and newborn mortality rate

Maternal mortality is unacceptably high. About 830 women die from pregnancy- or childbirth-related complications around the world every day (WHO, 2015). By the end of 2015, roughly 303 000 women will have died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented (WHO, 2015). It is tragic that maternal deaths occur during the natural process of pregnancy, child birth and the postpartum period. Globally, each year there are at least 3.2 million stillborn babies, 4 million neonatal deaths and more than half a million maternal deaths as a result of complications associated with pregnancy and childbirth (Hogan et al., 2010; WHO, 2006; WHO, 2005). More than half the maternal deaths take place within one day of birth (Time, 2016; UNICEF, 2009). Efforts to reduce deaths among women from complications related to

pregnancy and childbirth have been less successful than other areas of human development, with the result that having a child remains among the most serious health risks for women (UNICEF, 2009).

Maternal survival has significantly improved since the adoption of the MDGs. The maternal mortality ratio dropped by 45 per cent worldwide between 1990 and 2013, from 380 maternal deaths per 100,000 live births to 210. Many developing regions have made steady progress in improving maternal health, including the regions with the highest maternal mortality ratios (United Nations, 2015). For example, in Southern Asia the maternal mortality ratio declined by 64 per cent between 1990 and 2013, and in sub-Saharan Africa it fell by 49 per cent. Despite this progress, every day hundreds of women die during pregnancy or from childbirth-related complications (United Nations, 2015).

Profound inequalities in access to and use of reproductive health services persist within and across regions. The high number of maternal deaths in some areas of the world reflects inequities in access to health services, and highlights the gap between rich and poor. Almost all maternal deaths (99%) occur in developing countries. More than half of these deaths occur in sub-Saharan Africa and almost one third occur in South Asia. More than half of maternal deaths occur in fragile and humanitarian settings (WHO, 2015).

In the developing regions, there is a 31 percentage-point gap between urban and rural areas in the coverage of births attended by skilled health personnel, but even this large disparity masks the range of inequalities among regions. The largest difference between rural and urban coverage is found in Central Africa, at 52 percentage points. In contrast, Eastern Asia has no gap; 100 per cent of births are attended by skilled health personnel in both urban and rural settings (United Nations, 2015). In 2013, most of these deaths were in the developing regions, where the maternal mortality ratio is about 14 times higher than in the developed regions. Globally, there were an estimated 289,000 maternal deaths in 2013, equivalent to about 800 women dying each day. Maternal deaths are concentrated in sub-Saharan Africa and Southern Asia, which together accounted for 86 per cent of such deaths globally in 2013 (United Nations, 2015). Most of these deaths are preventable (United Nations, 2015; De Lange et al., 2008; Ozumba and Nwogu-Ikojo, 2008; Alves, 2007).

Based on data from 2003–2009, haemorrhage was the cause of the greatest number of maternal deaths. It accounted for more than 27 per cent of maternal deaths in the developing regions and approximately 16 per cent in the developed regions. Other major complications include infections, high blood pressure during pregnancy, complications from delivery and unsafe abortion. Proven health-care interventions can prevent or manage these complications, including antenatal care in pregnancy, skilled care during childbirth and care and support in the weeks after childbirth (United Nations, 2015).

According to the World Health Organization (2005) women in sub-Saharan Africa have a 1:31 risk of dying as a consequence of childbirth, compared with a 1:4300 risk in high income countries (WHO, 2010). Maternal mortality (MM) is an indicator of health services in a country and is, essentially, a problem of low and middle income countries (LMIC). In spite of the efforts in many sub-Saharan countries to reduce the maternal mortality ratio over recent decades, it shows no evidence of decline; in fact, the MMR even remained the same in some countries/regions, such as sub-Saharan Africa. The adverse effect of HIV on women's health in sub-Saharan Africa appears to be an important contributing factor to poor progress towards the millennium developmental goals (MDG) (Hogan et al., 2010; Wilmoth et al., 2010).

A key strategy for reducing maternal morbidity and mortality is ensuring that every birth occurs with the assistance of skilled health personnel, meaning a medical doctor, nurse or midwife. Progress in raising the proportion of births delivered with skilled attendance has been modest over the course of the MDG time frame, reflecting lack of universal access to care (United Nations, 2015). Globally, the proportion of deliveries attended by skilled health personnel increased from 59 per cent around 1990 to 71 per cent around 2014. Yet this leaves more than one in four babies and their mothers without access to crucial medical care during childbirth. Wide disparities are found among regions in the coverage of skilled attendance at birth. Coverage ranges from universal in Eastern Asia and nearly universal (96 per cent) in the Caucasus and Central Asia to a low of about 52 per cent in sub-Saharan Africa and Southern Asia. These two regions have the highest rates of maternal and newborn mortality in the world (United Nations, 2015).

Variation in stillbirth rates across high-income countries and large equity gaps within high-income countries persist. If all high-income countries achieved stillbirth rates equal to the best performing countries, 19 439 late gestation (28 weeks or more) stillbirths could have been avoided in 2015 (Flenady, Wojcieszek, Middleton, Ellwood, Erwich, Coory et al., 2016).

The proportion of unexplained stillbirths is high and can be addressed through improvements in data collection, investigation, and classification, and with a better understanding of causal pathways. Substandard care contributes to 20–30% of all stillbirths and the contribution is even higher for late gestation intrapartum stillbirths. National perinatal mortality audit programmes need to be implemented in all high-income countries (Flenady et al., 2016). The need to reduce stigma and fatalism related to stillbirth and to improve bereavement care are also clear, persisting priorities for action. In high-income countries, a woman living under adverse socioeconomic circumstances has twice the risk of having a stillborn child when compared to her more advantaged counterparts. Programmes at community and country level need to improve health in disadvantaged families to address these inequities (Flenady et al., 2016). Skilled care before, during and after childbirth can save the lives of women and newborn babies (WHO, 2015).

2.3. Importance of partograph

Partogram is a universal tool for monitoring of labour (Ogwang, Karyabakabo and Rutebemberwa, 2009). Yisma et al. (2013a) after conducting a cross-sectional quantitative study in Ethiopia reported that, the use of the partograph is a well-known best practice for quality monitoring of labour and subsequent prevention of obstructed and prolonged labour. Various studies have revealed that using the partograph can be highly effective in reducing complications from prolonged labour for the mother and the newborn (Bazirete, 2014; Fawole et al., 2010). The labour graph has also been shown to be effective in preventing prolonged labour, in reducing operative interventions, and in improving the neonatal outcome. Proper utilization of the labour graph therefore results in the reduction of maternal mortality and morbidity owing to obstructed labour which leads to the prolonged labour, augmented labour, uterine rupture, caesarian sections and intrapartum foetal death (Shokane, 2011).

Literature in the recent past align itself with the notion that partograph facilitates certain decision-making with positive outcomes for the survival of mothers as well as the foetus. For instance notes that even in resource-poor countries like Ethiopia, utilization of the partograph is conceived to be important in assisting midwives and obstetricians making timely decisions and facilitating better care, thereby averting life threatening complications (Yisma et al., 2013b). Conceptualizing maternal mortality through lenses of disaster risk reduction (Sharmin et al 2014; Lakshmidivi et al., 2012), highlights the predictive attributes of the partograph by noting that it encourages easy and early recognition of poor progress in labour, fittingly rendering it an early warning system. Other desirable attributes identified include the ability to significantly reduce the workload of record-keeping i.e. unlike the traditional way which largely kept delivery related data and information under mutually exclusive files (Abebe et al., 2012:13).

Opiah et al. (2012) used a structured questionnaire administered to 165 midwives and reported that 84% of the midwives knew what the labour graph was, and that 92.7% indicated that the use of the labour graph reduces maternal and child mortality. About 50.6% of the midwives from Study site 1 and 98.8% from Study site 2 indicated that it was routinely utilized in their centers. Fahdhy and Chongsuvivatwong (2005) compared the use of midwives trained to employ the partograph versus standard midwifery care without the partograph. Seventy-one of three hundred and four labours plotted on the partograph progressed beyond the alert line. The study reported significant decreases in obstructed labour, oxytocin use and Apgar scores less than 7 at 1 minute, but reductions were non-significant. A study on the assessment of labour graph use during labour conducted in Dar es Salam reported a 70% use, but with only 2% of the labour graph fulfilling the standard monitoring of the foetal heart rate (Ogwang et al., 2009). Studies conducted elsewhere in Africa have reported poor labour graph utilization in lower health facilities (Fawole et al., 2010; Oladapo, Daniel and Olatunji, 2006) and a high utilization rate in a tertiary hospitals (Fawole and Fadare, 2007).

Women monitored with the two-hour action line required more interventions, like more oxytocin augmentation, without improving maternal and foetal outcomes, than with the four-hour action line. The two-hour action line has been criticised for increasing

unnecessary interventions. Although the four-hour action line was recommended, it is argued that four hours is too long and that dangerous omissions may occur which can lead to maternal or foetal death (Fawole and Fadare, 2007).

According to Fawole and Fadare (2007) improper use of the partograph during labour was reported to have resulted in missed opportunities to diagnose timely cephalo-pelvic disproportion, mal presentations, foetal abnormalities and other causes of obstructed labour. Obstructed labour led to 8% of the maternal deaths worldwide, 11.3% of maternal deaths in Bangladesh, 26.2% in a study of a community based in Uganda, 45.5% in a hospital-based study in Ethiopia, and 36% in Malawi, concluding that a careful assessment of engagement and descent of the presenting part is important to prevent the occurrence of obstructed labour. The partograph, when used correctly, is effective, and helps to ensure careful monitoring of the woman in labour, to recognise and respond to complications in a timely manner, to avoid unnecessary interventions, thus preventing maternal and neonatal morbidity or mortality (Fawole and Fadare, 2007).

Partograph have proved to be useful in reducing both maternal and perinatal mortality. While the labour graph is a very valuable tool for managing labour, it fails to identify risk factors present before labour started (Hofmeyr, Haws, Bergström, Lee, Okong, Darmstadt et al., 2009). Hofmeyr et al. (2009) further highlights that, in LMIC settings, labour graph use is recommended for monitoring all women in labour and can serve as a guide for timely referral to comprehensive emergency obstetric care facilities.

Research shows that use of the partograph to manage labour results in better outcomes for mother and baby by increasing timely and appropriate interventions including C/S deliveries when medically necessary or absolutely indicated, and by avoiding unnecessary C/S deliveries when labour is not prolonged. Labour graphs are not needed if a C/S delivery is conducted before labour, or if a woman arrives in a critical condition (Hofmeyr et al., 2009).

Use of the labour graph for decision-making during routine labour can be encouraged with further instruction for providers in the importance and use of labour graphs, along with consistent supervision, feedback and periodic refresher training. Involving a broad range of stakeholders, including pre-service educators, professional organizations,

clinical supervisors and hospital administrators can help create the enabling environment needed to implement and sustain the change (Hofmeyr et al., 2009).

2.4. The utilization of partograph

The first WHO partograph or 'Composite partograph', covers a latent phase of labour of up to 8 hours and an active phase beginning when the cervical dilatation reaches 3 cm. The active phase is provided with an alert line and an action line, drawn 4 hours apart on the partograph as aids to monitoring labor. This partograph is based on the principle that during active labor, the rate of cervical dilation should not be slower than 1 cm/hour. A lag time of 4 hours between slowing of labour and the need for intervention is unlikely to compromise the foetus or the mother and avoids unnecessary intervention. Since a prolonged latent phase is relatively infrequent and not usually associated with poor perinatal outcome, the usefulness of recording the latent phase of labour in the partograph has been questioned (Tayade and Jadhao, 2012). Moreover, differentiating the latent phase from false labour being difficult, diagnosis is often made in retrospect (Mathai, 2009). To alleviate these disadvantages, a WHO 'Modified Partograph' was introduced by removing the latent phase and considering the beginning of active phase at 4 cm dilatation of cervix instead of 3 cm. There were some other minor changes which include considering two squares in 1 hour instead of one square in 1 hour in cervical dilatation curve (Tayade and Jadhao, 2012; Mathews, Rajaratnam, George and Mathai, 2007).

The partograph provides a framework for assessing maternal and foetal condition and labour progress during labour. Maternal condition is monitored to assess the well-being of the mother. If the mother's well-being is compromised, certainly the foetal condition will also be compromised and labour may not be allowed to continue, to save the lives of both (Khonje, 2012). Maternal condition is observed through the checking of blood pressure which helps to detect pre-eclampsia and eclampsia. The pulse rate is observed to detect dehydration during labour. Temperature checking helps to identify raised temperature which indicates sepsis. Urine output is checked to exclude proteinuria and dehydration, but also to keep the bladder empty. A full urinary bladder obstructs foetal head descent (Khonje, 2012).

Foetal condition is monitored to assess the well-being of the foetus. If foetal condition is compromised, even if the mother is healthy, normal labour may also be discontinued by an intervention to save the life of the baby. In addition, foetal heart-rate monitoring is assumed to identify babies at risk of intra-uterine hypoxia leading to intra-uterine death (Khonje, 2012).

The state of the membranes indicates the risk of the foetus and the mother to ascending infections in the case of prolonged rupture. The state of the colour of liquor can indicate whether the foetal condition is compromised or not, in the case of meconium staining of liquor, the midwife, in agreement with the obstetrician, would decide on the method of delivery (Khonje, 2012). During labour, assessment of the membranes and liquor can assist in evaluating foetal wellbeing, and is documented on the partograph using the universal abbreviations, e.g. (MI) membranes intact, (CL) clear liquor, (MSL) meconium stained liquor, (SROM) spontaneous rupture of membranes and (ARO) artificial rupture of membranes. Membranes should not be ruptured artificially unless the cervix is fully effaced and is 3cm and more dilated and there are regular uterine contractions. This should be accompanied by a reasonable descent of the foetal head (Nolte, 2008:21). The presence of meconium in liquor may be an indication of foetal distress resulting from intrauterine hypoxia of the newborn; therefore, continuous foetal heart monitoring using the CTG may be required (Louis, Sundaram, Mukhopadhyay, Dutta and Kumar, 2014; Mundhra and Agarwal, 2013; Ross, 2005). Labour progress is captured through monitoring cervical dilatation which indicates whether labour is precipitated, normal or prolonged. Precipitated and prolonged labours harbor the potential risks of postpartum haemorrhage (Neilson, Lavender, Quenby and Wray, 2003).

Meaningful interpretation of the cervical dilatation is aided by alerts and action lines on the graph. An alert line is a graphic line drawn from 4cm to 10cm dilatation. The role of the alert line is to separate normal labour from abnormal labour. The crossing of the alert line is associated with cephalo-pelvic disproportion and foetal distress, which increase the need for intra-partum resuscitation, whereas an action line is a graphic line drawn two hours to the right of the alert line and represents poor progress of labour. Poor and prolonged labours are a potential source of maternal and foetal distress, maternal dehydration, exhaustion and uterine rupture (Neilson et al., 2003).

The partogram is a practical graph for medico-legal evaluation in the case of contentiousness (Leanza, Leanza and Monte, 2011).

A randomized study was conducted on 434 women in Mexico in 1966 to test for the effectiveness of the utilization of the partograph during labour using Friedman's partograph and a non-graphical descriptive chart. The women were randomized to either Friedman's partograph or a non-graphical descriptive chart. The study revealed that those who were not put on the partograph had more operative deliveries and more babies with low apgar scores at 5 minutes (Shokane, 2011). Another study conducted in Karachi by Javed, Bhutta and Shoaib (2007) tested the role of the partograph in preventing prolonged labour. The objective of the study was to determine the effect of the partograph on the frequency of prolonged labour, augmentation of labour, operative deliveries and appropriate interventions based on the partograph to reduce maternal and perinatal complications. A case-controlled prospective and interventional study on 1000 women in labour was carried out in the obstetric units of Jinnah Postgraduate Medical Centre, Karachi. Five hundred (500) women were studied before and after the introduction of the partograph. The results showed that there was a reduction in both the duration of labour and the number of augmented labour and vaginal examinations. It was concluded that by using the partograph to monitor pregnant women in labour reduced the frequency of prolonged labour, augmented labour, postpartum haemorrhage, ruptured uterus, puerperal sepsis and perinatal morbidity and mortality rates. The aim of the utilization of partograph is to empower midwives with plotting, analysis and interpretation skills when monitoring pregnant women in labour (Shokane, 2011; Javed et al., 2007).

Furthermore, Lavender et al. (2006) support that if progress of labour crossed the action line, a diagnosis of prolonged labour was made and managed according to protocol. The results of this study showed that the use of the 4-hour action line partograph improved the maternal and neonatal outcomes.

The utilization of partograph as a tool for intrapartum monitoring by midwives in sub-Saharan Africa is still a challenge, a notion supported by the study conducted in South West Nigeria by Fawole, Hunyinbo and Adekanle (2008) who found that a partograph is commonly not used to monitor Nigerian women in labour since knowledge about the partograph is poor. Furthermore, the authors concluded that the maternal mortality

rate in Nigeria is a major public health issue and continues to rise since a partograph is not effectively used as a tool for monitoring labour. Hence, Dungal (2007) stated that the partograph as a tool serves as an initial warning system assisting in early decision on transfer actions and ongoing evaluation of the effect of midwifery interventions. Therefore, if utilized effectively, the partograph can reduce complications from prolonged labour which might be puerperal sepsis, uterine rupture, and postpartum haemorrhage. Nakkazi and Asis (2001) also pointed out that the utilization of the partograph to monitor pregnant women in labour saves the women's lives by ensuring that labour is closely monitored and life-threatening complications such as obstructed labour are identified and treated. However, despite the WHO recommendation, the partograph is still not widely used in Uganda and in other developing countries. Nakkazi and Asis (2001) further indicates that midwives often feel that completing the partograph is an additional time-consuming task, and they do not always understand how the utilization of the partograph to monitor pregnant women in labour can be life-saving.

This tool is now applied worldwide to monitor labour progress, foetal and maternal wellbeing. The underlying issue is to prevent obstructed labour through early detection of abnormal progress of labour and initiation of appropriate clinical responses (Windrim, Seaward, Hodnett, Akoury, Kingdom, Salenieks et al., 2007).

Since its inception, the lay-out of the labour graph has undergone changes, especially in the presence or absence of a latent phase and the shape of the grid, with the result that there are about 12 versions of the original labour graph which makes universal implementation very difficult (Van Bogaert, 2004).

The findings from a study conducted in South Africa by Singh (2013) revealed that 100% of participants were familiar with the partograph. This response is expected, since participants would have used a partograph at some stage of their training or during their work experience. A significant number of participants (97%) also indicated that partographs were available in the labour wards. Since the newer designs of the maternity carrier cards are more like booklets and include a partograph, it is always available (Singh, 2013). A few clients who were foreigners had cards without a partograph, and that situation posed a challenge. To overcome this challenge, the foreign clients were usually given South African maternity cards with their notes

clipped in. The same situation applied to clients that came in as non-clinic case or from private practitioners (Singh, 2013).

2.5. Challenges in the utilization of the partograph

The literature indicates that factors still hinder appropriate utilization of the partograph such as lack of detailed knowledge of the partograph, non-availability of the partograph, poor staff numbers, and inadequate training are factors that work against the effective utilization of the partograph in the study facility (Asibong et al., 2014). Furthermore a gross deficiencies have been highlighted regarding knowledge about normal characteristics during labour (Fawole et al., 2010).

Midwives frequently do not utilize the partograph appropriately when monitoring pregnant women in labour by not plotting or incomplete plotting and not analyzing nor interpreting the findings (Shokane, 2011). With regards to the knowledge of different components of the partogram, Yisma et al. (2013a) in a cross-sectional quantitative study to assess knowledge and utilization of partograph among obstetric care givers in public health institutions of Addis Ababa, affirms that knowledge of the function of both alert line and action line were poor.

In a study conducted by Bazirete (2014) several challenges regarding the utilization of the partograph, were pointed out, shortage of skilled birth attendants. There was also reveal shortage of staff per shift in labour ward. The majority of respondents (45%) claimed that they worked as 1 person per shift, 33.6 % work at two, 20.6% work at 3 and the minority represented by 0.8% confirm that they work at 4 per shift.

The findings from a study conducted by Opiah et al. (2012) indicated factors affecting the utilization of the labour graph were: the non-availability of the labour graph, (30.3%) a shortage of staff, (19.4%) little or no knowledge of the use of the labour graph (22.2%) and 8.6 percent indicated that it was time-consuming. A significant relationship existed between the knowledge of the partograph and its utilization, and between midwives' years of experience and its utilization. However, this study also showed that, despite midwives' good knowledge of the partograph, there was poor utilization of labour monitoring in both study sites (Opiah et al., 2012).

Findings from a questionnaire-based survey conducted in Ogun State, Nigeria,

indicated that, out of 216 midwives who were aware of the partograph, 36 (16,7%), 119 (55,5%) and 61 (28, 2%) demonstrated poor, fair and good levels of knowledge, respectively. Only 39 (9,8%) of the midwives routinely employed the partograph for labour management, and almost half of them had a poor level of knowledge (Oladapo et al., 2006).

The finding from a study conducted by Mathibe-Neke et al. (2013), several factors were reported to hinder the proper use of the partograph. The factors that were cited by respondents as contributing to the inefficient use of partograph were: shortage of midwives (65%), which seemed to be a major concern that also limits an opportunity to attend in-service training as reflected by 38% of respondents who never attended in-service; the shortage of partographs, the increased number of students to be facilitated in partograph use, lack of understanding the skill of recording, lack of commitment by midwives and ignorance. The outcome of a multi-Centre clinical trial undertaken in the Pretoria Academic Complex indicated that it was not possible to have a midwife for each woman due to midwives' shortage, and a midwife was allocated to care for two to three women. Other cited factors were discrepancies between midwives and obstetricians regarding per vaginal examination findings, early plotting before the woman is in an active stage of labour and transfers or referrals from other hospitals (Mathibe-Neke et al., 2013).

In areas of the world with high rates of home delivery, stillbirths are prevalent, but they are difficult to distinguish from early neonatal deaths (Carlo, Goudar, Jehan, Chomba, Tshefu, Garces et al., 2010; Stanton, Lawn, Rahman, Wilczynska-Ketende and Hill, 2006; Lawn, Shibuya and Stein, 2005). Country neonatal and perinatal mortality rates cover a wide range with obvious differences and similarities. However, analyzing and comparing mortality rates between countries is also fraught with pitfalls, as minor differences or similarities may be the result of real distinctions in mortality levels, or may be due to diverging definitions and reporting systems, sources of data, or levels of accuracy and completeness (WHO, 2006). Therefore, examining both stillbirths and early neonatal deaths is important in an evaluation of perinatal programs that are designed to reduce mortality (Carlo et al., 2010).

A study conducted in South Africa by Singh (2013) demonstrated that although a significant majority of participants declared that the partograph was 'always' used,

there were those participants that detailed some reasons for non-use of the partograph. Clients that came in 'fully dilated' or 'head on the perineum' were indicated by the greater number of responses. Some of the participants indicated 'early labour/latent labour' for non-use of the partograph during labour.

Challenges such as Staff shortages, busy departments and limited resources were also listed as reasons for non-usage of the partograph. Researchers from other studies also indicated that busy departments, staff shortage and limited resources played a huge role in the under-utilization of the partograph (Singh, 2013; Opiah et al., 2012; Nyamtema, Urassa, Massawe, Massawe, Lindmark and Van Roosmalen, 2008). Furthermore, lack of time as a reason for not completing partographs has been reported in various studies (Singh, 2013; Fatusi, Makinde, Adeyemi, Orji and Onwudiegwu, 2008). Having stated above the factors for non-usage of the partograph, one can conclude that it leads to sub-optimal use of the partograph and affects the quality of the use of the partograph during labour. This could hinder early detection of complications and timely intervention that are the most important activities to prevent perinatal mortality and morbidity (Yisma et al., 2013a; Singh, 2013; Nyamtema et al., 2008; Fatusi et al., 2008).

2.6. Theoretical framework guiding the research study

The utilization of the partograph in this study will be assessed to evaluate the quality of care provided to women during labour by midwives and obstetricians, according to three major approaches to the evaluation of quality of care identified and simplified by the dimensions' model provided by Donabedian (1980). The Donabedian (1980) model for evaluating quality of care comprising the dimension of structure, process and outcome provides a suitable conceptual framework with which to consider the utilization of the partograph.

2.6.1 Structure

According to Donabedian (1980) structure means the relatively stable characteristics of the physical and organizational setting in which care takes place, of the providers of care, of the equipment and resources they have at their disposal. In addition, this refers to the administrative organization including management, economic

organization such as financing and environmental conditions (Donabedian, 1966). This includes the number, distribution and quality of health professionals, the availability of equipment and the physical aspects of the facilities required to facilitate service delivery and quality health care.

Structure, therefore, is based on assumptions that, when certain conditions are satisfied, good care is more likely to be provided because it influences the kind of care that is provided (Donabedian, 1980). Hence structure is necessary for the provision of quality midwifery and obstetric care. In this study, the researcher has taken into consideration two aspects of the framework, that is, structure and process. Structure refers to human resources (midwives and obstetricians) in particular, years of experience in the labour ward and knowledge of the partograph, while process refers to the execution of duties which, in this study, comprises the monitoring of the progress of labour through use of the partograph.

2.6.2 Process

Process is the primary focus of this study since it is the most direct route to an assessment of the quality of care rendered to women in labour. In addition, process is a set of activities carried out by the midwives and obstetricians to meet the set standards, and to facilitate the actions and procedures carried out to ensure optimal quality care to all woman in labour (Donabedian, 1980).

According to Donabedian (1980) process refers to the skills used to provide health care that could include preventive, diagnostic, therapeutic and rehabilitative service, as well as the procedures and activities required to deliver health care by providers and the support system (Donabedian, 1980). The process of care is the care itself, and is measured in this study only by all events recorded in the records and may reflect the standard of care. In this study, the process of care refers to the implementation which is the actual utilization of the partograph, whereby monitoring and recording of foetal and maternal condition, progress of labour and treatment given during labour are conducted for early identification of risk factors as well as possible complications, and therefore execution of appropriate management timeously.

2.6.3 Outcome

Outcome means a change in a woman in labour's current and future health status that can be attributed to received health care and its effectiveness (Donabedian, 1980). In addition, outcome can be assessed in terms of the woman's health, well-being and degree of satisfaction, which indicates that the health care provided was indeed based on the assessed needs of the woman in labour and her newborn baby (Donabedian, 1980).

The outcome component has limitations, in that the woman in labour's health status and/or result does not depend on direct care received, but, apart from care, also on other influencing factors that need to be considered, such as social and emotional factors, input from the body mechanisms, the woman in labour's own contribution, medication and her family's contribution. In this study, the term 'outcome' will refer to the women's response to care rendered, that is, health status, well-being and degree of satisfaction.

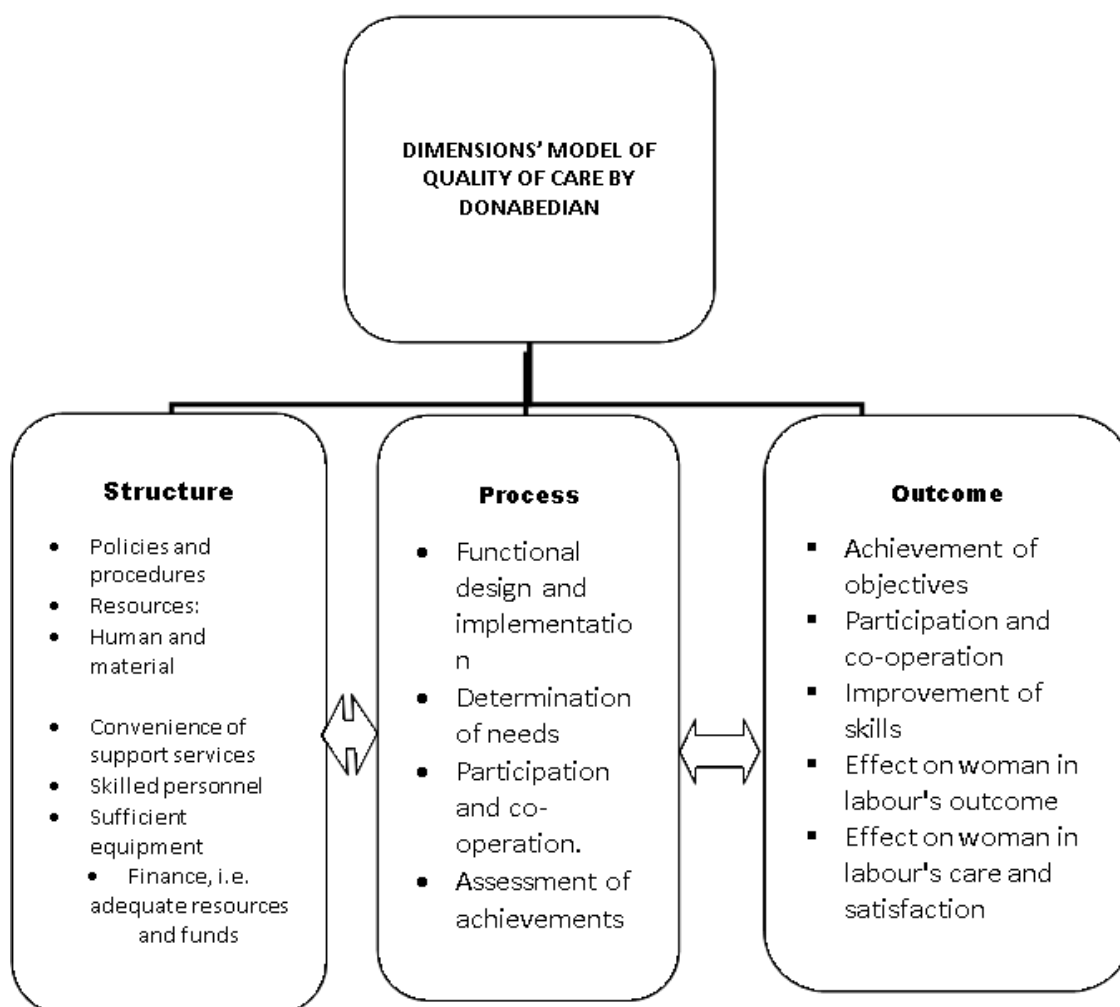


Figure 2.1: A diagrammatic illustration of the theoretical framework guiding the study

2.7. Eight principles of Tessier’s Model and application of those relevant to this study:

In conjunction with the Donabedian dimensions model of quality of care, the framework modified from the model developed by Tessier (2003) was also adopted in this study. Tessier Tessier (2003) model focuses on Essential Principles of Health Care Documentation to be considered for accurate, accessible and sharable documentation to take place. According to Tessier's (2003) model, there are eight (8) principles for consideration namely, Unique Woman in Labour Identification, Accuracy, Completeness, Timeliness, Accountability, Confidentiality, Legibility and Availability of Resources (Figure 2.2).

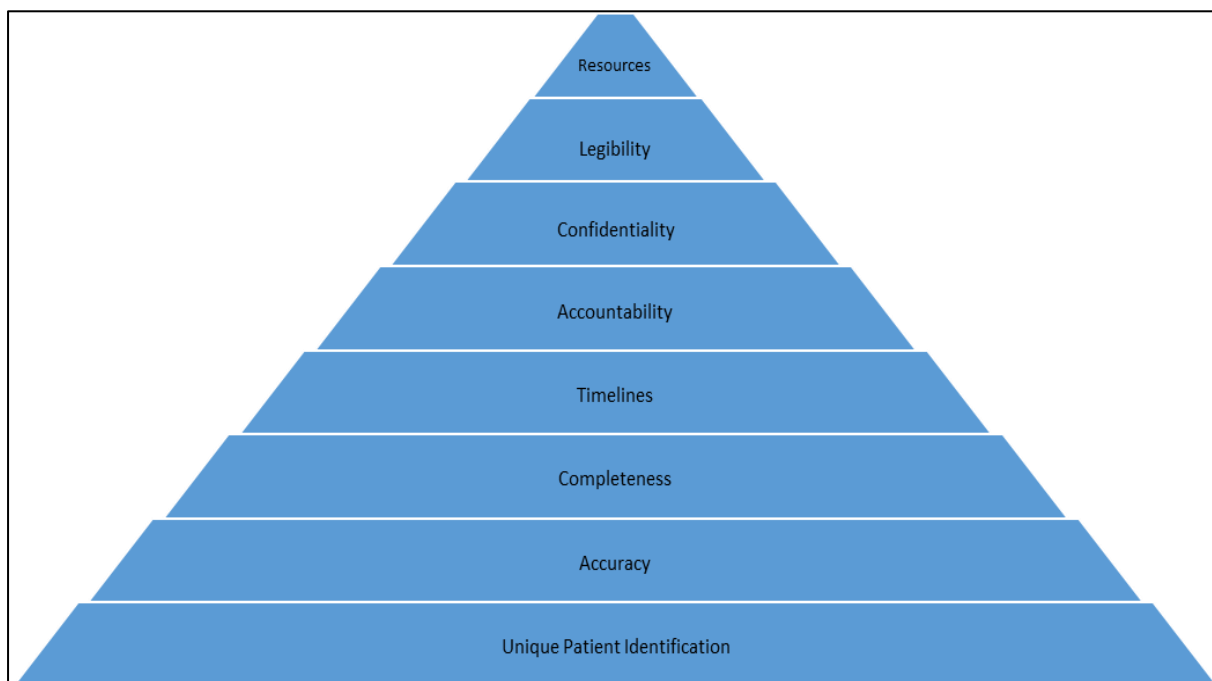


Figure 2.2: Eight principles of Tessier's model (Tessier, 2003).

2.7.1. Unique Identification

It is a significant principle in recording. This entails identification of each patient/client by her/his name, surname, age, registration number, physical or residential address and or contact status (Tessier, 2003). In this study all women's personal maternity record files had the latter information well documented on the cover page.

2.7.2. Accuracy

This requires the use of appropriate, accepted standard terminology, standardized symbols and abbreviations to avoid misinterpretations (Tessier, 2003). In this study, accuracy should be ensured throughout the documentation process by ensuring that accurate and correct information is recorded, such as the name, surname and registration number, investigations conducted, diagnosis, treatment regime and contact details of the woman in labour. All the necessary and significant information should be documented timeously and clearly by the midwife or obstetrician who had an encounter with the woman in labour.

2.7.3. Confidentiality

Policies are generally in place to control confidentiality and security and there are movements towards enhancing their enforcement through audit trails (Tessier, 2003). In this study confidentiality of women in labour's records was ensured by keeping them under lock and key where they can only be accessed by midwives and obstetricians.

2.7.4. Completeness

Completeness of the information recorded should meet institutional policy or other requirements for specific reports (Tessier, 2003). Complete documentation in this study means that the information recorded in the partograph has been recorded legibly, accurately with a written date, time, observations concerning progress of labour, condition of the foetus and woman in labour, treatment rendered and midwife's or obstetrician's signature. All observations and assessments conducted by midwives and obstetricians should be completely recorded without any gaps to ensure consistency.

2.7.5. Timeliness

It is the principle that facilitates health care documentation during or immediately after an event has occurred, while one's memory can still remember everything about what happened (Tessier, 2003). A record of the date and time of the phenomenon is of vital significance to this study since it alerts midwives and obstetricians as to when did an assessment and intervention occur. This will assist in cases of occurrence of complications, e.g. cephalo-pelvic disproportion.

However, the application of the principle of timeliness was inconvenient to apply to the second part of this study that focuses on auditing of the information documented in the old partograms because it would be difficult to prove that documented data was done timeously. The researcher could only rely on the date and time as written in the old partograms.

2.7.6. Accountability

Tessier (2003) summarised the basic principles and emphasised the importance of documentation being shared among all members of the clinical team. She further highlighted that teamwork means that there is a recognition that good patient care requires the skills of many people, which implies an understanding and respect for the contributions of everyone, and that there is a commitment to share ideas, information, responsibilities and accountability. Therefore, there should be a willingness to share responsibility for all aspects of patient care. This includes the sharing of responsibility in terms of identifying problems, defining solutions and taking action to resolve problems of all kinds.

There must also be shared accountability, for ensuring that performance is accurately reported to all parties who have a right to know. All staff should take the initiative to fix problems, since all problems are shared, and everyone should have the attitude that it is appropriate for them to attend to problems which may arise. No-one should have the view that any issue is somebody else's problem (Tessier, 2003). In this study, midwives and obstetricians, therefore remain responsible and accountable for their documentation with regard to progress for women in labour and their endorsed signatures should be legible.

2.7.7. Legibility

All recorded information on patients/clients records should be legible, that is, clearly written and readable by everybody because ambiguity of information recorded may impact on the plan or decision which management decides to institute thus causing delay and further complications (Tessier, 2003). In this study, information recorded in partograms was expected to be clearly outlined from the time of admission up until delivery of the woman

2.7.8. Resources

Ultimately, for documentation to be achieved there should be availability of resources in the workplace (Tessier, 2003). Material resources such as maternity case records with partographs, cardiotocographs (CTGs), dynamaps, fetoscopes, resuscitation

equipment, the necessary stationary and adequate personnel, such as midwives and obstetricians are vital in this study.

2.8. Conclusion

This chapter covered the literature review related to the importance and the utilization of the partograph, challenges encountered in the utilization of the partograph as well as the theoretical framework underpinning this study. The following chapter covers the research methodology underpinning the study.

Chapter Three

Research Methodology

3.1. Introduction

Research methodology is seen as the glue that holds the study together because it gives structure to the research project and shows how the major parts of the research project work together to address the research question under study (Trochim and Donnelly, 2007). This chapter therefore outlines the process and steps that were followed to achieve the research objectives of this study. The outline of this chapter therefore includes the research design, the research setting, the target population, inclusion criteria, sampling technique, sample size, research equipment, the data collection procedure, validity and reliability, ethical issues, data analysis and the dissemination of information.

3.2. Research approach and design

A quantitative approach was used in this study. Quantitative research is a formal, objective, rigorous, systematic process for generating information about the world (Grove, Burns and Gray, 2014). It is the investigation of phenomena that can be precisely measured and quantified involving a rigorous and controlled design (Polit and Beck, 2008). The quantitative approach was chosen because it is systematic and the researcher was able to progress logically through a series of steps.

A cross sectional, descriptive, exploratory and non-experimental design was used in this study. Application of both descriptive and exploratory design through a quantitative approach allowed the researcher to explore and describe the phenomena. Descriptive research is the exploration and description of phenomena in real life situations (Grove et al., 2014). This study explores and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni district.

3.3. Research setting

The study was conducted in a labour ward at a Regional Hospital in the eThekweni District. It is a 1200-bed health facility with a 34-bed labour ward which serves the surrounding area, up to and including part of the Eastern Cape. This hospital is staffed by midwives and obstetricians who are medical doctors working in the maternity department (consisting of consultant obstetricians, medical officers, interns and registrars on training).

3.4. Target population

The population is the entire aggregation of cases which the researcher is interested in (Polit and Beck, 2004). The target population for this study comprised the midwives and obstetricians working in the maternity admission room and labour ward in a Regional Hospital in the EThekweni District. There were 101 midwives and 48 obstetricians on day and night duty in the maternity section respectively. According to statistics, there were approximately 1010 deliveries per month in the labour ward from January to December 2010. The questionnaires were directed at all midwives, irrespective of whether they had specialized in midwifery (Advanced midwifery and Neonatal Nursing Science) or not, and all obstetricians including interns who were currently working in maternity admission room and labour ward.

The second target population of this study involved the sampling and selection of partograms, completed by midwives and obstetricians for women who had delivered per normal vaginal delivery over a period of one month (September 2010) as records.

3.5. Sampling technique and sample size

Sampling is the process used by the researcher to select the sample from the true population in order to obtain information regarding a phenomenon in a way that represents the population of interest (Brink, Van Der Walt and Van Rensburg, 2006). Probability sampling will be used in this study. Probability sampling is generally used in quantitative studies and involves the simple random selection of elements (Polit and Beck, 2004).

Simple random sampling was used to select 70 midwives and 30 obstetricians who took part in this study. In this instance, each midwife and obstetrician was listed separately, and therefore had an equal chance of being included in the sample. This was conducted by placing numbers in a bowl and drawing them out one at a time. It helped the researcher to overcome variables and problems that might otherwise bias the study.

The data obtained from the birth register of the Regional hospital revealed that there were 1100 deliveries during the month of September, 2010. Every tenth woman's file was obtained from medical records and was used as a source of information on previously used partograms for the retrospective section of the study. Selecting the partographs was done by selecting the partograph randomly as it was done for the midwives and obstetricians.

Inclusion criteria: The midwives and obstetricians who had three months and more experience of having worked in the labour ward were recruited to be part of this study, as well as partograms as records for women who only delivered per normal vaginal delivery during September 2010.

3.6. Research instrument and data collection process

3.6.1. Research instruments

In this study, two types of instruments were used, namely self-administered questionnaires and a checklist that was used to audit information that was written in the old partograph. A self-administered questionnaire that was used to collect data from midwives and obstetricians in this study was the questionnaire developed by the researcher using the literature, and in consultation with the research supervisor. A research instrument consists of a series of questions and other prompts for the purpose of gathering information from respondents (Brink et al., 2006).

The questionnaire used in this study was developed from the literature was used to collect data and the questions were coded for the midwives and obstetricians, and were hand-delivered to the respondents with the request that they complete the questionnaire on the same day and return the document to the researcher on the day

of data collection. The questionnaire that was used to collect data from Midwives and Obstetricians is divided into five sections, which are, Section A: Demographic data, Section B: Assessment on admission, Section C: Training on partograph use, Section D: Foetal condition, Section E: Progress of labour data. All questions were closed-ended questions.

The researcher also reviewed the partograms of women who delivered in September 2009. The second instrument for data collection was the checklist. It was developed by the researcher in consultation with the research supervisor adopting the principle of completeness that incorporated other Tier's Model principles of ensuring that all the information in the old partograms was written accurately, legible or clearly, timeously meaning that date and time was written.

3.6.2. Validity and reliability

Validity and reliability are major criteria for assessing the instruments' quality and adequacy (Polit and Beck, 2004).

3.6.2.1. Validity

Validity is defined as the degree to which an instrument measures what is supposed to measure (Polit and Beck, 2004). The instrument was based on the evaluation of the utilization of the partograph in a labour ward at a Regional Hospital in the EThekwini District. Content validity will be used as a means of ensuring the validity of the data collection instrument. The content of the self-reported questionnaire will be based on the objectives of the study. Content validity is defined as an assessment of how well the instrument represents all the components of the variable to be measured (Polit and Beck, 2004).

Table 3.1: Content validity

OBJECTIVE	Donabedian Model	QUESTIONNAIRE (Appendix 1)
To determine the midwives' and obstetricians' knowledge of the partograph in monitoring the progress of labour.	Structure component of the Donabedian Model	Section A Section B Section C Section D Section E
To describe utilisation of the partograph by midwives and obstetricians in the labour ward.	Process component of the Donabedian Model	Section A Section D Section E Appendix 2: Checklist for assessing partogram documentation or use by midwives and obstetricians
To identify factors that influence utilisation of the partograph to monitor progress of labour.	Process component of the Donabedian Model	Section A Section F

3.6.2.2. Reliability

Reliability is described as the degree of consistency or dependability with which an instrument measures the attitudes it is designed to measure (Polit and Beck, 2004). In this study, the instrument was pre-tested in a pilot study on five individuals who were not participate in the final data collection process of this project. A pilot study is small-scale version or trial run of the major study. By conducting pilot studies, problems can be ascertained early enough to enable improvement of the project or for assessment of the feasibility of the study (Brink et al., 2006). In the prospective study, 10 obstetricians and 10 midwives were included in the pilot study. In the retrospective chart review, 10 patient records of women who had had a normal vaginal delivery and in respect of whom a partogram had been completed were included in the pilot study. The pilot study was conducted and minor corrections were made to the instrument with the aid of an experienced researcher. The data obtained from pilot studies were not included in the analysis of the main study.

3.6.3. Data collection process

The researcher visited the selected institution, and requested the permission to conduct the study from Chief Executive Officer of the institution, explained the purpose of the study, and asked to meet with midwives and obstetricians to introduce herself to them and explain the purpose of the study. The researcher obtained written consent

and administered the questionnaires to those who had agreed and signed consent to participate in the study.

The questionnaire was handed out personally with the advantage of having an improved response rate (Brink et al., 2006). The researcher was available for the participant's questions or when they needed some clarification regarding the questionnaire.

A self-administered questionnaire, was used to collect data from 70 midwives and 30 obstetricians. The questionnaires were hand-delivered to the respondents with a request that they complete the questionnaire on the same day and return it to the researcher on the day of data collection. The data was collected over a period of two months, namely October and November, 2011.

For women's records: There were 1100 deliveries in September 2010. Every 10th file from all the files of women who delivered vaginally in September 2010 on the list was sampled, until one hundred (100) partograms had been obtained, which is nine per cent (9%) of the entire number of partograms that were reviewed. Women's records (partograms) were listed randomly to prevent biases and to ensure that the sample selection was truly representative of the partograms of women who delivered during the month of September 2010.

Confidentiality and anonymity was preserved during data collection and throughout the research study. Information gathered will not be held any longer than necessary as data on computers. It will also be destroyed after five years, once the report and dissemination of results by means of presentation at conferences and publication, has been completed. The data was collected over a period of two months during October and November in 2011.

3.7. Data analysis

The data was analyzed using the Statistical Package for Social Science (SPSS) Version 21, in the form of descriptive statistics with the use of frequency tables, percentages and cross-tabulations.

In respect of the assessment of the partograms, these were divided into complete and incomplete 'filling-in' using a modified scoring system of the 25-point score of the labour management checklist (Farrell and Pattinson, 2005). The modified system that was used included the labour section of the University of Pretoria's labour management checklist. This checklist was modified by combining the recording and plotting of cervical dilatation four-hourly and two-hourly in latent and active phases respectively into one point.

A checklist consisting of 10 parameters was drawn up from this 25-point score. Our modified scoring system therefore consisted of 10 points and consisted of the 10 clinical parameters (risk factors, foetal heart rate, state of liquor, caput and moulding, uterine contractions, cervical dilatation, level of the foetal head above the pelvic brim, blood pressure and heart rate, temperature and urine output, intravenous fluids and drugs). Where parameters were partly assessed or partly documented, a half-mark was allocated. Complete partograms were defined as those having at least 7.5 out of the 10 (75%) of all parameters correctly assessed. Incomplete partograms were those with less than 7.5 out of the 10 (75%) parameters correctly assessed (Farrell and Pattinson, 2005).

3.8. Ethical considerations

Ethical clearance was sought and secured from the University of KwaZulu-Natal Ethics Committee and permission was secured from the KwaZulu-Natal Department of Health to conduct this study. In addition, permission from the Chief Executive Officer of the institution where the study was conducted was obtained.

The eight principles of Tessier's Model (2003) and application of their relevant to this study was considered which included: Unique Woman in Labour Identification, Accuracy, Completeness, Timeliness, Accountability, Confidentiality, Legibility and Availability of Resources (Figure 2.2).

The participants' human rights were protected and it was ensured that the information they would provide for this study was treated with the utmost privacy and would not be shared nor disclosed to unauthorized people.

Consent was sought from respondents after the purpose of the study had been explained to them. It was explained that their participation was voluntary, and that, as such, they could decide to participate or withdraw from the study without the risk of incurring any penalties. Their privacy and confidentiality was maintained throughout the study, and anonymity was ensured by coding the questionnaires and by not seeking any identifying information.

Women's records, which in this study comprised of partograms, were not disclosed to anyone not providing direct care to women in labour. Permission to review women's records was sought from the Chief Executive Officer of the Regional Hospital where the study was conducted. Confidentiality and anonymity was preserved throughout the research study.

The women's records database was anonymized, that is, women's records were assigned a number rather than identifying them by name. Information gathered will not be held any longer than necessary by means of data on computers. This will also be destroyed after five years once the report and dissemination of the results, through presentation of these at conferences and publication of results, has been completed.

3.9. Data management

Data collected in this study will be stored to a private computer with an access code known only by the researcher was used to store the data, and hard copies of the data were kept under lock and key and will be destroyed by fire after a period of five years.

3.10. Dissemination of information

The results of the study will be disseminated in the form of a hard copy to the Regional Hospital and to the KZN Health Department for future use. Oral presentations of the results will be presented at conferences and will be submitted for publication in peer-reviewed professional journals, or in a variety of outlets on the internet. Anonymity and confidentiality will be maintained during the dissemination of information.

3.11. Conclusion

This chapter covered research methodology of the study, research approach, the design, the setting, population, sampling and sample size. The instrument was described and the validity with regard to the research objective was attended to. The data collection procedure, analysis, management, and dissemination of the findings. The next chapter will cover the presentation of the results.

Chapter Four

Presentation of Results

4.1. Introduction

This chapter entails the presentation of results and interpretation of the meaning of the results in relation to the study. The data is presented as mean (range), frequencies, and in the form of tables and graphs. The graphs are displayed as figures throughout this study. To reiterate the purpose of this study was to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni district, and the research objectives from this study were: (i) to determine the midwives' and obstetricians' knowledge of the partograph in monitoring the progress of labour; (ii) to describe the utilization of the partograph by midwives and obstetricians in the labour ward; (iii) to identify factors that influence the utilization of the partograph to monitor the progress of labour.

A total number of 70 midwives and 30 obstetricians and working at a Regional Hospital in the eThekweni district participated in this study. Regarding the quantitative retrospective review of the partograms, a total number of 100 partograms retrieved and used from the maternity record files of women who delivered vaginally in the labour ward at a Regional Hospital in the eThekweni District in September, 2010.

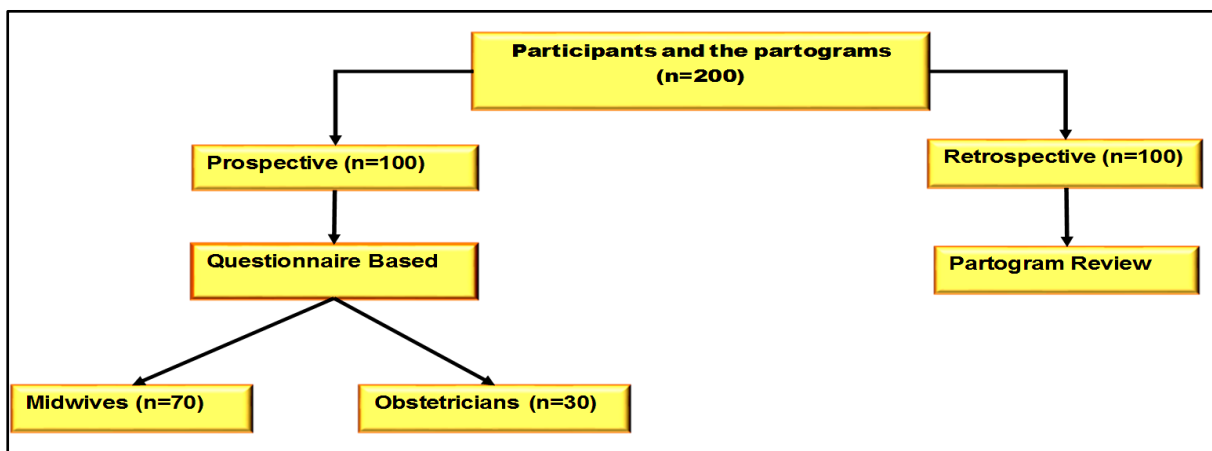


Figure 4.1: The study outline

4.2. Section A: Socio demographic characteristics

Section A presents the results of a prospective questionnaire-based study which included responses from a total of 30 obstetricians who were part of this study, irrespective of their categories, as they differentiated themselves either as consultants, registrars, medical officers or interns, as well as a total of 70 responses from midwives who were respondents working in the labour ward, irrespective of their basic midwifery and or advanced midwifery qualifications. The questionnaire recorded their responses to questions regarding gender, age, race, marital status, highest qualification and years of experience working in the labour ward. The demographic data of the said health care professionals are indicated in Table 4.1.

Table 4.1: General overview of the demographic data relating to all obstetricians and midwives (n= 100)

Variable	Obstetricians (n=30)		Midwives (n=70)	
Gender	Frequency	Percentage	Frequency	Percentage
Male	17	56.7%	01	1.4 %
Female	13	43.3%	69	98.6%
Total	30	100%	70	100%
Age(years)	Frequency	Percentage	Frequency	Percentage
20-30	13	43.3%	23	32.9%
30-40	12	40%	21	30%
40-50	04	13.3%	17	24.3%
50-60	01	3.4%	09	12.9%
>60	0	0%	0	0%
Total	30	100%	70	100%
Race	Frequency	Percentage	Frequency	Percentage
African	17	56.7%	67	91.4%
Indian	10	33.3%	02	7.2%
Coloured	01	3.3%	01	1.4%
Whites	02	6.7%	0	0%
Total	30	100%	70	100%
Marital Status	Frequency	Percentage	Frequency	Percentage
Single	16	53.3%	32	45.7%
Married	14	46.7%	32	45.7%
Divorced	0	0%	02	2.9%
Widowed	0	0%	03	4.3%
separated	0	0%	01	1.4%
Total	30	100%	70	100%
Experience in labour ward(years)	Frequency	Percentage	Frequency	Percentage
0-6	14	50%	47	67.1%
7-13	12	40%	10	14.3%
14-20	02	6.7%	02	2.9%
21-26	01	3.3%	07	10%
>26	01	3.3%	04	5.7%
Total	30	100%	70	100%

4.2.1. Gender and the profession of the participants

The findings from this study indicated that 17 (56.7%) of the obstetrician were males, while 13, (43.3%) were females. In the group of midwives, 69 (98.7%) were females and 1 (1.4%) was a male (**Figure 4.2**).

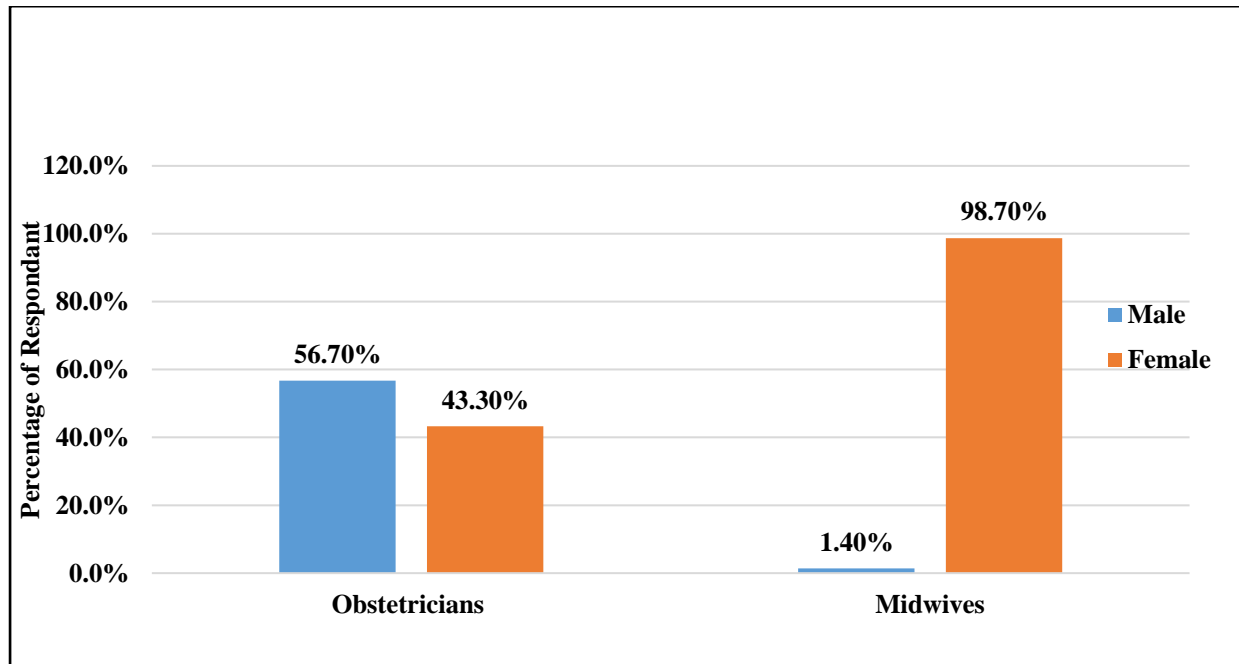


Figure 4.2: The gender of the respondents (n=30 obstetricians, n=70 midwives)

4.2.2. Age group and the profession of the respondents (n=30 obstetricians, n=70 midwives)

The results from this study indicated that 13 (43.3%) of obstetricians and 23 (32.9%) of the midwives were in the age group of 20-30 years; 12 (40%) of obstetricians and 21 (30%) of midwives were in the 30-40 year age group; 4 (13.3%) of obstetricians and 17 (24.3%) of midwives were in the 40-50 age group, whereas 1 (3.4%) of obstetrician and 9 (12.9%) of midwives were in the 50-60 age group. None of the respondents was above 60 years of age (**Figure 4.3**).

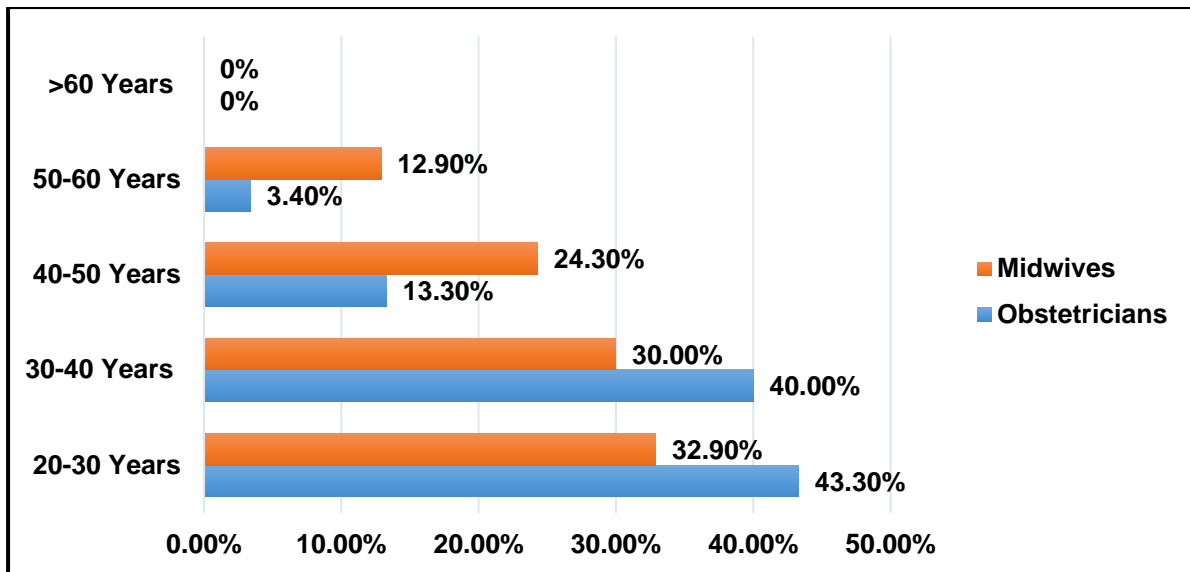


Figure 4.3: Comparison of the different age groups of obstetricians versus midwives (n=30 obstetricians, n=70 midwives)

4.2.3. Race and the profession of the respondents (n=30 obstetricians, n=70 midwives)

The results from this study indicated that in the groups of both obstetricians and midwives, 17 (56.7%) were Africans and obstetricians, 64 (91.4%) were Africans and midwives, 10 (33.3%) were Indians and obstetricians, 5 (7.2%) were Indians and midwives; 1 (3.3%) were colored and obstetricians, while 1 (1.4%) were colored and midwives. All the whites 2 (6.7%) were obstetricians (**Figure 4.4**).

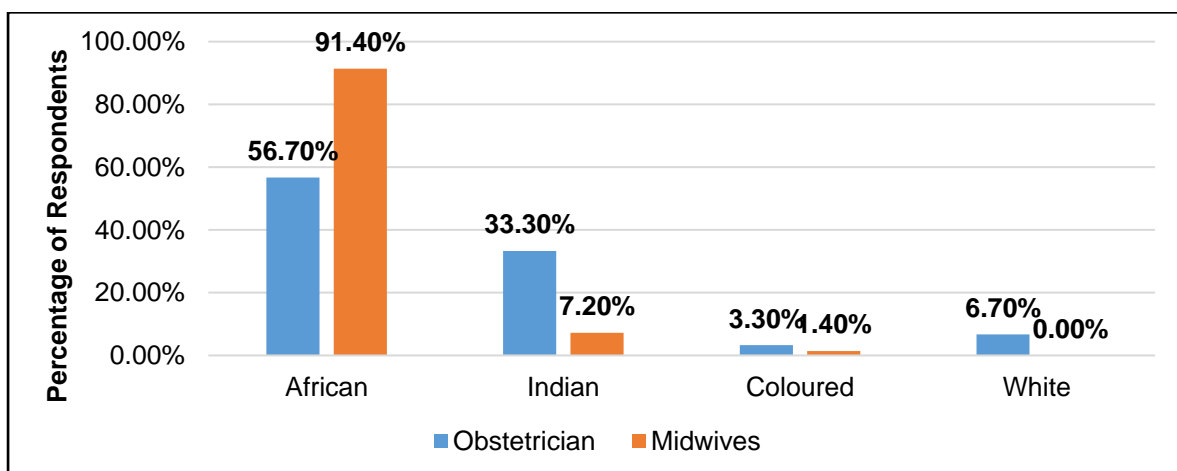


Figure 4.4: The number of respondents from the different racial groups (n=30 obstetricians, n=70 midwives)

4.2.4. Marital status and the profession of the respondents (n=30 obstetricians, n=70 midwives)

Sixteen (53.3%) of the obstetricians were single and fourteen (45.7%) were married. In the group of midwives, 32 (45.7%) were married, 32, (45.7%) were single while 2 (2.9%) were divorced, 3 (4.3%) were widowed and 1 (1.4%) was separated (**Figure 4.5**).

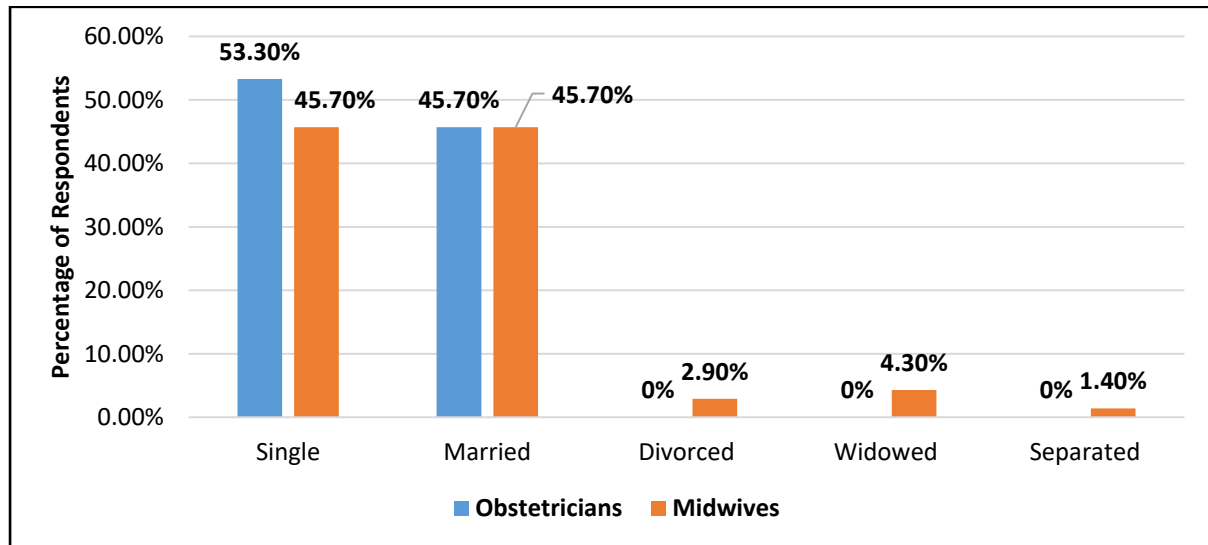


Figure 4.5: Marital status and the profession of the respondents (n=30 obstetricians, n=70 midwives)

4.2.5. The experience and the profession of the respondents in the labour ward (n=30 obstetricians, n=70 midwives)

Fourteen (50%) of the obstetricians had 0-6 years' experience in the labour ward, while twelve (40%) had 7-13 years' experience, two (6.7%) had 14-20 years' experience, one (3.3%) had 21-26 years' experience and one (3.3%) had more than 26 years' experience working in the labour ward.

Forty-seven (67.1%) of the midwives had 0-6 years' experience working in the labour ward, two (2.9%) had 7-13 years' experience, seven (10%) had 7-13 years' experience, and four (5.7%) had 21-26 years' experience, and 3.3% had more than 26 years of experience working in the labour ward. These abovementioned results indicate that the majority, 26 (86.7%) obstetricians and 57 (81.4%) midwives had fewer

years' experience working in the labour ward since they had less than 13 years of work experience in the labour ward. In contrast, very few had been in the profession for a long time, since 4 (13.3%) obstetricians and 13 (18.6%) midwives indicated their work experience to be longer than 13 years in the labour ward (**Figure 4.6**).

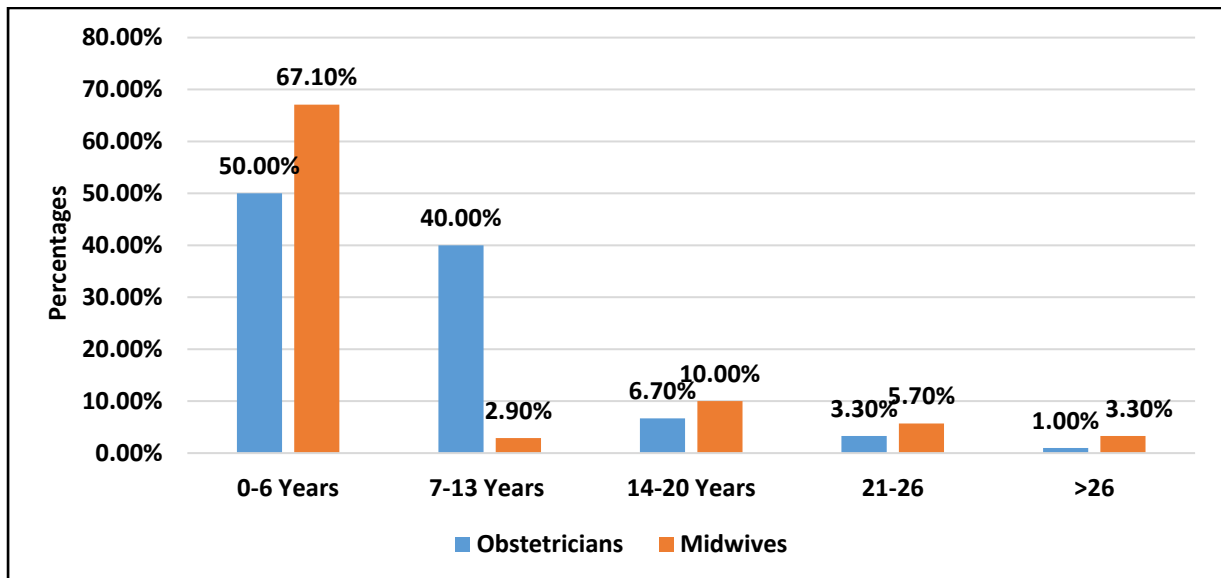


Figure 4.6: The experience and the profession of the respondents in the labour ward (n=30 obstetricians, n=70 midwives)

4.3. Section B: Interventions performed by the respondents when assessing the women in labour on admission

Section B focuses on the respondents', either the obstetricians' or the midwives' initial assessment of the pregnant women in labour as they responded to the questionnaires that were provided to them by the researcher. This section is very important, as assessment determines whether the woman or foetus is at risk or not, and whether urgent intervention is required. The assessment of women in labour on admission by obstetricians and midwives is shown in Table 4.2.

Table 4.2: The responses of respondents on the assessment of women in labour on admission to the labour ward (n=30 obstetricians, n=70 midwives)

Provided intervention Statements	Responses	Obstetricians (n=30)		Midwives (n=70)	
		Frequency	Percentage	Frequency	Percentage
Midwives and obstetricians have to review the antenatal records for a women in labour and indicate maternal and foetal risk	Yes	30	100%	70	100%
	No	0	0%	0	0%
	Total	30	100%	70	100%
Date and time of admission are often recorded for all women in labour	Yes	28	93%	62	88.6%
	No	2	7%	8	11.4%
	Total	30	100%	70	100%
A decision on diagnosis and management of women is always outlined at the end of initial assessments	Yes	27	90%	60	85.7%
	No	3	10%	10	14.3%
	Total	30	100%	70	100%
Findings on admission are always checked and recorded by a midwife or obstetrician	Yes	28	93%	70	100%
	No	2	7%	0	0%
	Total	30	100%	70	100%

The results from this study indicated that the respondents performed various interventions of the admission of women in the labour ward. These activities included: Reviewing of the antenatal records and indicating the maternal and fetal risks; recording of date and time of admission; diagnosis and management of the women at the end of the initial assessment; checking and recording the findings the findings on admission by the midwives and obstetricians (**Figure 4.7**).

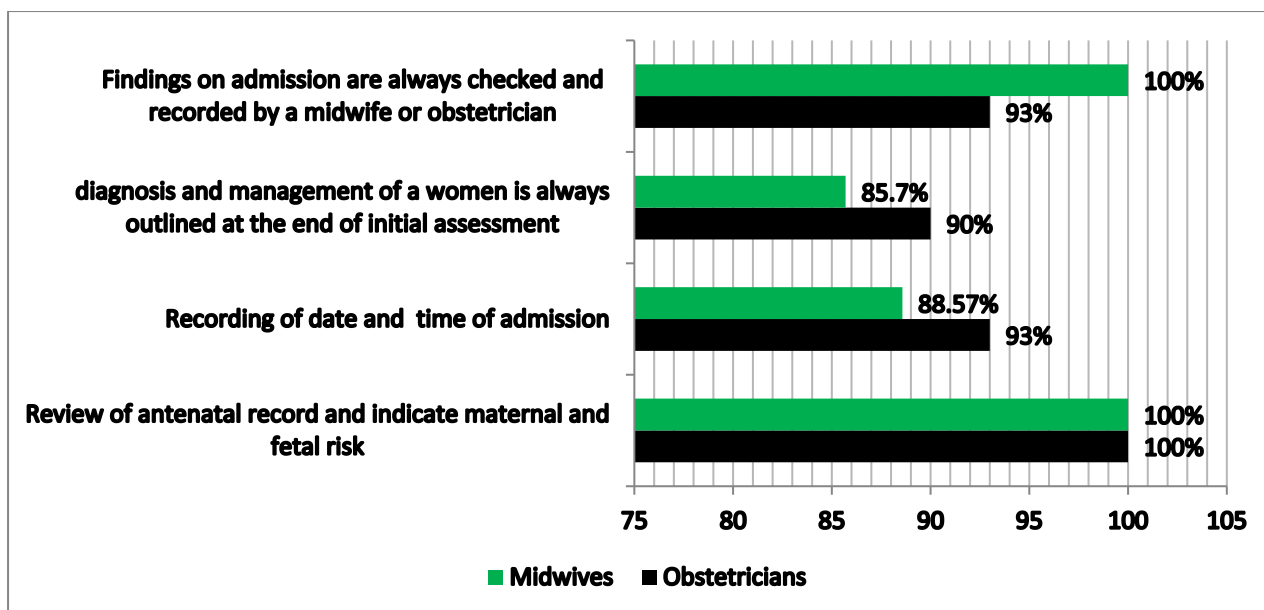


Figure 4.7: Responses of obstetricians and midwives on assessment of women in labour on admission (n=30 obstetricians, n=70 midwives)

All 30 (100%) obstetricians and 70 (100%) midwives reported that they reviewed the antenatal clinic records of all women in labour admitted to the labour ward, and they also recorded maternal and foetal risk factors. With regard to the recording of the date and time of admission of all women in labour, the majority of the obstetricians, 28, (93.3%) recorded the date and time of admission on the partograph, compared to the documented number of 62 (88.6%) noted by the midwives. A high percentage of obstetricians, 27, (90%) and midwives, 60, (85.7%) indicated that a decision on the diagnosis and management of a woman in labour was always outlined at the end of the initial assessment. Twenty-eight (93%) obstetricians and all the midwives (100%) reported that the findings on admission are constantly checked and recorded by an obstetrician or a midwife (Figure 4.7).

4.4. Section C: Knowledge and skills of the participants in the use of the partograph

4.4.1. Training of respondents on the use of the partograph (n=30 obstetricians, n=70 midwives)

All 30 (100%) obstetricians and 70 (100%) midwives involved in the study indicated that they had been trained in the use of partograph.

4.4.2. Type of tertiary education for respondents Table (n=30 obstetricians, n=70 midwives)

When it comes to the type of tertiary education where respondents received their training in the use of the partograph, all 30 (100%) obstetricians were trained in the use of the partograph at medical school. In contrast, midwives reported that they received their training in the use of the partograph in different tertiary education institutions. Forty-two (60%) midwives indicated they were trained in the use of the partograph at Nursing Colleges and twenty-one (30 0%) at the School of Nursing at the University of KwaZulu-Natal. Seven (10%) midwives reported that they were trained in the use of the partograph when they were already practicing as qualified midwives during in-service training. The responses of 63 (90%) midwives revealed that they were trained during their tertiary education at Universities and Colleges respectively. This was the majority, as only 7 (10%) midwives indicated that they were trained when they were already practicing as qualified midwives during in-service training.

4.4.3. Perception of the participants on the use of partograph (n=30 obstetricians, n=70 midwives)

Table 4.3: Perception of the participants on the use of partograph (n=30 obstetricians, n=70 midwives)

Views	Response	Obstetricians (n=30)		Midwives (n=70)	
		Freq.	%	Freq.	%
Is the partograph used systematically?	Strongly agree	18	60%	34	48.6%
	Agree	10	33.3%	31	44.3%
	Strongly disagree	0	0%	1	1.4%
	Disagree	2	6.7%	4	5.7%
Utilisation of the partograph is of great significance in the labour ward	Strongly agree	28	93.3%	61	87.1%
	Agree	2	6.7%	9	12.9%
	Strongly disagree	0	0%	0	0%
	Disagree	0	0%	0	0%
The partograph is a tool for decision-making in the labour ward	Strongly agree	27	90%	57	81.4%
	Agree	1	3.3%	12	17.2%
	Strongly disagree	0	0%	0	0%
	Disagree	2	6.7%	1	1.4 %
The partograph is a tool to monitor the progress of labour	Strongly agree	26	86.7%	57	81.4%
	Agree	4	13.3%	13	18.6%
	Strongly disagree	0	0%	0	0%
	Disagree	0	0%	0	0%
The partograph is a tool to detect complications during labour	Strongly agree	26	86.7%	56	80%
	Agree	4	13.3%	14	20%
	Strongly disagree	0	0%	0	0%
	Disagree	0	0%	0	0%
The partograph improves the management of labour	Strongly agree	14	46.7%	50	71.4%
	Agree	16	53.3%	18	25.7%
	Strongly disagree	0	0%	2	2.9%
	Disagree	0	0%	0	0%
The partograph is difficult to use in the labour ward	Strongly agree	2	6.7%	6	8.6%
	Agree	1	3.3%	12	17.1%
	Strongly disagree	21	70%	30	42.9%
	Disagree	6	20%	22	31.4%

Among the obstetricians' group, 18 (60%) strongly agreed, 10 (33.3%) agreed and 2 (6.7%) disagreed that the partograph is used systematically. Thirty-four (48.6%) midwives strongly agreed and 31 (44.3%) agreed that the partograph is used systematically in the labour ward, while 1 (1.4%) strongly disagreed and 4 (5.7%) disagreed. Systematic use of the partograph basically means recording of all the information on all four components of the partograph, for example, from foetal condition, progress of labour, treatment and maternal condition in systematic order to ensure that everything is done. More than half the obstetricians agreed that the partograph is systematically used, while less than half of the midwives agreed, only a small percentage of both groups of respondents disagreed. These results indicate that there was no consistency in the systematic use of the partograph by both obstetricians and midwives (**Figure 4.8**).

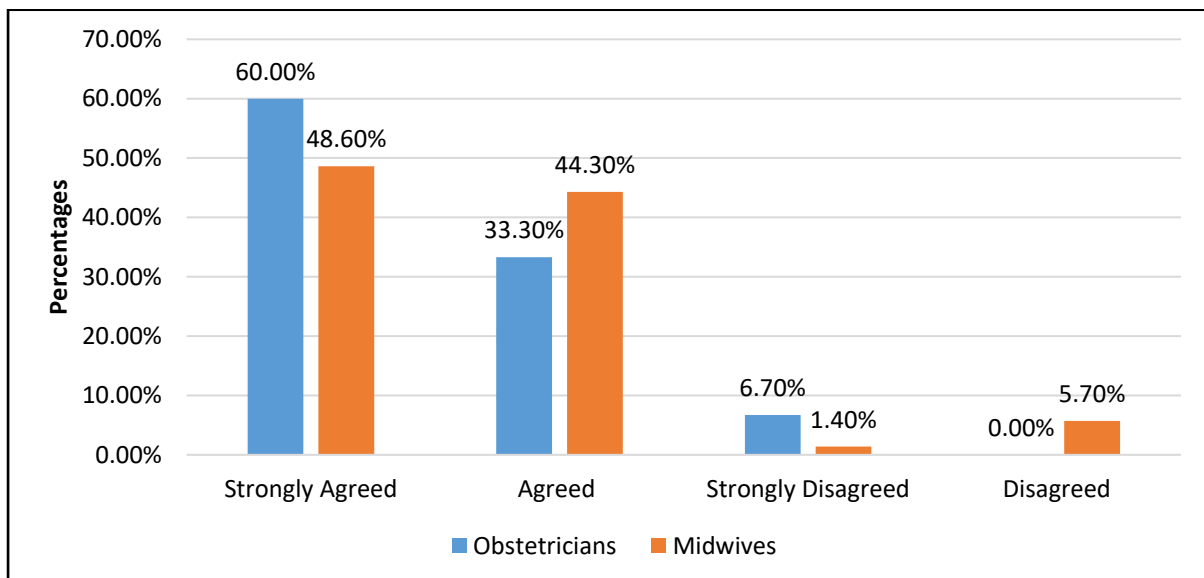


Figure 4.8: Response of obstetricians and midwives to the systematic use of the partograph (n=30 obstetricians, n=70 midwives)

The responses of the obstetricians and midwives to the statement indicating that utilisation of the partograph is of great significance in the labour ward is shown in Table 4.3 and illustrated graphically in Figure 4.9. The majority of the obstetricians, 28, (93.3%) and midwives, 61, (87.1%) strongly agreed and 2 (6.7%) obstetricians and 9 (12.9%) midwives agreed with the above statement (**Figure 4.9**).

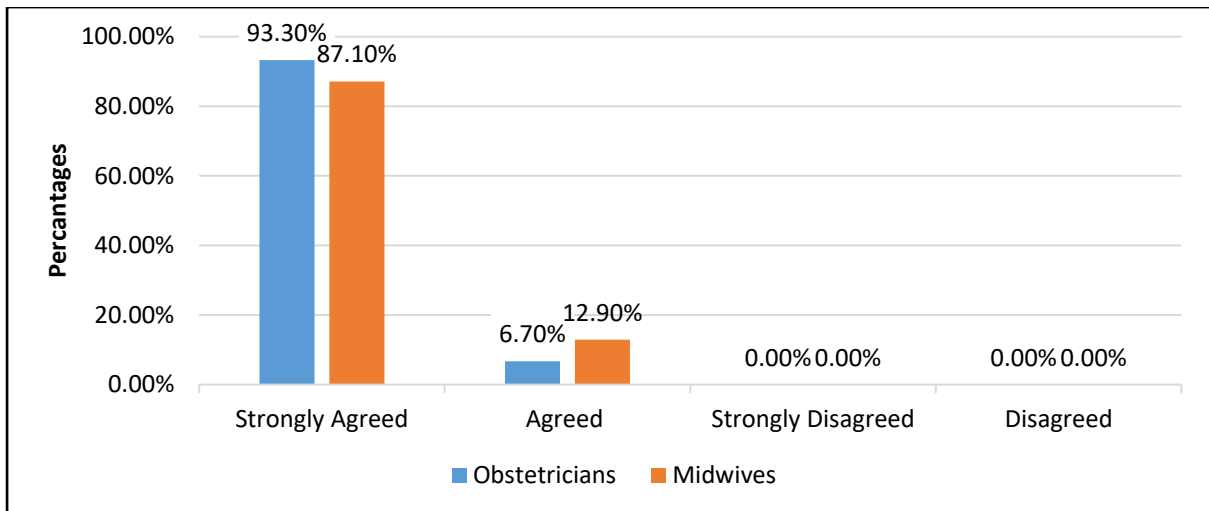


Figure 4.9: Response to the significant use of the partograph in the labour ward (n=30 obstetricians, n=70 midwives)

The majority of the obstetricians, 27 (90%) and midwives, 57, (81.4%) strongly agreed that the partograph is a tool for decision-making in the labour ward. Whereas 1 (3.3%) obstetrician and 12 (17.2%) midwives responded and indicated that they also agreed that the partograph is a tool for decision-making in the labour ward (**Figure 4.10**).

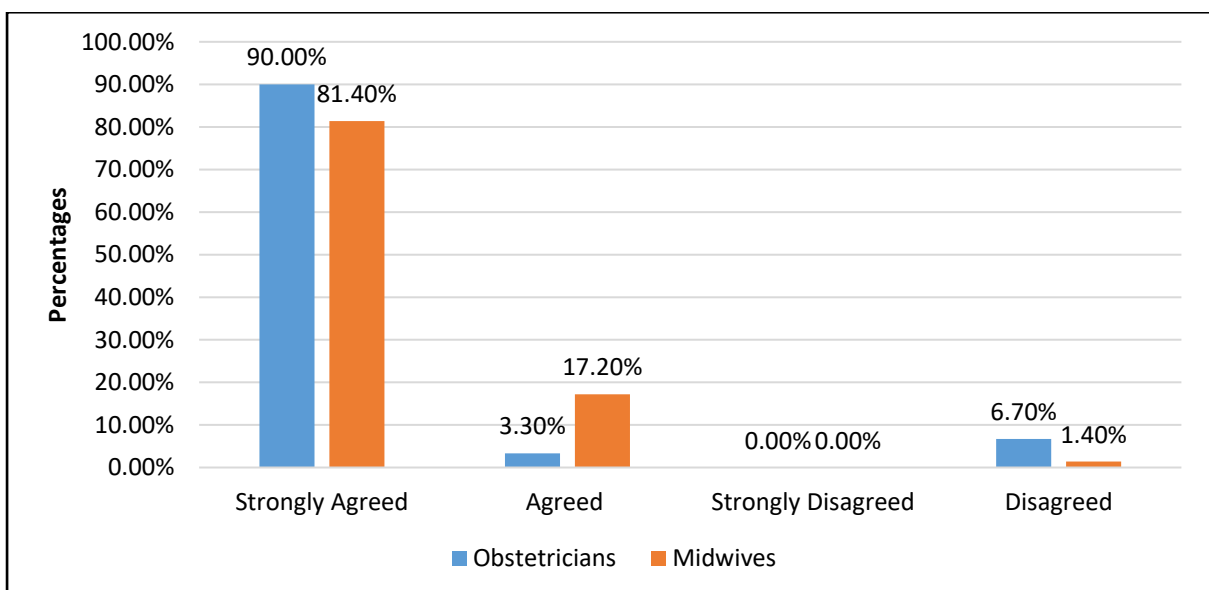


Figure 4.10: Response to the partograph as a tool for decision-making in the labour ward (n=30 obstetricians, n=70 midwives)

Twenty-six (86.7%) and four (13.3%) obstetricians, as well as fifty-seven (81.4%) and thirteen (18.6%) midwives responded and indicated that they strongly agreed/agreed

that the partograph is a tool used to monitor the progress of labour, whereas no one from either group disagreed (**Figure 4.11**).

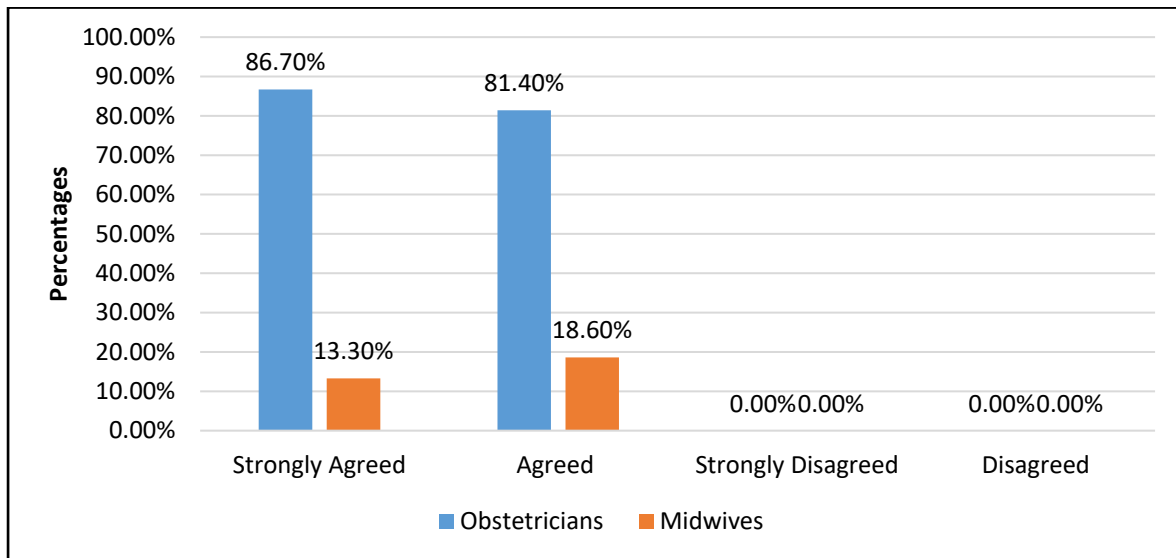


Figure 4.11: Responses to the partograph as a tool to monitor the progress of labour (n=30 obstetricians, n=70 midwives)

Twenty-six (86.7%) obstetricians strongly agreed and the remaining four (13%) obstetricians agreed that the partograph is a tool to detect complications during labour, whereas fifty-six (80%) midwives strongly agreed and fourteen (20%) midwives agreed that the partograph is a tool to detect complications during labour. None of the respondents disagreed with the above statement. The responses for both obstetricians and midwives were excellent, which is a clear indication that both groups had knowledge of the partograph. However, complications could occur during the antepartum, intrapartum and postpartum period, therefore, making use of the partograph during labour assists in the early identification of complications and the prompt management thereof. The response to this statement is displayed in **Figure 4.12**.

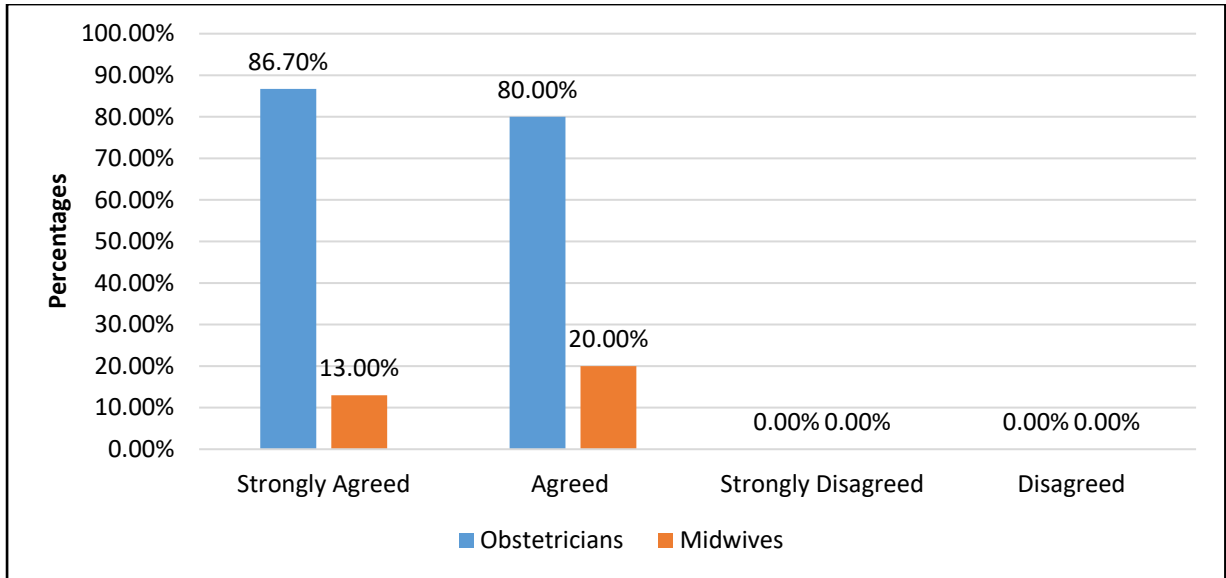


Figure 4.12: Responses to the partograph as a tool to detect complications during labour (n=30 obstetricians, n=70 midwives)

Fourteen (46.7%) obstetricians strongly agreed and sixteen (53.3%) agreed that the partograph improves the management of labour, while fifty (71.4%) midwives strongly agreed and eighteen (25.7%) agreed that the partograph improves the management of labour (**Figure 4.13**).

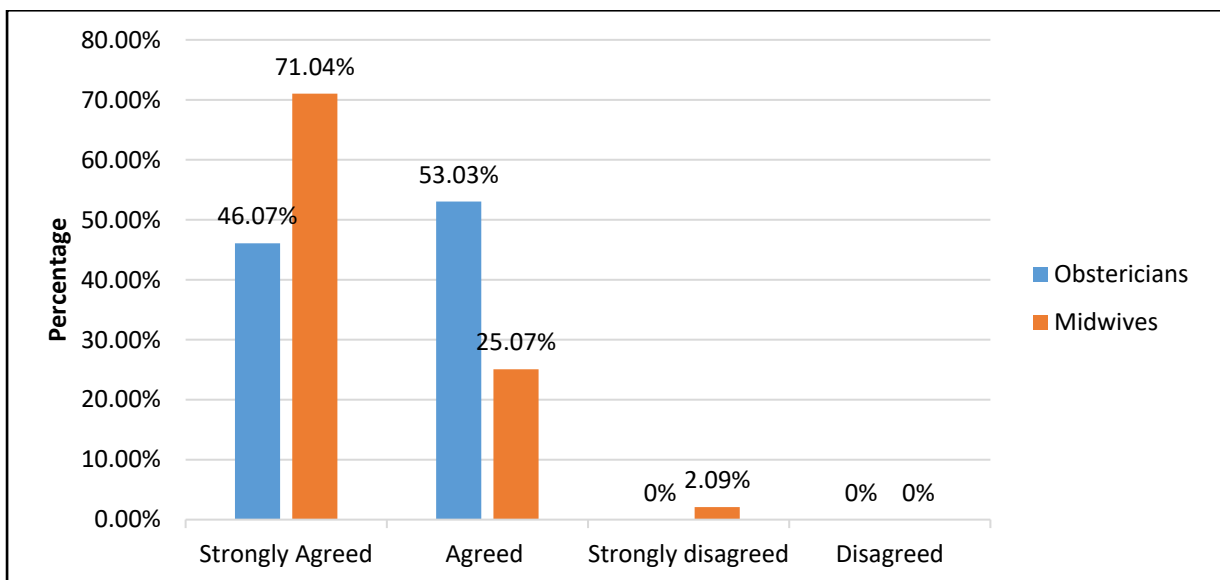


Figure 4.13: Responses to the partograph as a tool that improves management of labour (n=30 obstetricians, n=70 midwives)

The majority of obstetricians, 21, (70%) and midwives, 30, (42.9%) strongly disagreed that the partograph is difficult to use in the labour ward, while 6 (20%) obstetricians

and 22 (31.4%) midwives responded, also indicating that they disagreed that the partograph is difficult to use in the labour ward. These results had no significance for this study, since only 2 (6.7%) obstetricians and 6 (8.6%) midwives strongly agreed that the partograph is a difficult tool to use in the labour ward. Furthermore, 1 (3.3%) obstetrician agreed and 12 (17.1%) midwives also agreed that the partograph is difficult to use in the labour ward. It was surprising to note that few obstetricians and midwives agreed that the partograph is difficult to use in labour ward (**Figure 4.14**).

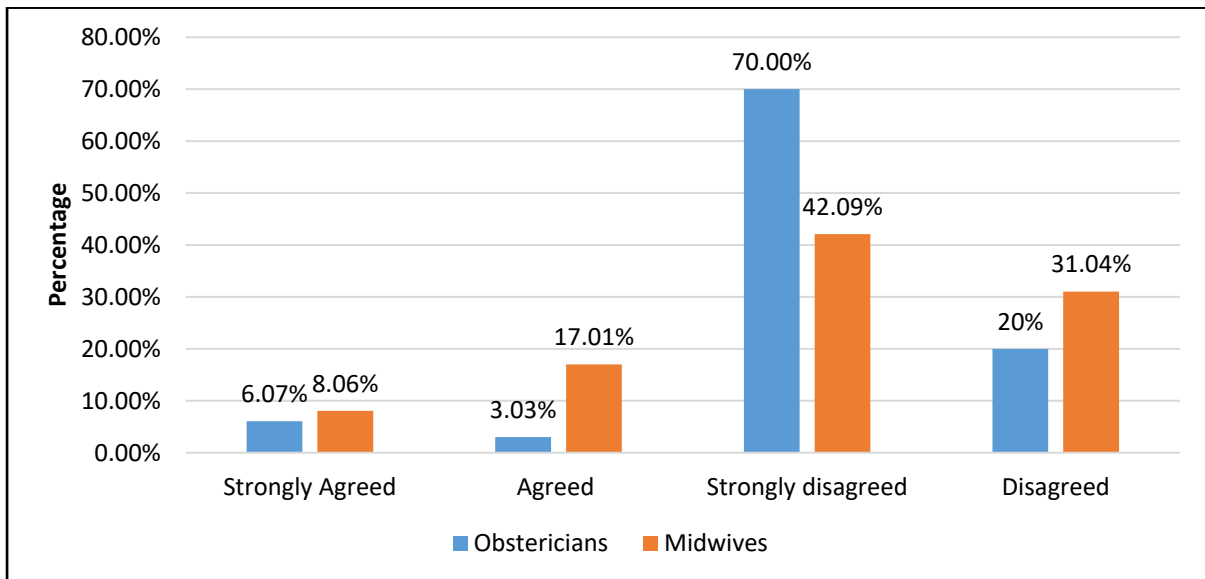


Figure 4.14: Responses to the view that the partograph is difficult to use in the labour ward (n=30 obstetricians, n=70 midwives)

4.5. Section D: Foetal condition monitoring by the respondents

This section examines the monitoring of the foetus at different time intervals with regards to the foetal heart rate, the state of the membranes, liquor and the degree of caput and moulding in the active phase of labour. Table 4.4 shows the different time intervals in the monitoring of the foetal heart rate, the state of the membranes, liquor, caput and moulding in the active phase of labour.

Table 4.4: Monitoring of the foetal condition at different time intervals (n=30 obstetricians, n=70 midwives)

Variable	View	Obstetricians (n=30)		Midwives (n=70)	
		Time	Frequency	Percentage	Frequency
In the active phase of labour foetal heart rate is monitored	½ hourly	13	43%	61	87.2%
	1 hourly	5	17%	8	11.4%
	2 hourly	11	37%	1	1.4%
	4 hourly	1	3%	0	0%
	Total	30	100%	70	100%
The state of the membrane and liquor are monitored in the active phase of labour	½ hourly	0	0%	4	6%
	1 hourly	8	26.7%	9	13%
	2 hourly	20	66.7%	57	81%
	4 hourly	2	6.7%	0	0%
	Total	30	100%	70	100%
The degree of caput and moulding are monitored in the active phase of labour	½ hourly	1	3.3%	5	7.2%
	1 hourly	5	16.7%	8	11.4%
	2 hourly	23	76.7%	57	81.4%
	4 hourly	1	3.3%	0	0%
	Total	30	100%	70	100%

The responses regarding the monitoring of the foetal heart rate in the active phase of labour varied among the obstetricians and midwives, since 61 (87.2%) midwives indicated that, in the active phase of labour, the foetal heart rate should be monitored half-hourly, while 8 (11.4%) responded by saying that one-hourly monitoring was appropriate, and 1 (1.43%) endorsed two-hourly monitoring. Thirteen (43.3%) obstetricians felt that, in the active phase of labour, foetal heart rate should be monitored half-hourly, 5 (16.7%) opted for hourly, 11 (36.7%) indicated two-hourly and 1 (3.3%) chose four-hourly, respectively (**Figure 4.15**).

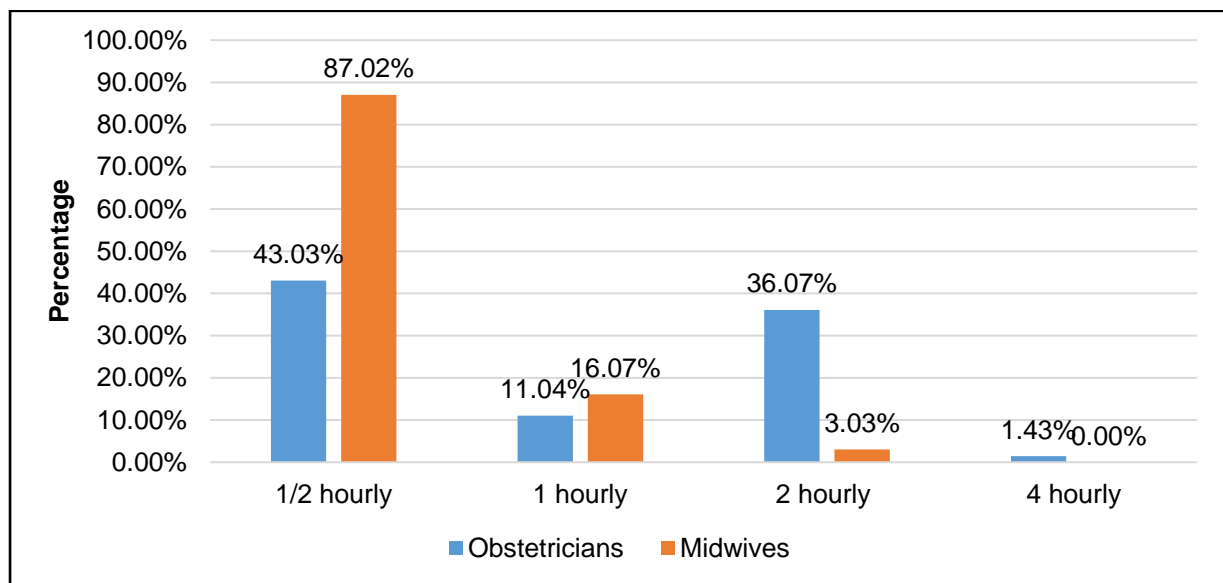


Figure 4.15: Monitoring of the foetal heart rate in the active phase of labour

Fifty-seven (81%) midwives and twenty (66.7%) obstetricians stated that, in the active phase of labour, the state of the membranes and liquor are monitored at two-hourly intervals, whereas nine (13%) midwives and eight (26.8%) obstetricians stated that monitoring should be done hourly. Four (6%) midwives indicated they would monitor women half-hourly, and two (6.7%) obstetricians recommended four-hourly monitoring. These results indicated 81% of the midwives and 66.7% obstetricians responded positively when saying that the state of membranes and liquor is monitored two-hourly in the active phase of labour (**Figure 4.16**).

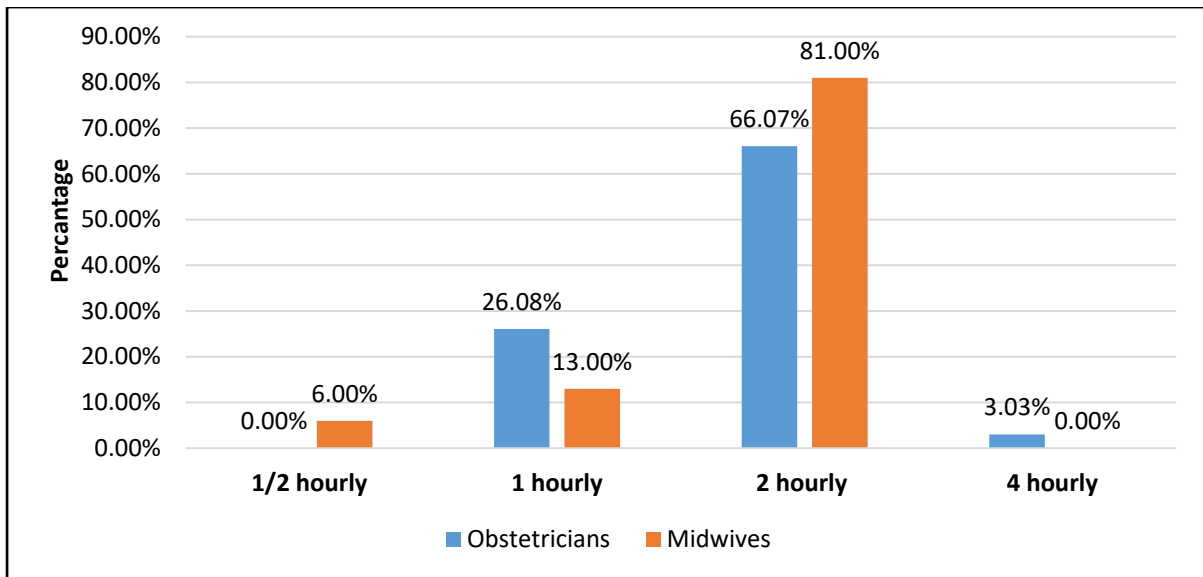


Figure 4.16: Time intervals for monitoring the state of membranes and liquor in the active phase of labour (n=30 obstetricians, n=70 midwives)

Fifty-seven (81.4%) midwives reported that they would monitor the degree of caput and moulding two-hourly in the active phase of labour, eight (11.4%) indicated hourly monitoring and five (7.2%) said half-hourly monitoring is appropriate. Twenty-three (76.7%) obstetricians indicated that caput and moulding are monitored at two-hourly intervals, while five (16.7%) said hourly, one (3.3%) chose half-hourly and one (3.3%) said four-hourly (**Figure 4.17**).

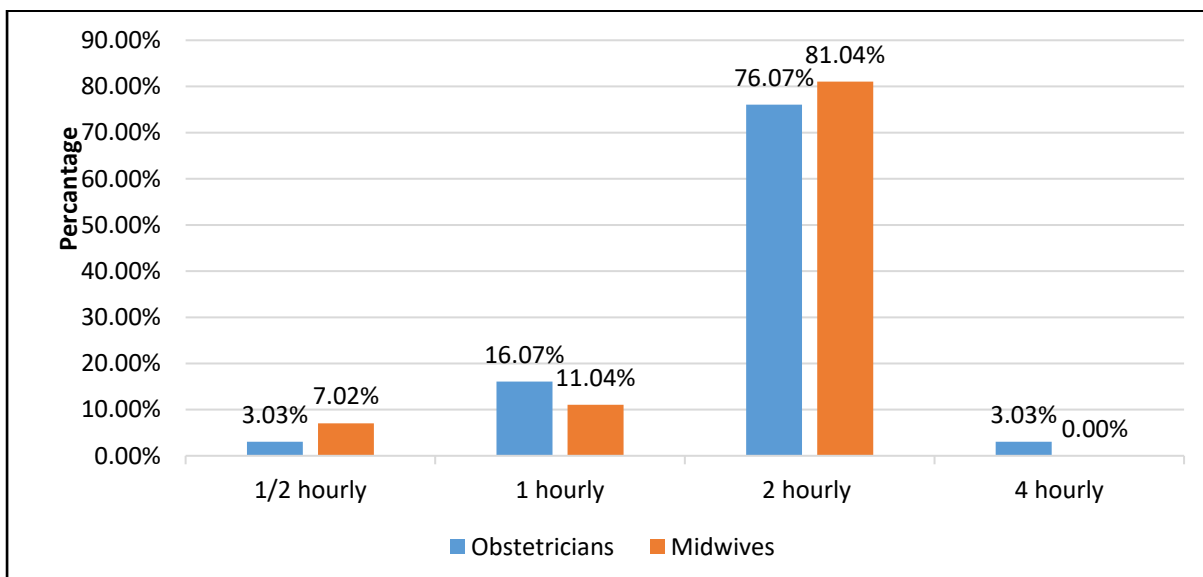


Figure 4.17: Time intervals for monitoring of caput and moulding in the active phase of labour (n=30 obstetricians, n=70 midwives)

4.6. Section E: Progress of labour, treatment administered during labour and maternal condition data

This section describes the progress of labour and the monitoring of the different variables, at different time intervals, the treatment administered during labour and maternal condition data.

4.6.1. Progress of labour

Table 4.5 provides the views of obstetricians and midwives with regard to the progress of labour that is monitored by checking cervical dilatation and effacement, descent of the foetal head and uterine contractions at certain time intervals.

Table 4.5: Views of obstetricians and midwives on timely intervals for monitoring the progress of labour

Variable	View	Obstetricians (n=30)		Midwives (n=70)	
		Freq.	%	Freq.	%
Cervical dilatation is monitored two-hourly in the active phase of labour	Strongly agree	26	87%	60	86%
	Agree	3	10%	9	13%
	Disagree	1	3%	1	1%
	Strongly disagree	0	0%	0	0%
Cervical effacement is monitored two-hourly in the active phase labour	Strongly agree	14	47%	55	79%
	Agree	13	43%	14	20%
	Disagree	2	7%	1	1%
	Strongly disagree	1	3%	0	0%
Descent of the foetal head is monitored two-hourly in the active phase of labour	Strongly agree	12	40%	56	80%
	Agree	17	57%	12	17%
	Disagree	1	3%	2	3%
	Strongly disagree	0	0%	0	0%
The uterine contractions are monitored half-hourly in the active phase of labour	Strongly agree	6	20%	50	71%
	Agree	20	67%	9	13%
	Disagree	3	10%	9	13%
	Strongly disagree	1	3%	2	3%

Twenty-six (86.7%) obstetricians and sixty (85.7%) midwives strongly agreed to two-hourly monitoring of cervical dilatation in the active phase of labour, while three (10%) obstetricians and nine (12.9%) midwives agreed that cervical dilatation should be monitored two-hourly in the active phase of labour, in contrast to only one obstetrician and one midwife who disagreed that cervical dilatation is monitored two-hourly (**Figure 4.18**).

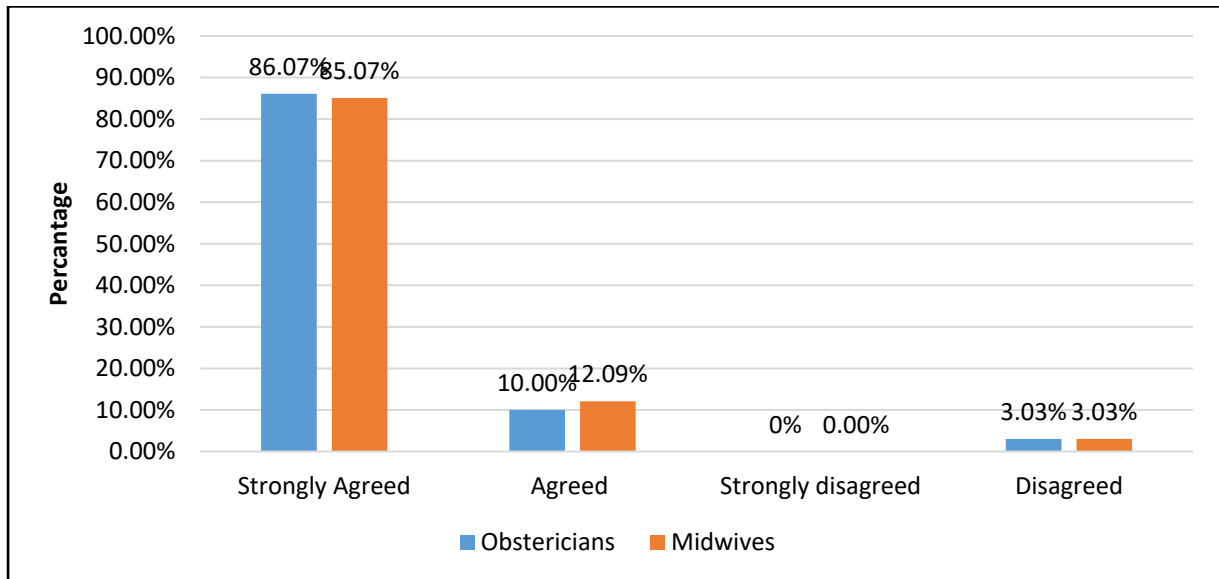


Figure 4.18: Views of obstetricians and midwives regarding time interval monitoring of cervical dilatation during the active phase of labour (n=30 obstetricians, n=70 midwives)

Fourteen (46.7%) obstetricians and fifty-five (78.6%) midwives strongly agreed that cervical effacement is monitored two-hourly, while thirteen (43.3%) obstetricians and fourteen (20%) midwives just agreed that cervical effacement is monitored in a two-hourly phase in the active phase of labour. Two (7%) obstetricians and one (1%) midwife disagreed, while one (13%) obstetrician strongly disagreed that cervical effacement is monitored two-hourly in the active phase of labour (**Figure 4.19**).

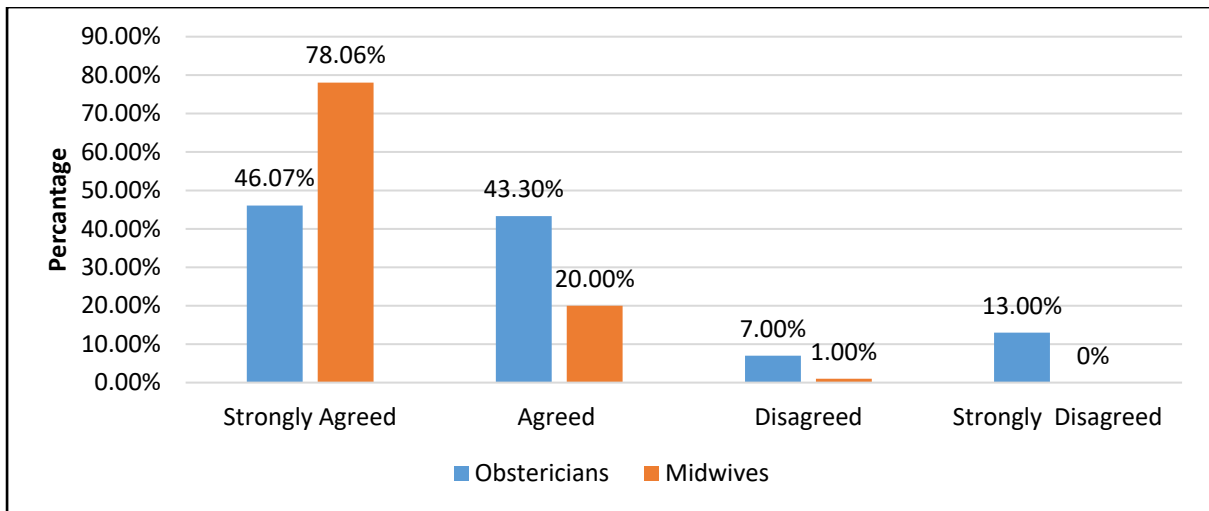


Figure 4.19: Views of obstetricians and midwives regarding time interval of monitoring of cervical effacement during the active phase of labour (n=30 obstetricians, n=70 midwives)

Twelve (40%) obstetricians and fifty-six (80%) midwives strongly agreed, while seventeen (56.7%) obstetricians and twelve (17.1%) midwives agreed that the descent of the foetal head is monitored two-hourly in the active phase of labour. In contrast, only 2 midwives and 1 obstetrician disagreed with the above statement. There was a positive response from both obstetricians and midwives regarding monitoring of the descent of the foetal head, although obstetricians seemed to be uncertain, since the highest percentage just agreed instead of strongly agreeing (**Figure 4.20**).

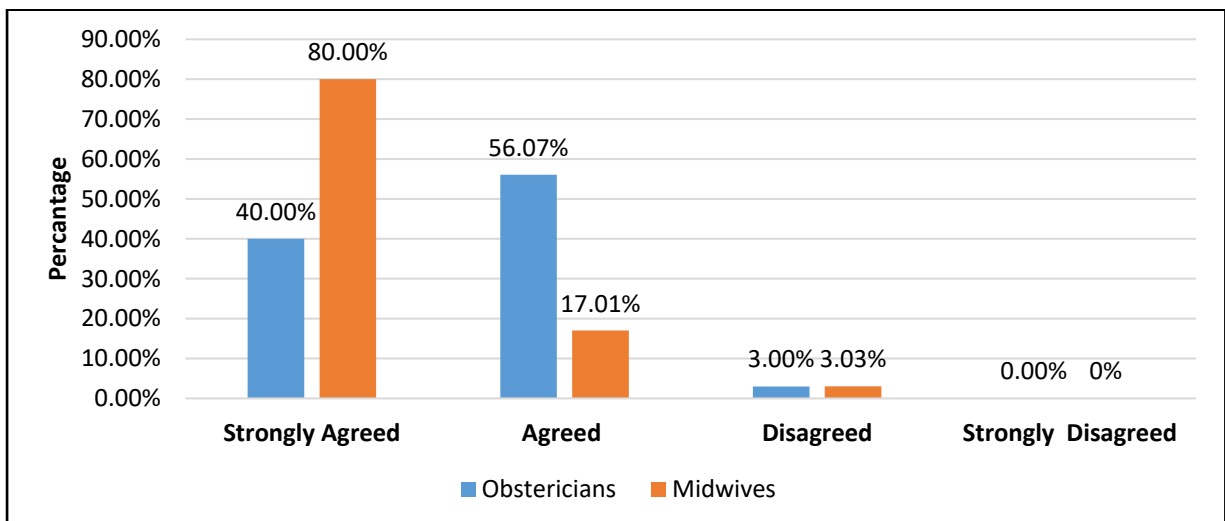


Figure 4.20: Views of obstetricians and midwives regarding the time interval of monitoring of descent of the foetal head during the active phase of labour (n=30 obstetricians, n=70 midwives)

Six (20%) obstetricians and fifty (71.4%) midwives strongly agreed with the estimated period of half-hourly monitoring of uterine contractions during the active phase of labour and that contractions vary from mild, to moderate and strong. Furthermore 20 (66.7%) obstetricians and 9 (12.9%) midwives just agreed that uterine contractions are monitored half-hourly in the active phase of labour. However, 3 (10%) obstetricians and 9 (13%) midwives disagreed, whereas 1 (3%) obstetrician and 2 (3%) midwives strongly disagreed (**Figure 4.21**).

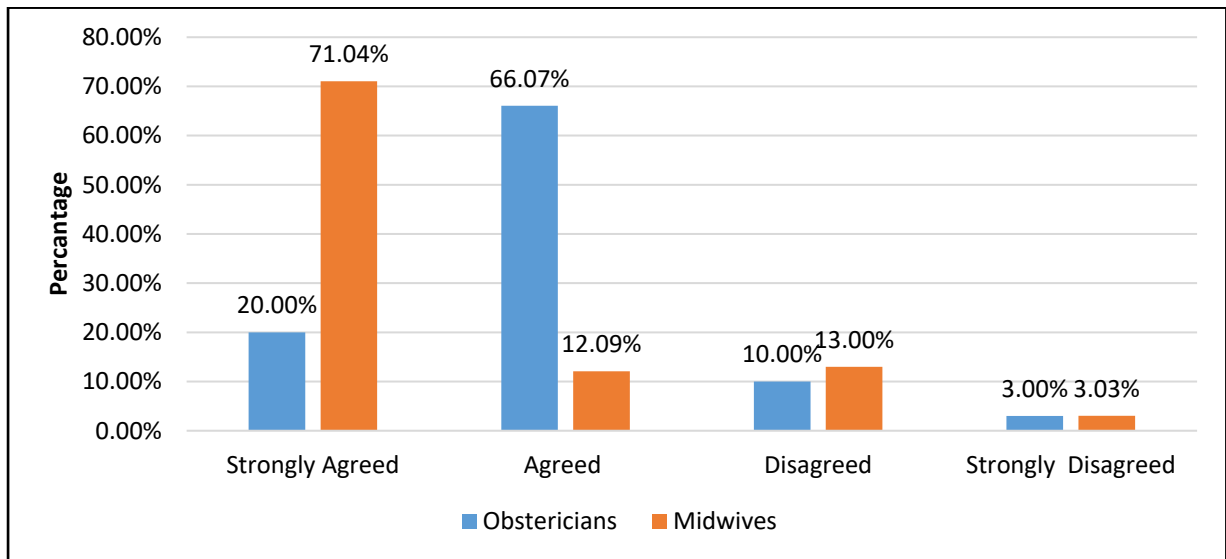


Figure 4.21: Views of obstetricians and midwives regarding the time interval of monitoring uterine contractions during the active phase of labour (n=30 obstetricians, n=70 midwives)

4.6.2. Treatment administered during labour

The following section describes the administration of IV fluids, oxytocic drugs used for augmentation of labour, analgesics used for pain relief and antibiotics used in the case of prolonged rupture of the membranes (**Table 4.6**).

Table 4.6: Views of obstetricians and midwives regarding treatment administered during labour (n=30 obstetricians, n=70 midwives)

Variable	View	Obstetricians (n=30)		Midwives (n=70)	
		Frequency	Percentage	Frequency	Percentage
IV fluids are administered only if necessary	Strongly agree	20	66.7%	42	60%
	Agree	7	23.3%	23	32.9%
	Disagree	3	10%	5	7.1%
	Strongly disagree	0	0%	0	0%
Oxytocic drugs are used for augmentation of labour in cases of poor progress	Strongly agree	7	23.3%	48	68.6%
	Agree	23	76.7%	22	31.4%
	Disagree	0	0%	0	0%
	Strongly disagree	0	0%	0	0%
Analgesics, e.g. pethidine or entonox inhalation are administered for pain relief	Strongly agree	24	80%	53	75.7%
	Agree	6	20%	17	24.3%
	Disagree	0	0%	0	0%
	Strongly disagree	0	0%	0	0%
Antibiotics may be administered in case of prolonged rupture of the membranes	Strongly agree	13	43.3%	58	82.9%
	Agree	17	56.7%	12	17.1%
	Disagree	0	0%	0	0%
	Strongly disagree	0	0%	0	0%

In the obstetricians' group, 20 (66.7%) strongly agreed that IV Fluids are administered only if necessary. In addition, 7 (23.3%) agreed with the administration of IV fluids, only if necessary, whereas 42 (60%) midwives strongly agreed that IV fluids are administered only if there is a solid indication or when a complication is anticipated, and 23 (32.9%) agreed with the application. Three (10%) of the obstetricians and five (7.1%) midwives disagreed that IV fluids are administered only if necessary (**Figure 4.22**).

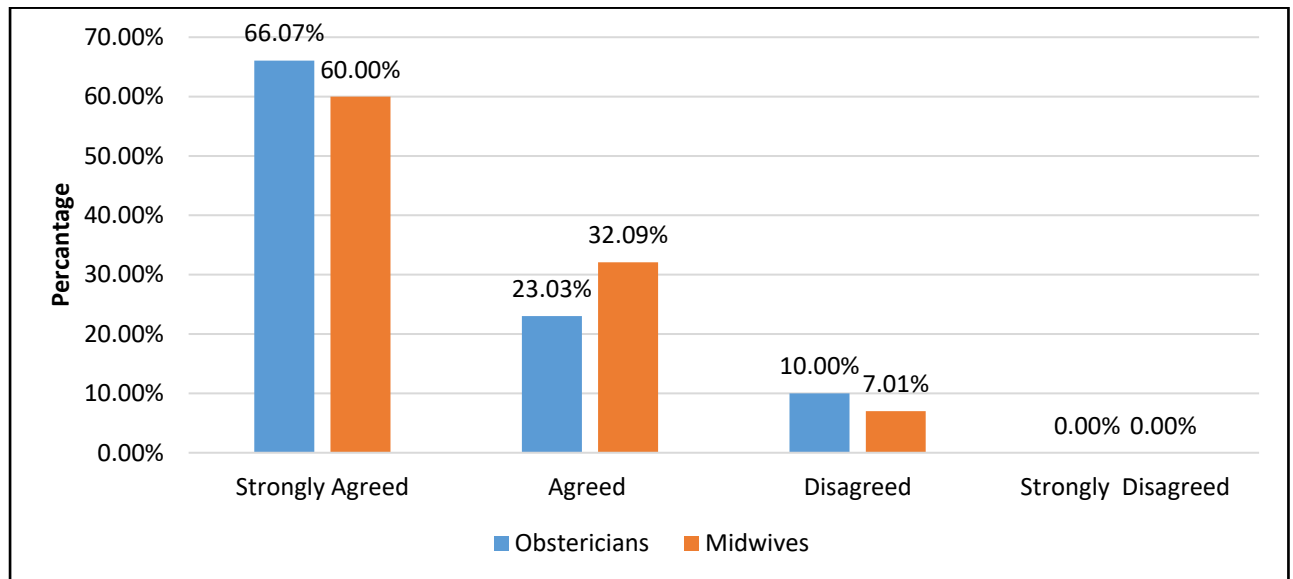


Figure 4.22: Views of obstetricians and midwives regarding administration of intravenous fluids, only if necessary (obstetricians n=30, midwives n=70)

Seven (23.3%) obstetricians and forty-eight (68.6%) midwives strongly agreed with the use of oxytocic drugs for augmentation of labour, likewise, twenty-three (76.7%) obstetricians and twenty-two (31.4%) midwives agreed that oxytocic drugs are used for augmentation of labour to boost uterine contractions in cases of poor progress (**Figure 4.23**).

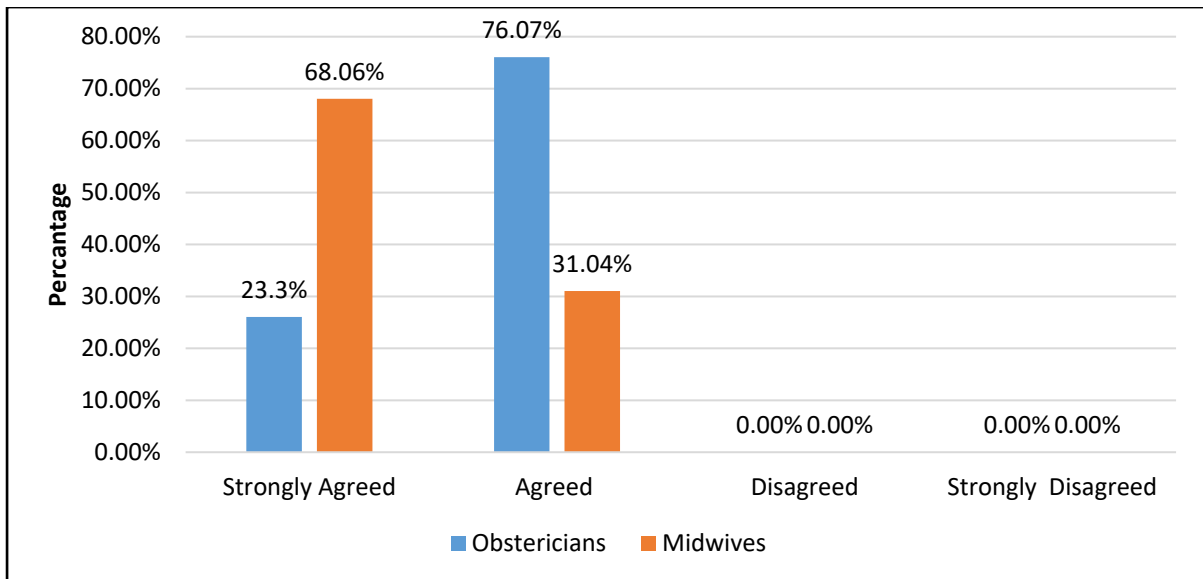


Figure 4.23: Views of obstetricians and midwives regarding the use of oxytocic drugs for augmentation of labour in cases of poor progress (obstetrician's n=30, midwives n=70)

With regard to the administration of analgesics for pain relief, 24 (80%) obstetricians strongly agreed that the use of analgesics is favorable during labour, furthermore, 6 (20%) obstetricians just agreed, while 53 (75.7%) midwives strongly agreed that analgesics, e.g. Pethidine or Entonox inhalation are administered for pain relief, and 17 (24.3%) midwives just agreed. These results were consistent across both groups of obstetricians and midwives since more than half of both groups knew that Pethidine or Entonox inhalation are administered for pain relief (**Figure 4.24**).

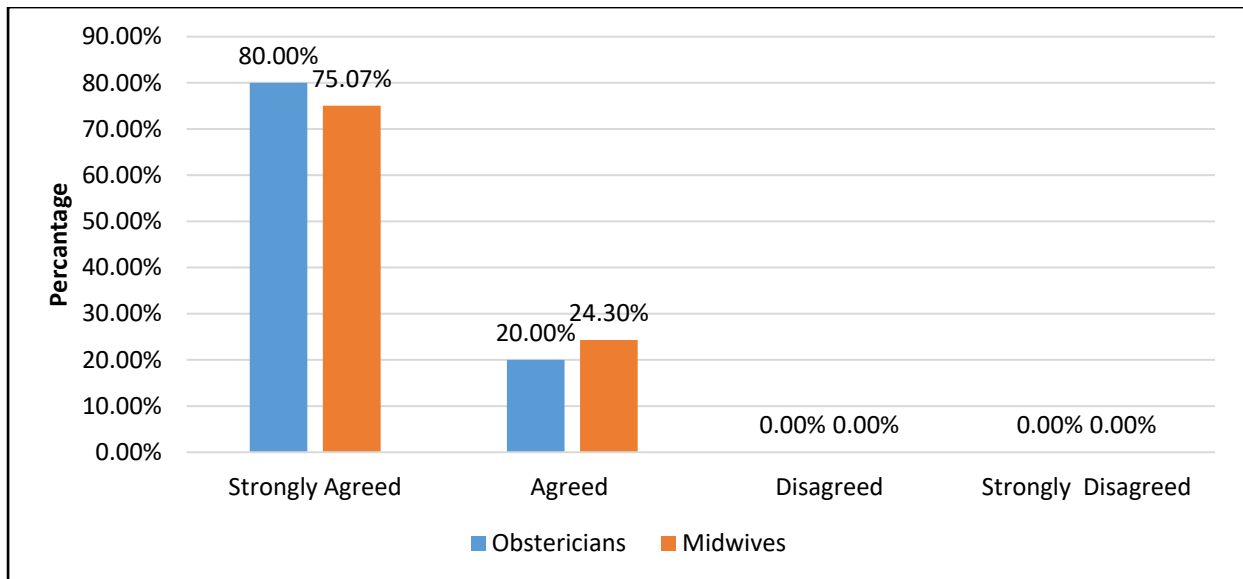


Figure 4.24: Views of obstetricians and midwives regarding analgesics, e.g. pethidine or entonox inhalation administered for pain relief (obstetricians n=30, midwives n=70)

Thirteen, (43.3%) as well as seventeen (56.7%) obstetricians strongly agreed and agreed, respectively, that antibiotics may be administered in cases of prolonged rupture of the membranes. Moreover, 58 (82.9%) and 12 (17.1%) midwives also strongly agreed and agreed, respectively, that antibiotics may be administered in cases of prolonged rupture of the membranes. The above results indicated a significant response, since no one from either group of respondents disagreed that antibiotics may be administered in cases of prolonged rupture of the membranes and the majority knew this (**Figure 4.25**).

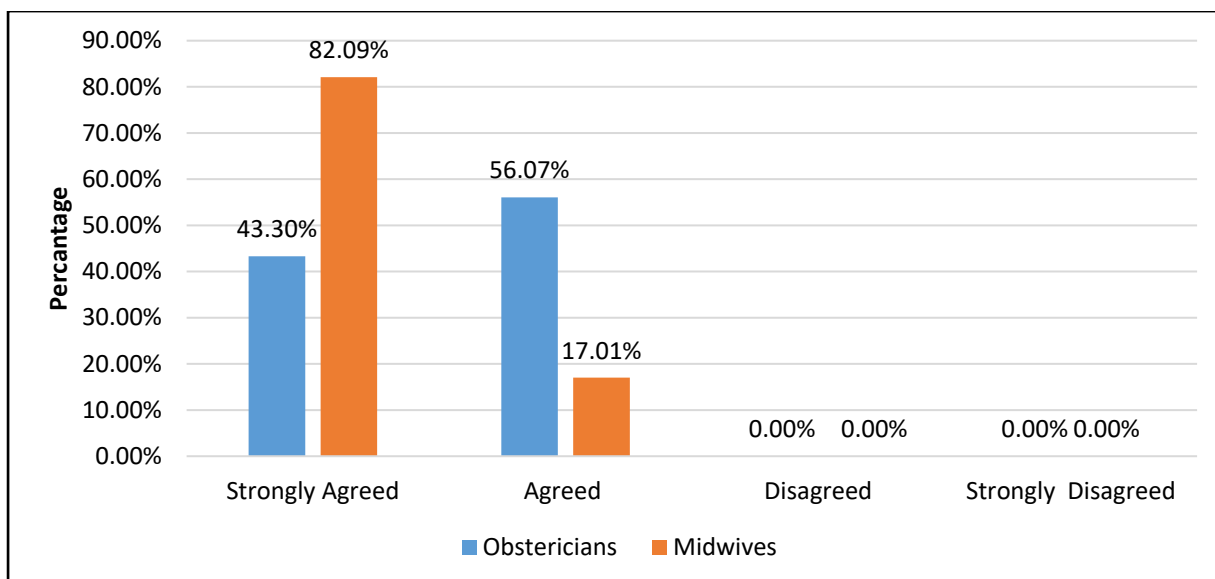


Figure 4.25: Views of respondents that antibiotics may be administered in cases of prolonged rupture of the membranes (obstetricians' n=30, midwives n=70)

4.6.3. Maternal condition

This section considers the views of respondents regarding the monitoring of blood pressure, pulse rate, temperature and urinalysis at different time intervals.

Table 4.7: Shows the views of the respondents about time interval of monitoring blood pressure, pulse, temperature, urinalysis and urine output (obstetricians n=30, midwives n=70)

Variable	View	Obstetricians (n=30)		Midwives (n=70)	
		Frequency	Percentage	Frequency	Percentage
Blood pressure and pulse rate are observed half-hourly in the active phase	Strongly agree	6	20%	53	75.7%
	Agree	24	80%	17	24.3%
	Disagree	0	0%	0	0%
	Strongly disagree	0	0%	0	0%
Temperature is observed four-hourly throughout labour	Strongly agree	3	10%	48	68.6%
	Agree	18	60%	22	31.4%
	Disagree	8	26.7%	0	0%
	Strongly disagree	1	3.3%	0	0%
Urinalysis and urine output are checked two-hourly in the active phase of labour	Strongly agree	2	6.7%	43	61.4%
	Agree	23	76.7%	19	27.1%
	Disagree	4	13.3%	5	7.2%
	Strongly disagree	1	3.3%	3	4.3%

Six (20%) obstetricians strongly agreed and twenty-four (80%) agreed that blood pressure and pulse are observed half-hourly in the active phase, whereas, in the midwives' group, fifty-three (75.7%) strongly agreed and seventeen (24.3%) agreed that blood pressure and pulse should be observed half-hourly in the active phase. This was in contrast to 3 (4%) who disagreed and 2 (3%) who strongly disagreed that blood pressure and pulse are observed half-hourly in the active phase of labour. These results indicate that there is no consistency about blood pressure and pulse monitoring between obstetricians and midwives because vital signs' monitoring is most often done by midwives (Figure 4.26).

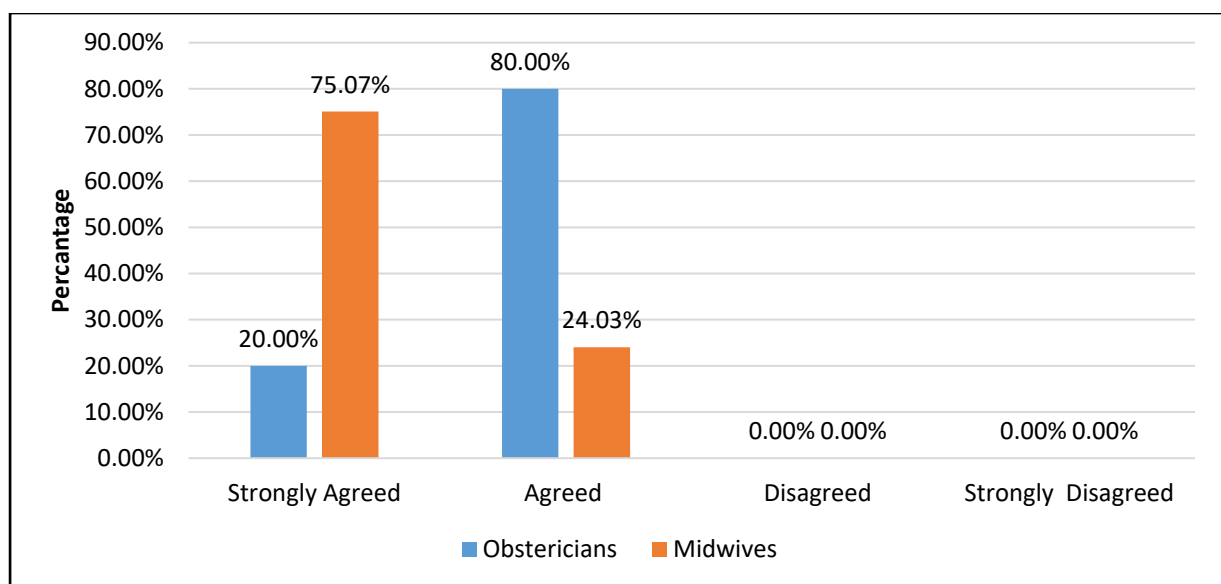


Figure 4.26: Time interval for blood pressure and pulse rate monitoring in the active phase of labour (obstetricians' n=30, midwives n=70)

In the obstetricians' group, 3 (10%) strongly agreed, 18 (60%) just agreed, whereas 8 (26.7%) disagreed and 1 (3.3%) strongly disagreed that temperature is observed four-hourly throughout labour. In the midwives' group, 8 (68.6%) strongly agreed and 22 (31.4%) just agreed that temperature is observed four-hourly throughout labour. These results indicate that there is no consistency between the midwives' and obstetricians' views regarding monitoring of temperature throughout labour, which is a clear indication that midwives are the ones who are constantly at the bedside of the pregnant women, monitoring their vital signs to identify potential complications in order to manage them promptly (Figure 4.27).

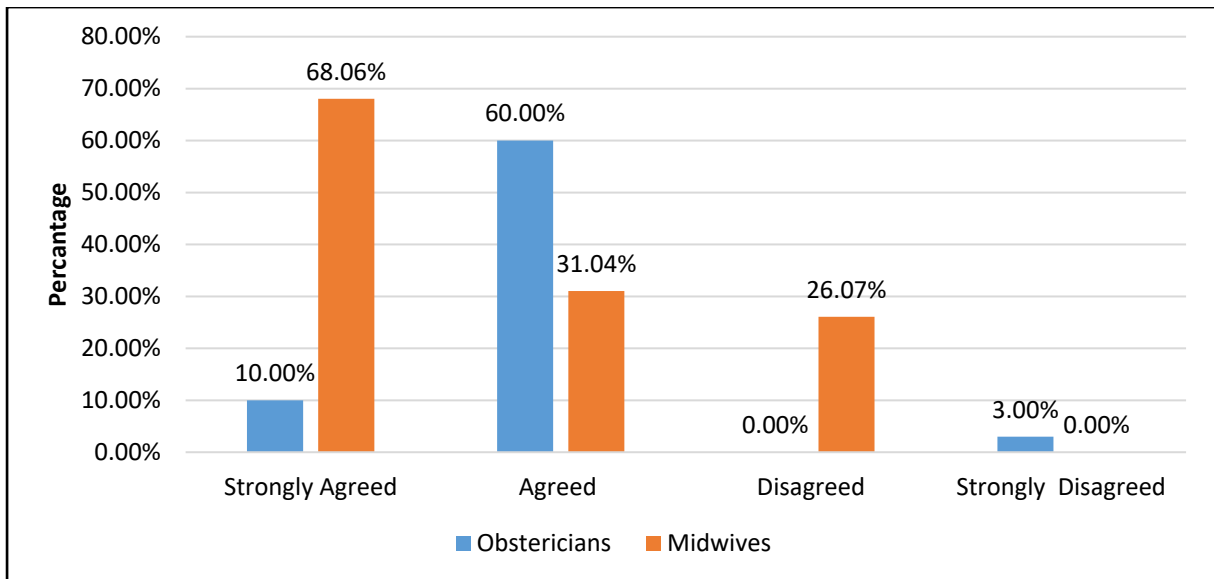


Figure 4.27: Time interval for temperature observation throughout labour (obstetricians n=30, midwives n=70)

Two (6.7%) obstetricians strongly agreed and twenty-three (76.7%) agreed, while four (13.3%) disagreed and one (3.3%) strongly disagreed and in the midwives' group, forty-three (61.4%) midwives strongly agreed and nineteen (27.1%) agreed, but five (7.3%) disagreed and three (4.3%) strongly disagreed that urinalysis and urine output are checked two-hourly in the active phase of labour. The majority of obstetricians and midwives mutually agreed showing that they had knowledge that urinalysis and urine output are indeed checked two-hourly in the active phase of labour (**Figure 4.28**).

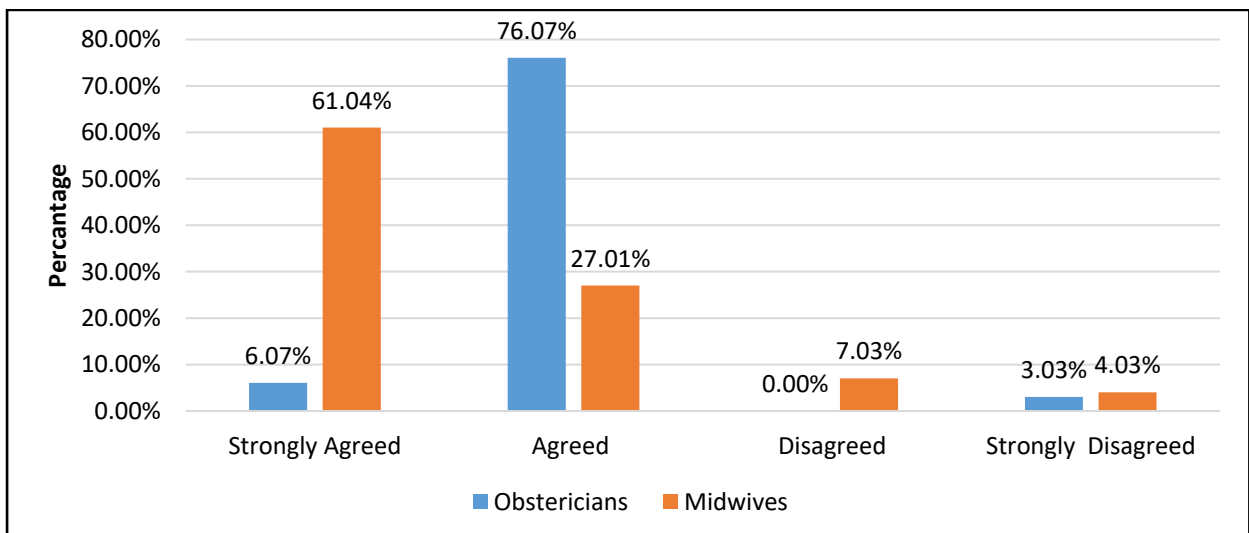


Figure 4.28: Time interval for checking urinalysis and urine output during the active phase of labour (obstetricians n=30, midwives n=70)

4.8 Section F: Factors that influence the use of the partograph to monitor the progress of labour

The response to questions dealing with the factors that facilitate the use of the partograph in the labour ward was obtained from 70 midwives and 30 obstetricians. Forty-one (58.6%) midwives and sixteen (53.3%) obstetricians stressed the need for an adequate number of obstetricians and midwives to be employed in the labour ward, while twenty (28.6%) midwives and ten (33.3%) obstetricians indicated the need for adequate time for partograph use in the labour ward. All midwives and obstetricians need to be able to make use of the partograph effectively, which implies that the pre-service training alone is not adequate for effective utilization of the partograph in the practical setting. Seven (10%) midwives and two (6.7%) obstetricians stated that there is a need for adequate knowledge of the function of the different variables illustrated in the application of the partograph and its use to identify risk factors and diagnose abnormal labour. In addition, the remaining 2 (2.9%) midwives and 2 (6.7%) obstetricians felt that regular in-service training is required to keep the staff working in the labour ward competent regarding partograph use (**Figure 4.29**). Ultimately, they should be able to record legible, accurate and complete data on the partograph.

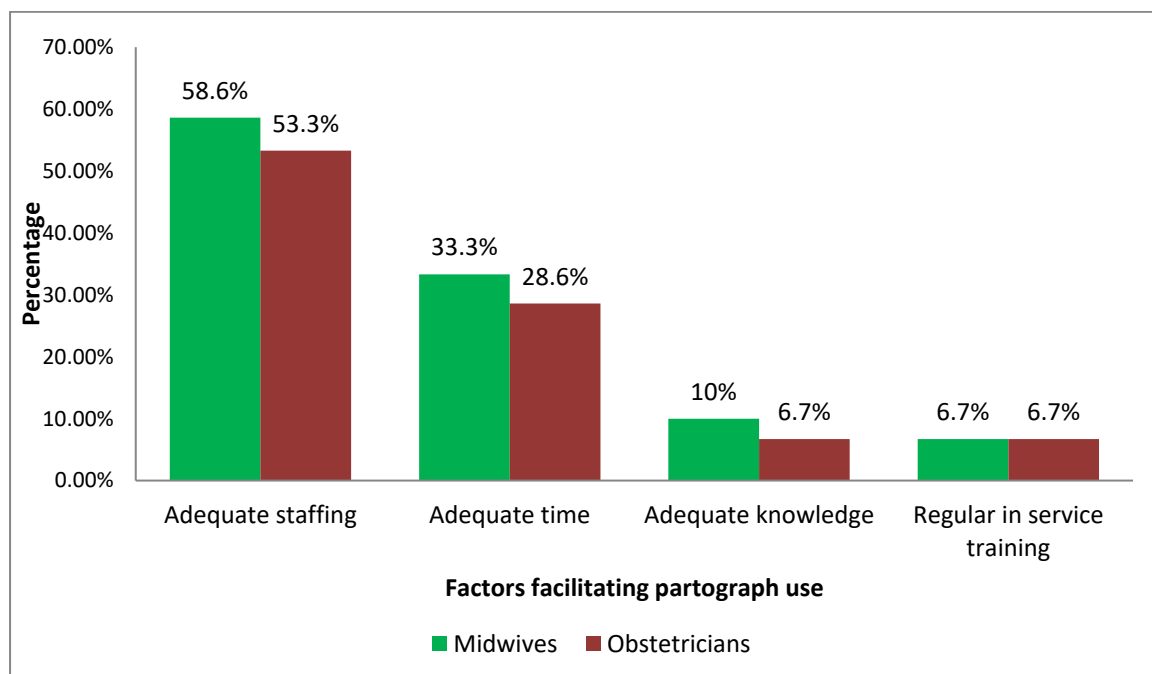


Figure 4.29: Factors that facilitate the use of partograph in the labour ward.

Forty-five (64.3%) midwives and twelve (40%) obstetricians highlighted that the labour ward is understaffed. In addition, 15 (22.4%) midwives and 9 (31%) obstetricians felt that the partograph was too detailed and that completing the partograph was time-consuming and was not feasible. Lack of knowledge, especially among the newly-qualified staff regarding the utilization of the partograph was reported by 6 (8.96%) midwives and 4 (13.8%) obstetricians, whereas 4 (5.97%) midwives and 5 (17.2%) obstetricians stated that irregular in-service training hinders effective utilization of the partograph in the labour ward (**Figure 4.30**).

The general responses to this question varied among both the midwives and obstetricians. Midwives and obstetricians could be reluctant to use the partograph if they had insufficient knowledge and did not fully understand its appropriate use to identify complications. Filling in the information on the partograph was also seen as an additional task for a busy midwife, and could, in such a situation, lead to an inability to diagnose complications like obstructed labour due to cephalopelvic disproportion, or foetal distress which could impact on the perinatal outcome.

The researcher also identified that a shortage of human resources in the labour ward often made the staff experience difficulty in monitoring all women in labour using the partograph.

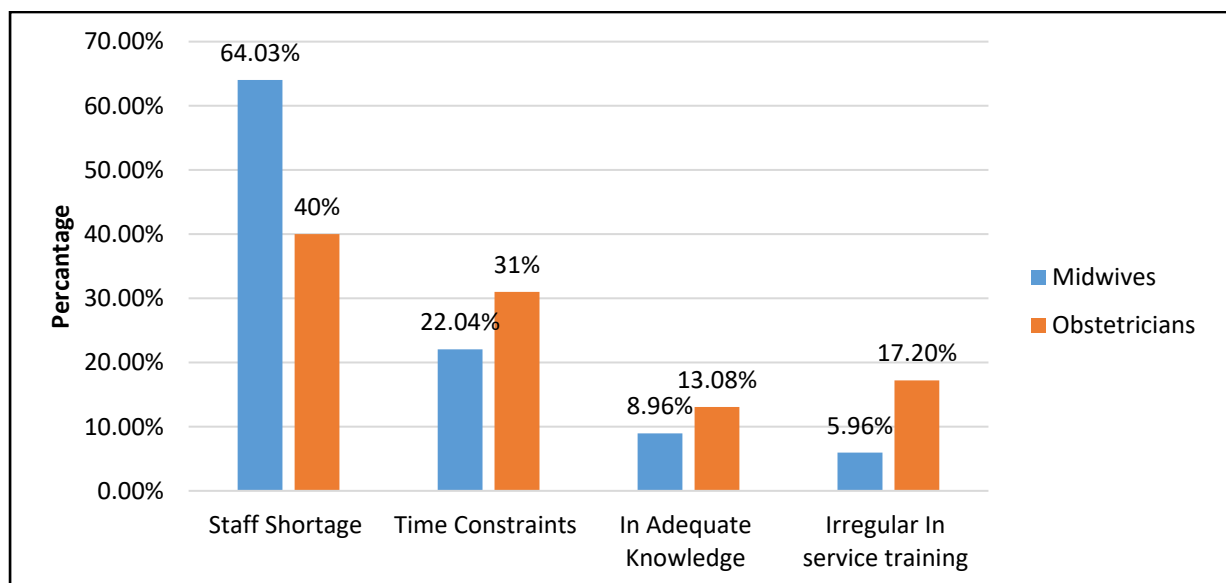


Figure 4.30: Factors that hinder the use of partograph in the labour ward.

4.7. Second part of study: Utilization of the partograph (Results of the retrospective data)

The second part of this study presents quantitative retrospective results obtained in October and November 2011 through an audit of data on partograms that had previously been recorded by obstetricians and midwives working in the labour wards. These partograms were obtained from the maternity case records of 100 women who had previously delivered over a one-month period, in September, 2010. The second part of the study consists of two sections. Section A dealt with the recording of the identification of women in labour (name, registration number, age, gravid and parity), data relating to the state of the membranes on admission (date and time of rupture of the membranes).

Section B related to the recording of the progress of labour, (dilatation and effacement of the cervix, level of foetal head, and uterine contractions) data relating to medications administered during labour, (type of medication, dosage, time and mode of administration) data relating to maternal condition, (temperature, pulse, blood pressure and urinalysis) and data relating to delivery (date, time and mode of delivery, name of midwife or doctor who conducted the delivery, whether or not it was an assisted delivery, whether the woman sustained a 1st or 2nd degree tear, whether an episiotomy was performed and the possible complications thereof).

The audited partograms were assessed in terms of either being recorded based on completeness or not recorded based on incompleteness of the information documented on them. The factors which reflected completeness of information in this study were whether information documented was legibly or clearly written, accurate and date and time written, with all information documented on all components of the partogram from the time when the active phase of the first stage of labour was reached until delivery of the baby or not completely recorded.

Generally, it was observed that the information in some audited partograms was complete as it was completely recorded since all the components of the audited partograms were well documented. However, in some partograms information was found to be incompletely recorded because information written in them was

inaccurately and incompletely filled out and this could have resulted in difficulty in making appropriate decisions on the management of the progress of labour.

4.7.1. Section A: Identification of women in labour

This section focuses on presenting the results of the recording of the demographic details on the audited partograms of women in labour, the state of the membranes and the foetal condition by obstetricians and midwives immediately following the admission of the women in labour to the labour ward (**Table 4.8**).

Table 4.8: General overview of findings obtained from the old 100 partograms regarding demographic details, the state of membranes and the foetal condition in women who delivered in September, 2010 (n=100)

Variable	View	Recorded		Not recorded	
		Freq.	%	Freq.	%
Demographic details	Women's name and surname	100	100%	0	0%
	Woman's registration number	100	100%	0	0%
	Woman's age	90	90%	10	10%
	Gravida	93	93%	7	7%
	Parity	93	93%	7	7%
State of membranes on admission	State of membranes on admission	82	82%	18	18%
	Date of rupture of membranes	41	41%	59	59%
	Time of rupture of membranes	40	40%	60	60%
Foetal condition	Rate of foetal heart during labour	52	52%	48	48%
	State of liquor during labour	59	59%	41	41%
	Caput during labour and at delivery	53	53%	47	47%
	Moulding during labour and at delivery	54	54%	46	46%

4.7.1.1. Data relating to demographic details of women in labour

All of the partograms, 100, (100%) had the women's names and surnames, as well as registration numbers legibly, accurately and completely recorded. This constitutes crucial baseline data for identification of women in labour. The women's ages were recorded on 93 (93%) partograms. The parity and gravid were recorded on 93 (93%) partograms. A small percentage (7%) of the partograms contained no record of patient age, parity and gravid. This missing information would have identified particular risk factors in the women, since the higher the age and parity, the higher the chances of developing complications that could need prompt intervention. Therefore, observations of these variables are important and serve as warning signs. The findings indicated a significant outcome since only 7 (7%) charts had no information on age and parity respectively (**Figure 4.31**).

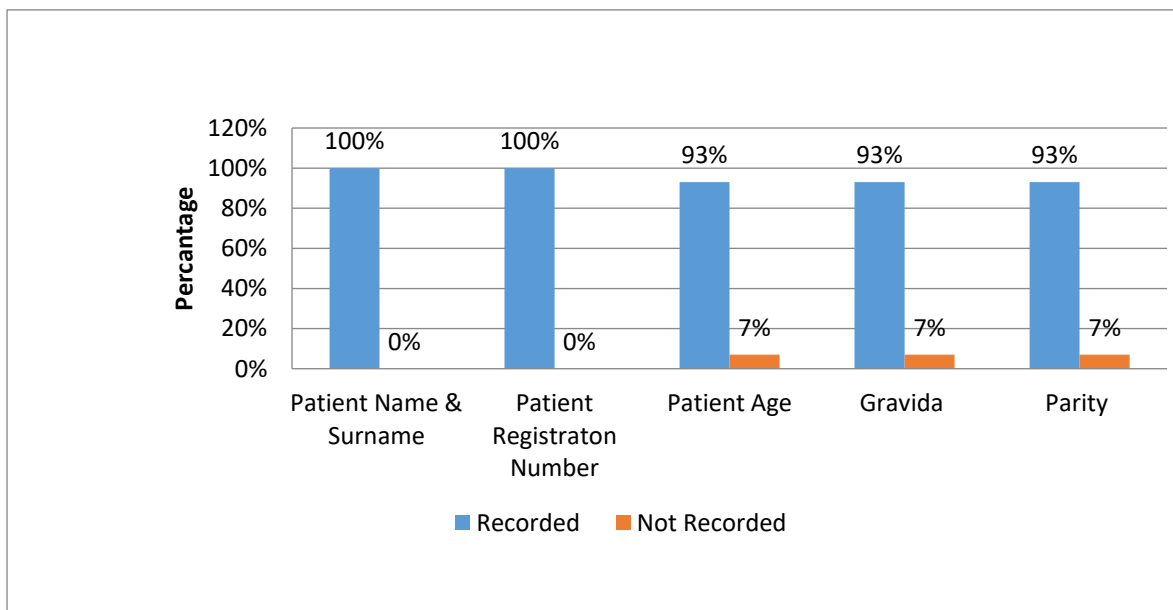


Figure 4.31: Recording of name and surname, age, gravid and parity on the partograms (n=100).

4.7.1.2. Recording of the state of the membranes on admission, date and time of rupture of the membranes

The state of the membranes on admission was recorded in 82 (82%) partograms, while date and time of the rupture of the membranes was recorded in 41 (41%) and 40 (40%) partograms respectively. The date and time when membranes ruptured was poorly documented. The above findings indicated that, although the majority of partograms revealed that the state of membranes was legibly, accurately and completely recorded on admission, the date and time of the rupture of the membranes was poorly recorded. Therefore, poor documentation of these findings could expose women in labour to infection in case of prolonged rupture of membranes. Table 4.8 and Figure 4.32 show the recording of this data in the partogram relating to the state of the membranes on admission, as well as the date and time of the rupture of the membranes (**Figure 4.32**).

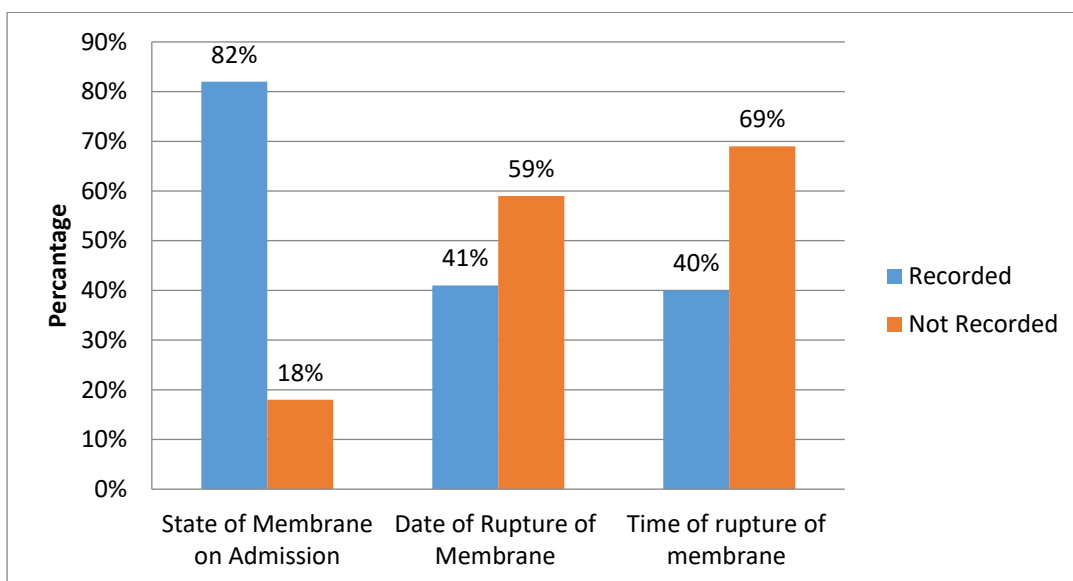


Figure 4.32: Recording of the state of membranes on admission, date and time of rupture of the membranes on partograms (n=100)

4.7.1.3. Foetal condition

The foetal heart rate was recorded in 52 (52%) partograms, liquor was recorded in 59 (59%) partograms, caput was recorded in 53 (53%) partograms and caput and moulding were recorded in 54 (54%) partograms. All of these variables were legibly recorded, but recording was inaccurate and incomplete. The condition of the foetus, whether healthy or compromised, when assessed through monitoring of the foetal heart rate, moulding, caput and liquor can influence the mode of delivery. Foetal heart rate and state of liquor are the two most crucial parameters used to detect foetal distress. Forty-eight percent of the partograms in this study showed no recordings of the foetal heart rate. This shows that, based on these partogram recordings, there was a high probability of failure to diagnose foetal distress timeously, since a foetal heart rate that is persistently below 120 beats per minute and above 160 beats per minute indicates foetal compromise, and this could impact on the perinatal outcome. The above findings indicated that, although information of the foetal heart rate, state of liquor, caput and moulding was legibly recorded, it was inaccurate and incomplete in more than half of the partograms, however, in 48 (48%) partograms there was absolutely no record of these variables on the partogram indicating sub-standard care (**Figure 4.33**).

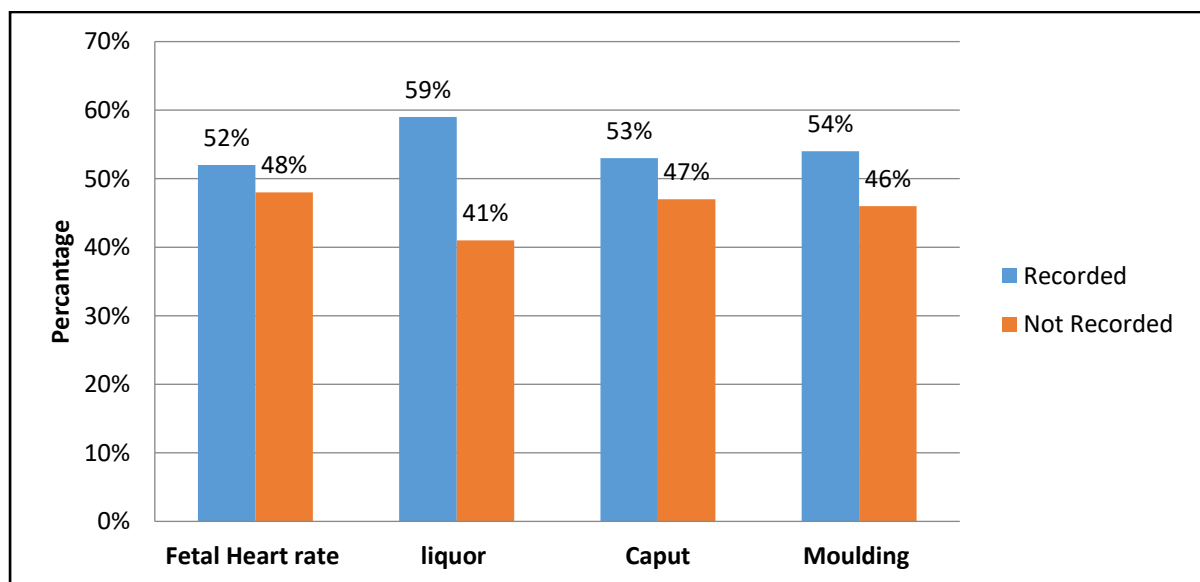


Figure 4.33: Recording of foetal heart rate, liquor, caput and moulding on partograms (n=100)

4.7.2. Section B: Progress of labour

This section observed the recording of the progress of labour with regard to dilatation and effacement of the cervix; level/descent of head and uterine contractions on the audited partograms of 100 women who had normal vaginal delivery in September 2010. The maternal condition included the recording of the temperature, the pulse, the blood pressure and urinalysis on the partograms. With regard to the administration of medication during labour, the recording on the partograms of the type of medication, dosage, time and mode of administration was also assessed.

The recording of the time and date of delivery, the mode of delivery, the name of the doctor or midwife who conducted the delivery, whether the delivery was assisted or not, the occurrence of a first or second degree tear or whether an episiotomy was performed and if any complications occurred was checked on the partograms. With regards to the placenta, the recording of the date and time of expulsion of the placenta and membranes, as well as the state of the placenta and membranes was checked. The recording of the condition of the infant at birth on the partograms was assessed, with regard to whether the infant was born alive, which is determined by use of the Apgar score at 1 minute and at 5 minutes of delivery, the birth weight, the gender and a quick examination of the new born to exclude any congenital defects.

Table 4.9: The general overview of recording of information in the progress of labour, the maternal condition, medication administered during labour, delivery of the placenta and membranes, as well as the condition of the infant at birth, as recorded on the partograms (n=100)

Parameters of labour	View	Recorded		Not recorded	
		Freq.	%	Freq.	%
Progress of labour	Cervical dilatation during progress of labour	63	63%	37	37%
	Cervical effacement during labour	19	19%	81	81%
	Level of foetal head during labour	58	58%	42	42%
	Monitoring of uterine contractions during labour	50	50%	50	50%
Maternal condition	Temperature	19	19%	81	81%
	Pulse	34	34%	66	66%
	Blood pressure	44	44%	56	56%
	urine	14	14%	86	86%
Medication administered during labour	Type of medication	9	9%	91	91%
	Dosage of medication	5	5%	95	95%
	Time of administration	4	4%	96	96%
	Mode of administration	4	4%	96	96%
Delivery	Time of delivery	90	90%	10	10%
	Date of delivery	88	88%	12	12%
	Mode of delivery	97	97%	3	3%
	Name of doctor/midwife	98%	98%	2	2%
	Assisted delivery	16	16%	84	84%
	1 st or 2 nd degree tear	41	41%	59	59%
	Episiotomy done	60	60%	40	40%
	Complications if existing	27	27%	37	37%
Placenta	Date of expulsion of placenta	85	85%	15	15%
	Time of delivery of placenta and membranes	88	88%	12	12%
	State of placenta and membranes after delivery	94	94%	6	6%
Condition of infant at birth	Born alive	97	97%	3	3%
	Apgar score at 1minutes	90	90%	10	10%
	Apgar score at 5 minutes	92	92%	8	8%
	Birth weight	100	100%	0	
	Gender	100	100%	0	
	Quick examination of newborn done	83	83%	17	17%

4.7.2.1. Data relating to the progress of labour

Cervical dilatation and effacement was recorded in 63 (63%) and 19 (19%) of partograms respectively, the level of the foetal head was recorded in 58 (58%) partograms, and uterine contractions were recorded in 50 (50%) of partograms. The above result revealed that, although information on the highlighted variables was

recorded legibly in almost more than half of the partograms, it was inaccurate and incomplete (**Figure 4.34**).

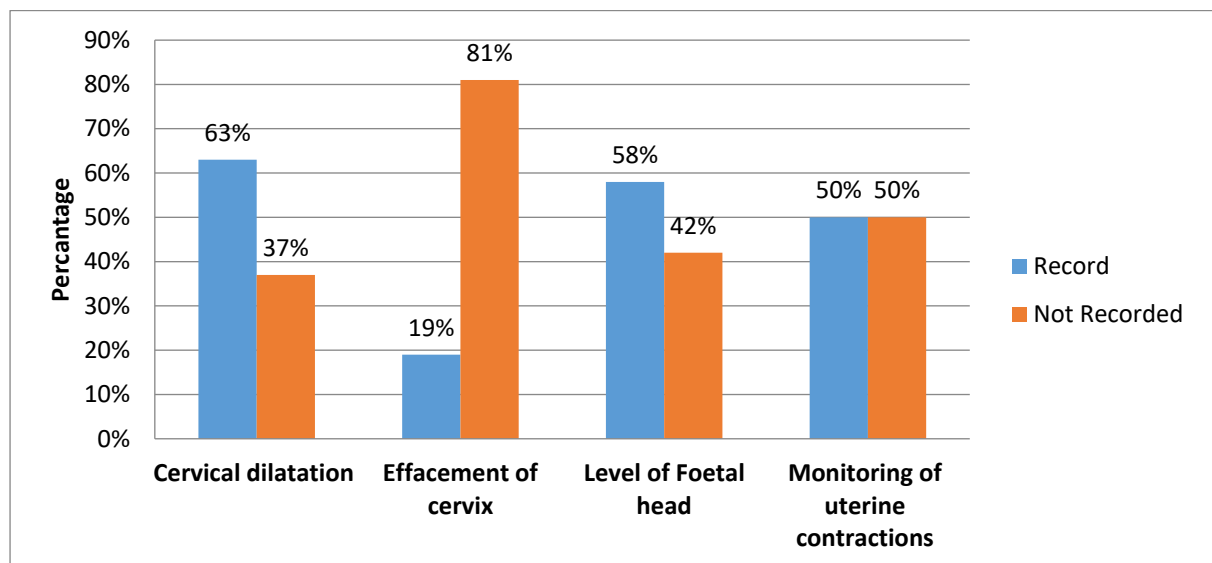


Figure 4.34: Recording of data regarding cervical dilatation and effacement, level of foetal head and uterine contractions on the partograms (n=100)

4.7.2.2. Data relating to maternal condition

Temperature, pulse, blood pressure and urine output were recorded in 19 (19%), 34(34%), 44(44%) and 14(14%) partograms respectively. Recording of all of the abovementioned variables on the partograms was extremely poor in almost all 100 partograms. Among the recorded maternity case records, more than half of them were inaccurately and incompletely documented. Maternal condition is a very crucial component of the partograms, since failure to identify hypertensive disorders of pregnancy, like pre-eclampsia and eclampsia, by monitoring blood pressure half-hourly could result in maternal mortalities and morbidities. Temperature was the least monitored variable, 19 (19%) partograms recorded this, which could lead to an inability to diagnose elevated temperatures, a factor which clinically indicates infections or sepsis in pregnancy. Recording of vital signs safeguards the women against maternal distress. A high maternal pulse rate could be indicative of impending uterine rupture, exhaustion or dehydration that is why it is very significant to monitor this variable during labour. Furthermore, urine should be measured carefully, two-hourly, in the active phase of labour and should be tested for protein, sugar, acetone and volume to exclude possible complications. The above results indicated that midwives and

obstetricians recorded temperature, pulse, blood pressure and urinalysis very poorly on the partograms (**Figure 4.35**).

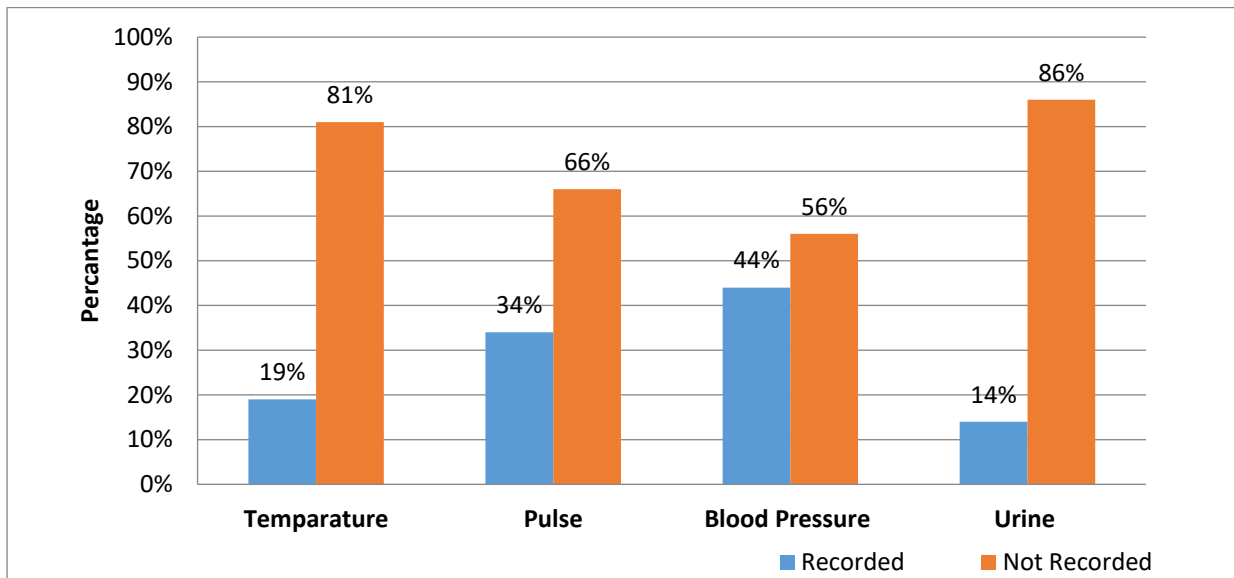


Figure 4.35: Recording of temperature, pulse, blood pressure and urine output on partograms (n=100)

4.7.2.3. Data relating to medication administered during labour

Data relating to the type of medication, dosage of medication, the time and mode of administration was recorded on 9 (9%), 5 (5%), 4 (4%) and 4 (4%) partograms respectively. These findings revealed extremely poor recording of the medication administered during labour, simply because not all women received treatment when they were in labour, especially when the progress of labour was normal (**Figure 4.36**).

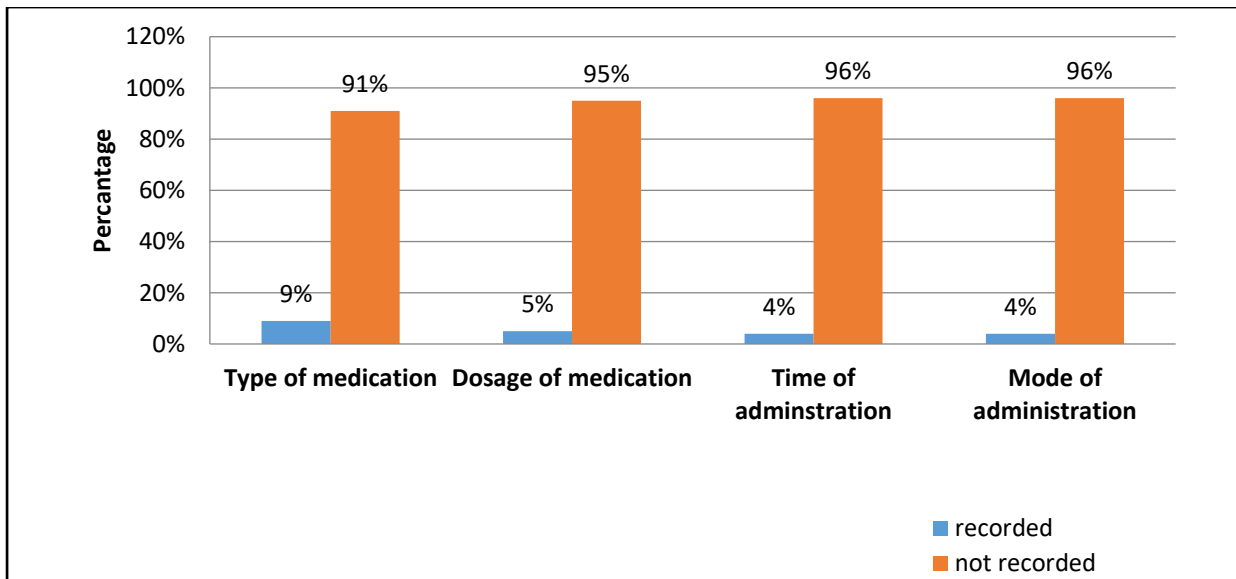


Figure 4.36: Recording of the type of medication, dosage, time of administration and mode of administration on the partograms (n=100)

4.7.2.4. Data relating to delivery of the neonate.

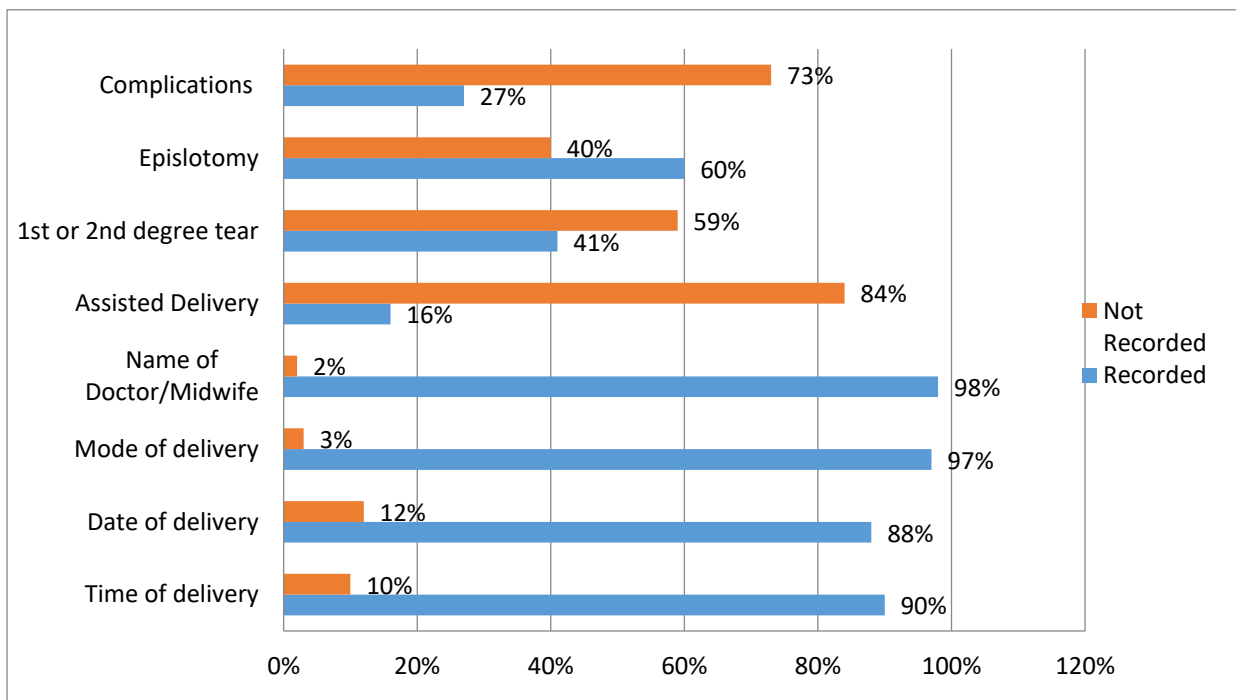


Figure 4.37: Recording of data relating to delivery of the neonate on the partogram (n=100)

4.7.2.5. Data relating to the placenta.

The date and time of expulsion of the placenta was recorded in 85 (85%) and 88 (88%) partograms respectively, whereas the state of the placenta and membranes after delivery was recorded in 94 (94%) partograms. In more than half of the partograms, the above information was legibly, accurately and completely recorded, however, a small percentage of partograms had missing information (**Figure 4.38**).

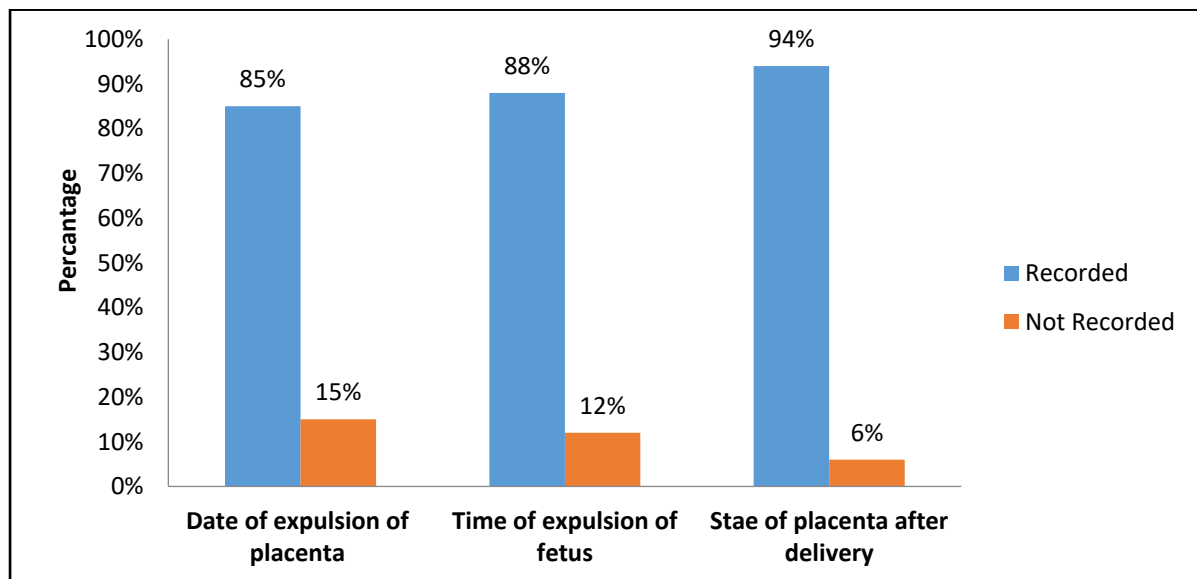


Figure 4.38: Recording of the date and time of expulsion of the placenta, the state of the placenta and membranes after delivery (n=100)

4.7.2.6. Data relating to condition of the infant at birth

The neonatal condition at birth was recorded in 97 (97%) partograms; the Apgar score at 1 minute was recorded in 90 (90%) partograms and at 5 minutes was recorded in 92 (92%) partograms. The gender and weight of the baby was recorded in 100 (100%) partograms, whereas whether a quick examination of the newborn was conducted was recorded in 83 (83%) partograms. The recording of the variables was excellent with a positive result (> 90%) since all information was legibly, accurately and completely recorded (**Figure 4.39**).

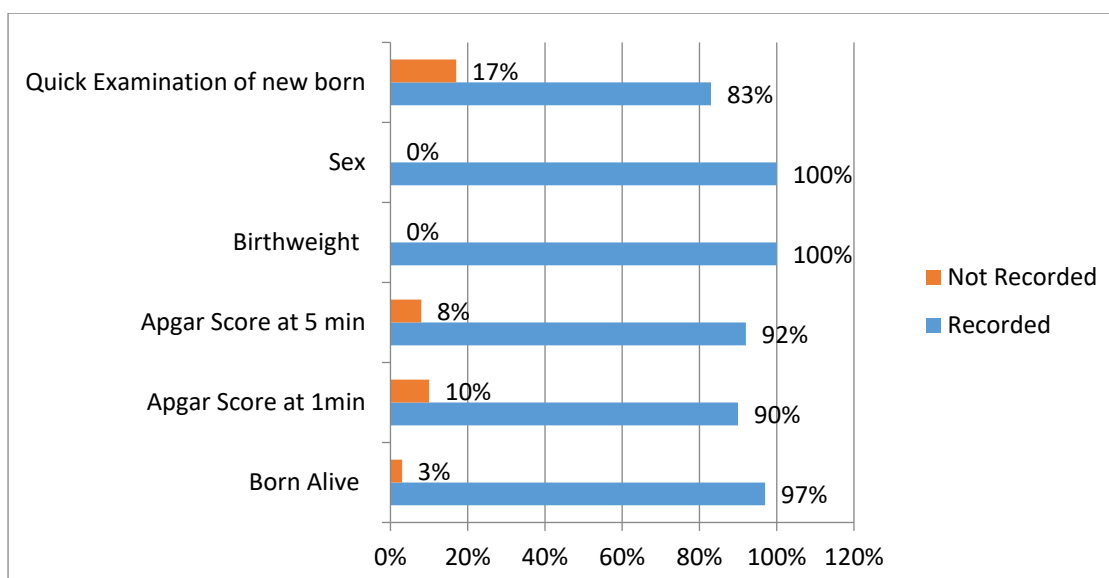


Figure 4.39: Recording of neonatal outcome, Apgar score, gender, birth weight and whether a quick examination of the newborn was recorded on the partograms (n=100)

Summary of the parameters of labour that were found to be completely recorded and those that were not recorded in the audited partograms.

Table 4.10 shows the summary of the parameters of labour that were found to be completely recorded and those that were not recorded in the audited partograms.

Table 4. 10: Proportions of partograms with records of parameters of labour (n=100 audited records)

Parameters of labour	Recorded		Not recorded	
	Freq.	%	Freq.	%
Foetal heart rate	52	52%	48	48%
Cervical dilatation	63	63%	37	37%
Cervical effacement	19	19%	81	81%
Descent of foetal head	58	58%	42	42%
Uterine contractions	50	50%	50	50%
Maternal blood pressure	44	44%	56	56%
Maternal pulse rate	34	34%	66	66%
Maternal Temperature	19	19%	81	81%
Urinalysis	14	14%	86	86%

4.8. Conclusion

This chapter presented the comprehensive results obtained from data analysis from both parts of the study as it was divided in to two aspects namely: Prospective and Retrospective. In the prospective part of this study, the key results included the differences in the responses of obstetricians and midwives, not only in the use of partograph, but also in the time intervals of recording of data. In the retrospective part of this study, the key results involved the recording of data on the audited partograms and focused on completeness that incorporated legibility, accuracy, writing of date and time as the criteria for analyses of recorded information on the audited partograms. The next chapter presents the discussion, conclusion and recommendations of the study.

Chapter Five

Discussion, conclusion, recommendations, of the study

5.1. Introduction

In this chapter the major results of the study will be discussed starting with the major results of the prospective part of the study, followed by those of the retrospective part of the study, in line with the research objectives of the study. Reiterate the purpose of this study was to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni district. Furthermore, the research objectives were: (i) to determine the midwives' and obstetricians' knowledge of the partograph in monitoring the progress of labour; (ii) to describe the utilization of the partograph by midwives and obstetricians in the labour ward; (iii) to identify factors that influence utilization of the partograph to monitor the progress of labour.

In this chapter the current results are compared with results from previous studies with respect to similarities and differences. The researcher further illustrated the limitations of the study, together with recommendations for obstetricians and midwives and conclusions based on the major results of this study.

5.2. Midwives' and obstetricians' knowledge of the use of partograph in monitoring progress of labour.

5.2.1. Source of Knowledge and skills to use the partograph

The findings of this study indicated that all obstetricians (100%) and midwives (100%) involved in the study indicated that they had been trained in the use of partograph. Furthermore, it was found that 100% of obstetricians were trained in the use of the partograph at medical school. In contrast, the responses of 63 (90%) midwives revealed that they were trained during their tertiary education at Universities and Colleges respectively. This was the majority, as only 7 (10%) midwives indicated that

they were trained when they were already practicing as qualified midwives during in-service training.

The source of knowledge on partogram was identified in the study conducted by Oladapo et al. (2006). The authors highlight that Life Saving Skill training workshop was reported as the primary source of knowledge by one-third of those aware of the partograph and these individuals generally had fair and good levels of knowledge. Opiah et al. (2012) in a cross-sectional study to assess knowledge and utilization of the partograph among midwives in two tertiary health facilities in the Niger Delta Region of Nigeria, 86.2% of respondents had partograph training while in school of midwifery, 13% said they were not trained in the midwifery school. The training of midwives on the use of the partograph as well as periodic workshops and seminars should be seen as vital to ensure the safety of women in labour. Further research on the outcome of an incomplete or wrongly recorded partograph is recommended (Mathibe-Neke et al., 2013).

5.2.2. Assessment of women in labour on admission to labour ward.

The results from this study indicated that 100% of obstetricians and 100% of midwives reviewed the antenatal clinic records of all women in labour admitted to the labour ward of this hospital and they also indicated that they identified and wrote maternal and foetal risk factors. The majority of the obstetricians, (93%) and midwives (88.6%) stated that they documented the date and time of admission, the date and time when the membranes ruptured, as well as the date and time when labour started on the partographs. The results of this study revealed that the respondents' assessment of the antenatal clinic records and identification of maternal and foetal risk factors were done as expected from trained and practising midwives and obstetricians.

In this study, the results demonstrated that a high percentage of obstetricians (90%) and midwives (85.7%) indicated that a decision as to the diagnosis and management of a woman is always outlined at the end of the initial assessment. Twenty-eight (93%) of the obstetricians and seventy (100%) midwives stated that the findings on admission are always checked and recorded by a midwife or an obstetrician.

Similarly, to the findings from this study, in a study conducted by Mathibe-Neke et al. (2013), it was found that twenty-five respondents (74%) indicated that the partograph is important in the management of labour as it helps in monitoring the progress of labour. Seven (21%) indicated that it is important for maternal wellbeing, and further specified that it is important for both maternal and fetal wellbeing. Furthermore, in the same study by Mathibe-Neke et al. (2013), it was noted that fifteen (44%) stated that it assists with detecting complications allowing them to intervene accordingly. Eighteen midwives (53%) specified that the partograph should be initiated during the active phase of the first stage of labour. Some of the responses were non-specific for example, all stages of labour, first stage to discharge, first stage to the fourth stage (Mathibe-Neke et al., 2013).. Four respondents stated that the partograph is initiated during the latent phase of the first stage of labour which is a recommended guideline but only if the woman is experiencing true labour (Department of Health, 2015a; Mathibe-Neke et al., 2013).

5.2.3. Monitoring of the foetal condition

5.2.3.1. Foetal Heart Rate

The majority 61(87.1%) of the midwives response was that, in the active phase of labour, the foetal heart rate should be monitored half-hourly, 8 (11.4%) midwives said one-hourly and 1 (1.4%) midwife opted for two-hourly, while only 13 (43%) obstetricians felt that, in the active phase of labour, the foetal heart rate should be measured half-hourly, 5 (16.7%) indicated one-hourly, 11 (36.7%) said two-hourly and 1 (3.3%) opted for four-hourly. These findings indicated that midwives are the ones who are almost always at the bedside of the women in labour doing observations and all other assessments. This also affirms the findings in previous studies that reported that the experienced midwife develops an extra sixth sense in her assessment of the progress of labour , and of the maternal and fetal condition (Sellers, 1995).

5.2.3.2. State of membranes and liquor

More than half 57 (81.4%) midwives, and 20 (66.7%) obstetricians stated that, in the active phase of labour, the state of the membranes and liquor is monitored two-hourly which is the most appropriate response, since according to the Guidelines for Maternity Care in South Africa (Department of Health, 2015a) frequent vaginal examinations may introduce infection. It is therefore possible that complications detrimental to the woman and the foetus could be promptly identified. In support of the results of this study, Nolte (2008) also stated that the amniotic fluid should be recorded regarding whether the membranes are intact, clear or meconium-stained. In addition, Pettersson, Svensson and Christensson (2000) reported that the condition of the amniotic fluid is an important indicator for early detection of foetal asphyxia.

5.2.3.3. Caput and moulding

Fifty-seven (81.4%) midwives reported they would monitor the degree of caput and moulding in the active phase of labour two-hourly; eight (11.4%) indicated hourly and five (7.1%) responded half-hourly. Twenty-two (73.3%) obstetricians indicated that they would monitor the degree of caput and moulding in the active phase of labour at two-hourly intervals, six (20%) hourly, one (3.3%) opted for half-hourly and one (3.3%) said four-hourly. These results indicated that, with monitoring of the degree of caput and moulding in the active phase of labour, the two-hourly interval monitoring was the most appropriate intervention to be done by the respondents. Similarly to the two hourly monitoring of membranes and liquor which according to the Guidelines for Maternity Care in South Africa (Department of Health, 2015a) introduce infection if they are frequently done. However, Nolte (2008) agreed that moulding is an indication of how well the maternal pelvis can accommodate the foetal head.

Although the results of this study showed that less than 50% of the obstetricians indicated that they monitored and plotted the foetal status during the active phase of labour half hourly but more than 80% of the midwives responded the same way. The midwives' response concurs with The Fourth Report on Confidential Enquiries into Maternal Deaths (NCCEMD), (2006:36) which requires that the foetal heart rate be monitored half-hourly in the active phase of labour. Nolte (2008) reiterates that the

foetal heart rate should be assessed and recorded on the partograph every 30 minutes during the active phase of labour. Therefore, half-hourly monitoring of foetal status would assist the respondents to be able to diagnose complications such as foetal distress due to intrapartum hypoxia and to act upon them promptly to prevent perinatal mortalities as it is required by the protocol of the Department of Health (2007). In contrast, Tucker (2004) reported that the frequency of assessment of the foetal heart rate should be guided by the risk status of both the woman in labour and the foetus. If both the woman and the foetus are classified as high risk, the foetal heart rate should be checked half-hourly in the active phase of labour (Shokane, 2011; Tucker, 2004).

5.2.3.4. The progress of labour

The majority of the obstetricians, 26 (86.7%) and midwives, 60 (85.7%) strongly agreed/agreed that cervical dilatation, effacement and descent of the foetal head are recorded two-hourly in the active phase of labour. These results were supported by the South African maternity guideline from Department of Health (2007) where it is stated that cervical dilatation, and effacement and descent of the foetal head are recorded four-hourly in the latent phase and two-hourly in the active phase of labour. Less than 50% of respondents, though, disagreed with this statement. Regarding uterine contractions, the majority of obstetricians, 20 (66.7%) and midwives, 50 (71.4%) strongly agreed/agreed that uterine contractions are measured at half-hourly intervals in the active phase of labour, although less than 50% respondents from both groups disagreed probably because it is not always possible to monitor contractions half –hourly especially if a midwife is looking after two or more women in labour.

In addition, the majority of obstetricians, 28, (93.3%) and midwives 65 (92.9%) also strongly agreed/agreed that the partograph is systematically used in the labour ward, hence the WHO (2010: 4) has also approved the universal application of the partograph for the management of labour. Again, the majority of the obstetricians, 28 (93.3%) and midwives, 69 (98.6%) strongly agreed/agreed that the partograph is a tool for decision-making in the labour ward, which is supported by the WHO (2010) in its report stating that the partograph is a necessary tool in the management of labour and recommending its universal application in labour wards. All the obstetricians, 30 (100%) and midwives, 70 (100%) strongly agreed/agreed that the partograph is a tool

used to monitor the progress of labour, and 30 (100%) obstetricians and 70 (100%) midwives, respectively, strongly agreed/agreed that the partograph is a tool to detect complications during labour which is still in line with recommendations of the (WHO, 2010).

Literature emphasizes that the partograph improves the management of labour as recommended by the guidelines for maternity care in South Africa (Department of Health, 2015a). Hence, all obstetricians, 30 (100%) and the majority of midwives, 68 (97.1%) strongly agreed/agreed that the partograph improves the management of labour, whereas only 3 (10%) obstetricians and 18 (25.7%) midwives strongly disagreed/disagreed that the partograph is difficult to use in the labour ward which probably could be those who were newly employed and had never practiced in labour ward.

5.2.3.5. Administration of medication during labour

According to the South African Maternity Guidelines from Department of Health (2007), intravenous fluids are administered only if necessary, whereas oxytocic drugs are used for the augmentation of labour in cases of poor progress and analgesics, e.g. pethidine or entonox gas inhalation are drugs of choice administered for pain relief during labour, lastly antibiotics may be administered in cases of prolonged rupture of the membranes. Similarly, most of the obstetricians, 20 (66.7%) and midwives, 42 (60%) strongly agreed/agreed that intravenous fluids are administered only if necessary, and that oxytocic drugs are used for the augmentation of labour in cases of poor progress, and also that analgesics, e.g. pethidine or entonox inhalation are administered for pain relief whilst antibiotics may be administered in cases of prolonged rupture of the membranes, but less than 50% respondents from both groups disagreed to this statement.

5.2.3.6. Maternal condition

According to the South African Maternity Guidelines from Department of Health (2015a) blood pressure and pulse rate are observed half-hourly in the active phase of labour, while temperature is observed four-hourly throughout labour, and urinalysis

and urine output are checked two-hourly in the active phase of labour. The majority of the obstetricians, 24 (80%) and midwives, 53 (75.7%) strongly agreed/agreed that these parameters are measured according to the guidelines, however, only a few of the respondents disagreed to these interventions. These findings have identified a serious gap since monitoring of vital signs alerts the midwife of potential complications like imminent eclampsia if there is acute rise of blood pressure and or maternal exhaustion if there are more leucocytes in urine.

5.3. Factors that influence the use of the partograph in the labour ward

5.3.1. Factors that facilitate the use of partograph in the labour ward

The response to factors that facilitate the use of partograph in labour ward was obtained from 70 midwives and 30 obstetricians. Forty-one (58.6%) of the midwives and sixteen (53.3%) obstetricians stressed the need for a full complement of staff in the labour ward, while twenty (28.6%) midwives and ten (33.3%) obstetricians indicated that there is a need for frequent in-service training for both midwives and obstetricians, so that they could be able to make use of the partograph effectively. In support of these findings the pre-service training alone was not sufficient for effective utilization of the partograph in the practical area Yisma et al. (2013a). Seven (10%) midwives and two (6.7%) obstetricians highlighted that there is need for equipping both groups with knowledge of the function of the different variables listed on the partograph and its use to predict abnormal labour. In addition, the remaining 2 (2.9%) midwives and 2 (6.7%) obstetricians felt that if the work load in the labour ward could be alleviated by employing more staff, this could ease work pressure, and therefore midwives and obstetricians would be able to record data on the paragraph completely. These results were also supported by Thopola (2002) where he stated that midwives expressed exhaustion, general body pains and insomnia because they were short-staffed.

5.3.2. Factors that hinder the use of the partograph in the labour ward.

The majority, 96 (96.0%) of the respondents highlighted that there are several factors which are known to hinder the use of the partograph to monitor the progress of labour and that these include little or lack of knowledge of partograph use, too much detail to fill in, time-consuming, shortage of staff, obstetricians perceived partograph use as a task for midwives. The response to this question was variable from both the midwives and obstetricians, however, the obstetricians portrayed a negative attitude towards the use of partograph since they perceived it the task for midwives. Adesola et al. (2014) in support of the results of this study reported the grouping of the midwives attitudes showed 54.5% had positive attitude while 45.5% had negative attitude towards partograph use.

Forty-five (64.3%) midwives and twelve (40%) obstetricians highlighted that the labour ward was understaffed. In addition, 15 (22.4%) midwives and 9 (31%) obstetricians felt that the partograph was too detailed and that completing the partograph was time-consuming and it was not practical to use. The lack of knowledge on the use of the partograph was also mentioned by 6 (8.96%) midwives and 4 (13.8%) obstetricians, whereas 4 (5.97%) midwives and 5 (17.2%) obstetricians indicated that inadequate in-service training hindered the use of the partograph in the labour ward. Maputle (2005) supports some of these results that, due to shortage of midwives, it is not easy to spend quality time with all women in labour. This also affirms the findings in previous studies that midwives expressed exhaustion, general body pains and insomnia because they were short-staffed (Thopola, 2002). The shortage of nurses in South Africa impacts negatively on the delivery of healthcare services in the country (Mateus, Allen-Ile and Iwu, 2014).

The shortage of nurses is a chronic problem in South Africa. Many hospitals in the rural areas and small towns do not have adequate health personnel. Yet there are many South African nurses who work overseas (Mateus et al., 2014). Alonso-Garbayo and Maben (2009) note that a global shortage of healthcare workers has become a major concern for both developing and developed countries, especially since the government of South Africa wishes to eliminate mortality among children during birth, rising vaccine exposure, and epidemics such as HIV/AIDS (Mateus et al., 2014; Alonso-Garbayo and Maben, 2009).

Bimenyimana, Poggenpoel, Myburgh and Van Niekerk (2009) highlighted that shortage of staff resulted in a high workload and this led to job dissatisfaction, absenteeism and a high staff turn-over. Dolamo (2009) reiterated that an estimated 13,496 nurse's work in developed countries and that shortage of staff also contributed to nurses overwork and this resulted in tiredness and job dissatisfaction.

Generally, completing the partograph was seen as an additional task for a health care professional working in a busy labour ward hence they could not be motivated to complete the partograph. However, in the study conducted by Mohammad and Fahdhy and Chongsuvivatwong (2005) it was observed that while midwives had received training on the utilisation of the partograph, they were not documenting their findings because they complained that the partograph required too many details to be completed. Mafalo (2003) further reported that many nurses including midwives are also dying of the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) in this country, and this also impacts negatively on health care providers. According to Mafalo (2003) the population of South Africa grows by 14% a year, while the nursing profession grows only by 10% and this results in a gradual shortage of fully-qualified nursing staff.

This clearly indicated the need for in-service refresher training which midwives and obstetricians should periodically undergo on the use of the partograph, especially the newly-qualified midwives and obstetricians, while those with more work experience (in terms of duration) should mentor the newly-employed staff. However, there is also a need for very urgent steps to improve the knowledge of obstetric care-givers on partograph use through workshops and seminars in order to maximize knowledge and proper utilization of the partograph.

Yisma et al. (2013a) stated in his study that the midwives cited the following reasons for not routinely using the partograph; little or no knowledge of the partograph, too much detail to fill in, time-consuming, lack of an adequate number of personnel and lack of in-service training. Nakkazi and Asis (2001) further added that midwives often felt that completing the partograph was an additional time-consuming task, and they did not always understand how the utilisation of the partograph to monitor pregnant women in labour could be life-saving.

5.4. Utilization of the partograph by midwives and obstetricians in the labour ward (retrospective part of the study)

5.4.1. Documentation/recording of the partograph

In this study it was discovered that all women were monitored using the partogram. However, most of the parameters had been recorded at least once in the partogram. It was also observed that the documentation in 19 (19%) partograms was illegible, inaccurate, and incomplete as such, did not provide any valuable information. Twenty-two (22%) of the partograms were recorded legibly, but inaccurately and incompletely. The partograms that had inaccurate and incomplete information could have been difficult to record for the health care professionals who were newly-qualified and uncertain as to what to record.

According to a study by Mulondo (2007) that reviewed maternity case records, it was discovered that some midwives were incompetent in recording the progress of labour and the correct plotting of the partograph. The findings from a study conducted in Ethiopia by Yisma et al. (2013a) revealed high proportions of unrecorded parameters of labour on the modified WHO partograph and substandard monitoring of the progress of labour among public health institutions in Addis Ababa, Ethiopia. Lack of records for the descent of the presenting part in 84%, moulding in 86.7% and the foetal heart rate in 41.1% of the studied partographs indicates poor documentation, and perhaps monitoring and supervision of labour.

5.4.1.1. Presentation of demographic data in the partograph

With the chart audit, the monitoring of demographic details in respect to personal particulars for identification; the women's names and surnames 100 (100%) and registration numbers 100 (100%) were the most legibly, accurately and completely recorded parameters on the partogram. A small percentage 7 (7%) of the partograms had no record of the patients' ages, gravid and parity. This missing information would have identified particular risks factors and thus prompt intervention could have been implemented to curb serious complications. According to Neilson et al. (2003) and Mathai (2009) women with advanced age and higher parity have greater chances of

developing complications and these women require close monitoring throughout their pregnancy. Therefore, the recording of these observations is important and would act as warning signs for unforeseen complications. The age, parity and gravid may have a direct effect on the labour outcomes (Mathai, 2009; Neilson et al., 2003).

5.4.1.2. The state of the membranes on admission

This study revealed significant results, since, on admission, the documentation of the state of the membranes was recorded legibly, accurately and completely in more than 80 (80%) of the partograms, although the date and time of rupture of the membranes was only recorded in 40 (40%) of the partograms. Nolte (2008) confirmed in his study that the amniotic fluid should be recorded regarding whether the membranes are intact, clear or meconium-stained. In addition, Pettersson et al. (2000) reported that the condition of the amniotic fluid is an important indicator for early detection of foetal asphyxia.

5.4.1.3. The foetal condition

The foetal heart rate in 52 (52%), state of liquor in 59 (59%), degree of caput in 53 (53%) and degree of moulding in 54 (54%) partograms was poorly recorded such that, although the recording was legible, but it was inaccurately and incompletely documented. However, literature in previous studies emphasizes that the expert, experienced midwife develops an extra sixth sense in her assessment of the progress of labour, and of the maternal and fetal condition (Sellers, 1995). According to Department of Health (2015a) effective monitoring of the foetal conditions, for low risk labour, listen to the fetal heart with, ideally, a hand-held Doppler device, or a fetal or normal stethoscope, before and immediately after contractions. CTG is used for high risk labour only and must be available in all hospitals. CTG monitors are not recommended for intrapartum use in CHCs. After CTG interpretation, write a note about the findings in the woman's notes, so that a record of the CTG is still available even if the CTG tracing is lost. All CTG tracings must be kept safely in the woman's file and be stored with the file after delivery (Department of Health, 2015a).

5.4.1.4. The progress of labour

Of the 100 partograms that were reviewed, cervical dilatation, effacement of the cervix, level of the foetal head and uterine contractions were recorded in 63 (63%) and 19 (19%), 58 (58%) and 50 (50%) of the partograms respectively. These findings indicated, therefore, that although some of the respondents had knowledge of the utilization of the partograph, but information was recorded inaccurately and incompletely which could probably be due to shortage of staff and high workload. These results were supported by the South African Maternity Guideline from Department of Health (2007) where it is stated that cervical dilatation, effacement and descent of the foetal head are recorded four-hourly in the latent phase and two-hourly in the active phase of labour.

5.4.1.5. Administration of treatment during labour

Data relating to type of medication, dosage, time and mode of administration was recorded legibly, accurately, but incompletely in 9 (9%); 5 (5%); 4 (4%) and 4 (4%) partograms respectively. According to the South African Maternity Guidelines from Department of Health (2007), intravenous fluids are administered only if necessary, whereas oxytocic drugs are used for the augmentation of labour in cases of poor progress and analgesics, e.g. pethidine or entonox gas inhalation are drugs of choice administered for pain relief during labour, lastly antibiotics may be administered in cases of prolonged rupture of the membranes. These results revealed sub-standard care on the part of the midwives since they are the ones who administer medication after it has been ordered by the obstetrician.

5.4.1.6. Maternal condition

Maternal condition is monitored and recorded in the last component of the partograph. In this study, temperature was not recorded in 81 (81%) partograms, pulse in 66 (66%), blood pressure in 54 (54%) and urine output in 86 (86%). These variables were poorly recorded since more than half the parameters were neither inaccurate nor incomplete, but were not recorded at all. These findings identified a serious gap since monitoring of vital signs alerts the midwife of potential complications like imminent eclampsia if

there is acute rise of blood pressure and or maternal exhaustion if there are more leucocytes in urine.

A study conducted by Delvaux, Aké-Tano, Gohou-Kouassi, Bosso, Collin and Ronsmans (2007) on 229 women, affirms that blood pressure was measured in less than half, 115 (50%) of the women and the partograms were completed in only 5% of the women in labour. Nyamtema et al. (2008) confirmed in his study that temperature, pulse and blood pressure were not recorded in 70%, 76% and 47% of the partographs, respectively. It is, therefore, clear that monitoring of the maternal condition is sub-standard in low and middle income countries.

In a retrospective study on previously completed partograms, Basu, Hoosain, Leballo, Leistner, Masango, Mercer et al. (2009) reiterated that the blood pressure, pulse and temperature were documented completely in 50 women, (45%) 29 (26%) and 41 (37%), respectively, and were not recorded in 29 (26%) 40 (36%) and 42 (38%) women, and infrequently recorded in the remainder.

5.4.1.7. Recording of post-delivery information

Post-delivery results revealed a significant and tremendous outcome since, in more than half of the partograms, this component was legibly, accurately and completely recorded. The recording of the date and time of delivery was recorded in 90 (90%) partograms, the mode of delivery in 90 (97%) partograms and the name of the midwife or doctor who conducted the delivery was recorded in 98 (98%) partograms respectively. The date and time of the expulsion of the placenta was recorded in 85 (85%) and 88 (88%) partograms, whereas the state of the placenta and membranes after delivery was recorded in 94 (94%).

The neonatal condition at birth was recorded in 97 (97%) partograms, Apgar scores at 1 minute were recorded in 90 (90%); Apgar scores at 5 minutes were recorded in 92 (92%); whereas details of gender and weight of the baby were recorded in 100 (100%). In addition, quick examination of the newborn was recorded in 83 (83%) partograms. However, indication of whether the delivery was assisted or not was recorded completely only in 16 (16%) partograms probably because complicated deliveries like breech or shoulder dystocia are very rare since they are normally

diagnosed during antenatal period and delivered per caesarian section. Details relating to a 1st or 2nd degree tear were recorded in 41 (41%) and record of whether an episiotomy was performed was shown in 60, (60%) while complications like postpartum haemorrhage were recorded in 27 (27%) partograms respectively since far less than 50% women present with postpartum haemorrhage after delivery.

A recent analysis of maternal and perinatal deaths in the intrapartum period showed that sub-standard care and a lack of basic obstetric knowledge and skills was responsible for these deaths (Ameh and van den Broek, 2015). Ogwang et al. (2009) reported that, in their study, 1170 (69.9%) partograms were used in a total of 1674 deliveries, while Kim, Tappis, Zainullah, Ansari, Evans, Bartlett et al. (2012) stated that only 107 (62%) partograms were used in 173 deliveries and that only 30 (28%) deliveries were managed by a partogram, while information on partograms used was inaccurate, incomplete and missing in 66 (38%) of the cases. Information on parity was missing in 39 (23%) of the cases, indications relating to caesarean section were missing in 15 (9%) cases, information on anaesthetic use was missing in 10 (6%) cases, foetal outcomes were missing in 5 (3%) of the cases, and emergency classification was missing in 4 (2%) of the cases. Information on cervical dilatation, cervical effacement; level of foetal head and uterine contractions was missing in 37%, 81%, 42% and 50% of the partograms respectively. Temperature, pulse, blood pressure and urine estimation was unrecorded in 81%, 66%, 56% and 86% of the partograms respectively. With regard to the state of the membranes on admission, the date and time of the rupture of the membranes was missing in 59% and 60% of the partograms respectively. The state of liquor, caput and moulding during labour and delivery was missing in 41%, 47% and 46% of the partograms respectively. With regard to medication administered during labour, the type, dosage, time of administration and mode of administration was not recorded in 91%, 95%, 96% and 96% of the partograms respectively. The information relating to delivery, the state of the placenta and the condition of the newborn was well recorded, except for details of assisted deliveries, 1st or 2nd degree tears, episiotomies and complications.

A study conducted by Khonje (2012) demonstrated that not documenting or forgetting to document after carrying out observations as was expressed, was a form of negligence. In some cases, health workers used shortcuts and could not carry out

observations, this was also negligence. These behaviours might have led to wrong decisions. Lack of complete information can make normal labours to become abnormal labours. This might have increased the C/S rate. Laziness among health workers made them not maximise the time to assess and document on the partograph. Laziness also contributed to the partial filling in of the partograph describing it to be detailed. It is the researcher's observation that whenever people settle in routines, the initial value of an activity or procedure is usually lost. So is the use of partograph at the units that it has become a routine activity that is no longer valued; and documentation may be looked at as not important rather than an extra work (Barros et al., 2010).

5.5. Training of midwives and obstetricians

Although all the midwives and obstetricians in this study were trained in the use of partograph, but it was surprising that most of the parameters in the partograms were inaccurately and incompletely recorded. The obstetricians perceived partograph use as a task for midwives. The response to this question was variable from both the midwives and obstetricians, however, the obstetricians portrayed a negative attitude towards the use of partograph since they perceived it the task for midwives. Adesola et al. (2014) in support of the results of this study reported the grouping of the midwives' attitudes showed 54.5% had positive attitude while 45.5% had negative attitude towards partograph use.

A questionnaire-based study involving 60 midwifery students showed that all the students were adequately assisted theoretically and minimally in the clinical setting, which might have implications for the poor utilization of the partograph when they are registered midwives. In addition, the students indicated that the partograph was mostly used by registered midwives, 33, (55.4%) followed by doctors, 22 (36.1%) and midwifery students, 5 (8, 4%). This reflected inadequate exposure of midwifery students to the use of the partograph in a clinical setting (Mathibe-Neke, 2009).

There is, therefore, a need to standardize training programs, especially on practical issues, e.g. clinical procedures, including use and interpretation of the partograph, as well as the incorporation of a system of mentorship in the labour ward that will ensure

that midwives and obstetricians are adequately up skilled. It is possible that the monitoring of progress of labour was more intense in high-risk women which could account for those partograms that were incomplete.

5.6. Recommendations

In view of the results presented in chapter four in this study the researcher will present the following recommendations for consideration by the relevant authorities of government and professional stake-holders.

5.6.1. In-service training for health care providers

There is widespread concern regarding the correct and efficient use of the partograph for the monitoring of the progress of labour. Given the high maternal and perinatal morbidity and mortality, several interventions have been identified as important for curbing this high maternal mortality rate. One of these interventions includes the early detection of the abnormal progress of labour through the use of the partograph, as recommended by the (NCCEMD, 2012). In addition, the NCCEMD (2007) reported that, of the women who died from pregnancy-related sepsis, 163 deaths were related to complications resulting from obstructed and prolonged labour and that the lack of and or improper use of the partogram was probably a contributing and avoidable factor in some of these deaths.

Midwives and obstetricians working in the labour wards, therefore need to constantly up skill their knowledge and obtain information in order to practice and provide high quality care to women in labour, therefore in-service training to strengthen and upgrade the knowledge and competency of qualified health personnel, namely midwives and obstetricians is thus imperative.

The emphasis on the use of partograph is for early detection of deviations from normal and thus preventing them from becoming complications. Hence, this shows the significance of carrying out accurate and regular observations so that the midwives and obstetricians know when labour is deviating from the norm so as to institute prompt intervention. Each component of the partograph requires legible, accurate and

complete information, since each part complements each other in the effective utilisation of the partograph (Mathai, 2009).

5.6.2. Education and curriculum for training of midwifery and medical students.

There is a dire need to discuss the results of this study with the staff of nursing schools and medical schools so that standardization of teaching at tertiary level in the use of the partograph is done. This will be in line with the (NCCEMD, 2007) recommendations as suggested by the Essential Steps in the Management of Obstetric Emergencies (ESMOE) Board, which started an initiative to standardize the use of the partograph by midwives and medical students in South Africa a long time ago to ensure quality service delivery thus saving lives of mothers and babies.

5.6.3. Policy-makers, management and government

The Government, including management has to ensure that policies pertaining to partograph use are known, displayed on bulletin boards and regular partogram audits are implemented in labour wards of all health facilities.

The results of this study demonstrate, that the partograph is not being used properly, and that the National Committee for the Confidential Enquiries into Maternal Deaths (NCCEMD) (2012) recommendations of performing quality improvement regarding proper use of the partograph may not be taking place on a regular basis in our hospitals. Therefore, improper use of the partograph and poor interpretation may be prevalent. Government, therefore has to provide support for the training of obstetricians and midwives in ESMOE, by informing the Chief Executive Officer (CEO) that they are required to ensure that training that focuses on emergency obstetric simulation training exercises is taking place at least monthly in all maternity wards of their institutions.

In addition, one way of monitoring and evaluating recommendations is to have regular clinical audits to establish where problems lie, and then to institute regular in-service training of health professionals and students at the bedside in the form of emergency

obstetric simulation training exercises with case scenarios. The Government has responsibility also to ensure that staffing and equipment norms are established for each level and for every health facility providing health care services to pregnant women to prevent human and material resources shortages.

5.6.4. Further research

Similar research studies should be conducted on a larger scale to explore the knowledge and use of the partograph by midwives and obstetricians in both private and public health facilities in different districts and provinces in South Africa and other African countries. In addition, a study focusing on the direct effect of incomplete recording of the partograph on maternal and child mortality and morbidity is essential and needs to be conducted.

5.7. Limitations of the study

The limitations of this study included the following:

- Firstly, as this study is confined to midwives and obstetricians working in one public health facility, the results may not be generalizable or applicable to those working in other public health facilities or private health facilities.
- The other limitation of the study was the small sample size which could render estimates unstable and associations between dependent and independent variables undetectable.
- A further limitation of this study was that it did not assess the maternal and foetal outcome of completely and incompletely documented partograms.
- Limited experience in conducting a research project presents a limitation to the study as this was the first research project to be conducted by the researcher.
- Time constraints was one of the major limitations of conducting this study as the researcher conducted this study as a part time student as she was permanently employed by the Department of Health. This resulted to a delay in completing report writing of this study.

5.8. Conclusion

The results of this study not only confirm the impression that the partograph is not always entirely completed, but also that the views and attitudes of midwives and obstetricians differ. The results of this study may be understandable in a district hospital given the shortage of medical staff, but what is of extreme concern is that this is occurring in a regional hospital. It is, however, also possible that obstetricians and midwives recorded their findings elsewhere in the maternity-case records rather than on the partograph. However, this defeats the purpose of having the partograph and interpreting the information in a holistic manner.

South Africa has maternal and child mortality rates that are among the highest in the world and ever since the issue of maternal mortality was recognized as a major public health problem, the unbooked women with prolonged and obstructed labour have been recognized as a major risk factor for maternal deaths. Therefore, more attention has to be given to improving knowledge and skills around managing obstetric emergencies. This study revealed high proportions of unrecorded parameters of labour on the partographs and sub-standard monitoring of the progress of labour which is an example of the general lack of uniform standards in the care of women in labour, contributing to poor maternal and neonatal outcomes.

The conclusion made based on the results of this study, therefore is that poor recording of the partographs might be one of the factors contributing to maternal and perinatal morbidities and mortalities in various institutions. It is evident, therefore, that despite the wide use of the partograph in the labour ward of the study institution, the completion, interpretation and eventual interventions are still deficient. Given these results, the researcher is calling upon all policymakers and health professional associations to recognise this issue of improper partograph use as a national emergency and to map out effective short-term solutions to ensure that partograph is used properly to save lives of mothers and babies.

References

- ADESOLA, O., ADEKEMI, O. & AUDU, O. 2014. Partograph utilization at three levels of health care delivery services in Ile-Ife, Nigeria. *International Journal of Caring Sciences*, 7, 678-691.
- ALONSO-GARBAYO, Á. & MABEN, J. 2009. Internationally recruited nurses from India and the Philippines in the United Kingdom: the decision to emigrate. *Human Resources for Health*, 7, 1-11.
- ALVES, S. V. 2007. Maternal mortality in Pernambuco, Brazil: What has changed in ten years? *Reproductive Health Matters*, 15, 134-144.
- AMEH, C. A. & VAN DEN BROEK, N. 2015. Making It Happen: Training health-care providers in emergency obstetric and newborn care. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 29, 1077-1091.
- ASIBONG, U., OKOKON, I. B., AGAN, T. U., OKU, A., OPIAH, M., ESSIEN, E. J. & MONJOK, E. 2014. The use of the partograph in labor monitoring: a cross-sectional study among obstetric caregivers in General Hospital, Calabar, Cross River State, Nigeria. *International Journal of Women's Health*, 6, 873-887.
- BARROS, F. C., BHUTTA, Z. A., BATRA, M., HANSEN, T. N., VICTORA, C. G. & RUBENS, C. E. 2010. Global report on preterm birth and stillbirth: Evidence for effectiveness of interventions. *BMC Pregnancy and Childbirth*, 10, 1.
- BASU, J. K., HOOSAIN, S., LEBALLO, G., LEISTNER, E., MASANGO, D., MERCER, M., MOHAPI, M., PETKAR, S. & TSHIOVHE, N. 2009. The partogram: A missed opportunity. *SAMJ: South African Medical Journal*, 99, 578-578.
- BAZIRETE, O. 2014. *Utilization of partogram among nurses and midwives in Rwamagana health facilities in the eastern province of Rwanda*. University of the Western Cape.
- BIMENYIMANA, E., POGGENPOEL, M., MYBURGH, C. & VAN NIEKERK, V. 2009. The lived experience by psychiatric nurses of aggression and violence from patients in a Gauteng psychiatric institution. *Curationis*, 32, 4-13.
- BRINK, H., VAN DER WALT, C. & VAN RENSBURG, G. 2006. *Fundamentals of Research Methodology for Health Care Professionals*, Cape Town, Juta & Co.
- BUHIMSCHI, C. S., BUHIMSCHI, I. A., MALINOW, A. M., SAADE, G. R., GARFIELD, R. E. & WEINER, C. P. 2003. The forces of labour. *Fetal and Maternal Medicine Review*, 14, 273-307.
- CARLO, W. A., GOUDAR, S. S., JEHAN, I., CHOMBA, E., TSHEFU, A., GARCES, A., SAILAJANANDAN, P., ALTHABE, F., MCCLURE, E. M. & DERMAN, R. J. 2010. Newborn-care training and perinatal mortality in developing countries. *New England Journal of Medicine*, 362, 614-623.
- DANGAL, G. 2007. Preventing prolonged labor by using partograph. *The Internet Journal of Gynecology and Obstetrics*, 7, 1-9.

- DE LANGE, T. E., BUDDE, M. P., HEARD, A. R., TUCKER, G., KENNARE, R. & DEKKER, G. A. 2008. Avoidable risk factors in perinatal deaths: A perinatal audit in South Australia. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 48, 50-57.
- DE WET, N. 2016. Pregnancy and death: An examination of pregnancy-related deaths among adolescents in South Africa. *S Afr J Child Health*, 10, 151-155.
- DELVAUX, T., AKÉ-TANO, O., GOHOU-KOUASSI, V., BOSSO, P., COLLIN, S. & RONSMANS, C. 2007. *Quality of normal delivery care in Côte d'Ivoire* [Online]. Available: <https://www.ncbi.nlm.nih.gov/pubmed/17982945> [Accessed 12th November 2016].
- DEPARTMENT OF HEALTH 2007. *Guidelines for Maternity Care in South Africa: A Manual for Clinics, Community Health Centres and District Hospitals*, Cape Town, Republic of South Africa, Department of Health.
- DEPARTMENT OF HEALTH 2015a. *Guidelines for Maternity Care in South Africa: A Manual for Clinics, Community Health Centres and District Hospitals*, Pretoria, South Africa, Department of Health.
- DEPARTMENT OF HEALTH. 2015b. *Saving Mothers 2011-2013: Sixth report on the Confidential Enquiries into Maternal Deaths in South Africa* [Online]. Available: <http://www.kznhealth.gov.za/mcwh/Maternal/Saving-Mothers-2011-2013-short-report.pdf> [Accessed 16th October 2014].
- DOLAMO, B. 2009. The impact of health care facilities on the nursing morale (inhuman work environment). *Nursing Update*, 33, 30-33.
- DONABEDIAN, A. 1966. Evaluating the quality of medical care. *Milbank Mem Fund*, 44, 166-206.
- DONABEDIAN, A. 1980. *Exploration in Quality Assessment and Monitoring: The Definition of Quality and approaches to its assessment*, Ann Arbor, Health Administration Press.
- FAHDHY, M. & CHONGSUVIVATWONG, V. 2005. Evaluation of World Health Organization partograph implementation by midwives for maternity home birth in Medan, Indonesia. *Midwifery*, 21, 301-310.
- FARRELL, E.-M. & PATTINSON, B. 2005. *Intrapartum Care in South Africa: Review and Guidelines* [Online]. Available: <http://www.ppip.co.za/wp-content/uploads/Intrapartum-Care.pdf> [Accessed 3 November 2016].
- FATUSI, A., MAKINDE, O., ADEYEMI, A., ORJI, E. & ONWUDIEGWU, U. 2008. Evaluation of health workers' training in use of the partogram. *International Journal of Gynecology & Obstetrics*, 100, 41-44.
- FAWOLE, A., ADEKANLE, D. & HUNYINBO, K. 2010. Utilization of the partograph in primary health care facilities in southwestern Nigeria. *Nigerian Journal of Clinical Practice*, 13, 200-204.

- FAWOLE, A. & FADARE, O. 2007. Audit of use of the partograph at the University College Hospital, Ibadan. *African Journal of Medicine and Medical Sciences*, 36, 273-278.
- FAWOLE, A., HUNYINBO, K. & ADEKANLE, D. 2008. Knowledge and Utilization of the Partograph among obstetric care givers in South West Nigeria. *African Journal of Reproductive Health*, 12, 22-29.
- FLENADY, V., WOJCIESZEK, A. M., MIDDLETON, P., ELLWOOD, D., ERWICH, J. J., COORY, M., KHONG, T. Y., SILVER, R. M., SMITH, G. C. & BOYLE, F. M. 2016. Stillbirths: recall to action in high-income countries. *The Lancet*, 387, 691-702.
- GANS-LARTEY, F., O'BRIEN, B. A., GYEKYE, F. O. & SCHOPFLOCHER, D. 2013. The relationship between the use of the partograph and birth outcomes at Korle-Bu teaching hospital. *Midwifery*, 29, 461-467.
- GROVE, S. K., BURNS, N. & GRAY, J. R. 2013. *The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence*, China, Elsevier Saunders.
- GROVE, S. K., BURNS, N. & GRAY, J. R. 2014. *Understanding Nursing Research: Building an Evidence-Based Practice*, New York, Elsevier Health Sciences.
- HOFMEYR, G. J., HAWS, R. A., BERGSTRÖM, S., LEE, A. C., OKONG, P., DARMSTADT, G. L., MULLANY, L. C., OO, E. K. S. & LAWN, J. E. 2009. Obstetric care in low-resource settings: what, who, and how to overcome challenges to scale up? *International Journal of Gynecology & Obstetrics*, 107, S21-S45.
- HOGAN, M. C., FOREMAN, K. J., NAGHAVI, M., AHN, S. Y., WANG, M., MAKELA, S. M., LOPEZ, A. D., LOZANO, R. & MURRAY, C. J. 2010. Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. *The lancet*, 375, 1609-1623.
- ICM 2005. *Promoting the Health of Mothers and Newborns during Birth and the Postnatal Period*, Brisbane, ICM.
- JAVED, I., BHUTTA, S. & SHOAIB, T. 2007. Role of partogram in preventing prolonged labour. *J Pak Med Assoc*, 57, 408-811.
- KEENAN, G. M., YAKEL, E., TSCHANNEN, D. & MANDEVILLE, M. 2008. *Documentation and the nurse care planning process* [Online]. Available: <https://www.ncbi.nlm.nih.gov/books/NBK2674/?report=reader> [Accessed 19 October 2016].
- KHONJE, M. 2012. *Use and documentation of Partograph in urban hospitals in Lilongwe-Malawi: health workers perspective: A cross sectional study on use and documentation of partograph and factors that prevent optimal utilization of the partograph: perspectives of health workers at Bwaila and Ethel Mutharika Maternity Units in Lilongwe-Malawi*. Master of Philosophy (MPhil) in International Community Health Dissertation, University of Oslo.
- KIM, Y.-M., TAPPIS, H., ZAINULLAH, P., ANSARI, N., EVANS, C., BARTLETT, L., ZAKA, N. & ZECK, W. 2012. Quality of caesarean delivery services and

- documentation in first-line referral facilities in Afghanistan: A chart review. *BMC pregnancy and childbirth*, 12, 1-11.
- LAVENDER, T., ALFIREVIC, Z. & WALKINSHAW, S. 2006. Effect of different partogram action lines on birth outcomes: A randomized controlled trial. *Obstetrics & Gynecology*, 108, 295-302.
- LAVENDER, T., OMONI, G., LEE, K., WAKASIKA, S., WATITI, J. & MATHAI, M. 2011. Students' experiences of using the partograph in Kenyan labour wards. *African Journal of Midwifery & Women's Health*, 5, 117 - 122.
- LAWN, J., SHIBUYA, K. & STEIN, C. 2005. No cry at birth: global estimates of intrapartum stillbirths and intrapartum-related neonatal deaths. *Bulletin of the World Health Organization*, 83, 409-417.
- LEANZA, V., LEANZA, G. & MONTE, S. 2011. A didactic protocol for labour and delivery: the partogram. *Minerva Ginecologica*, 63, 325-332.
- LLOYD, L. G. & DE WITT, T. 2013. Neonatal mortality in South Africa: How are we doing and can we do better? *SAMJ: South African Medical Journal*, 103, 518-519.
- LOUIS, D., SUNDARAM, V., MUKHOPADHYAY, K., DUTTA, S. & KUMAR, P. 2014. Predictors of mortality in neonates with meconium aspiration syndrome. *Indian Pediatrics*, 51, 637-640.
- MAFALO, E. 2003. Shortage of nurses in South Africa an impact to the health service and nursing. *Nursing Update*, 26, 38-41.
- MAPUTLE, M. 2005. *Mothers' Experiences of Labour in a Tertiary Care Hospital*, Auckland Park, Rand Afrikaans University.
- MASIKA, M. A., KATONGOLE, S. P. & GOVULE, P. 2015. Improving partograph documentation and use by health workers of bwera hospital: A process improvement research. *International Journal of Nursing and Health Science*, 2, 37-45.
- MATEUS, A. D., ALLEN-ILE, C. & IWU, C. G. 2014. Skills shortage in South Africa: Interrogating the repertoire of discussions. *Mediterranean Journal of Social Sciences*, 5, 63-73.
- MATHAI, M. 2009. The partograph for the prevention of obstructed labor. *Clinical obstetrics and gynecology*, 52, 256-269.
- MATHEWS, J., RAJARATNAM, A., GEORGE, A. & MATHAI, M. 2007. Comparison of two World Health Organization partographs. *International Journal of Gynecology & Obstetrics*, 96, 147-150.
- MATHIBE-NEKE, J., LEBEKO, F. & MOTUPA, B. 2013. The partograph: A labour management tool or a midwifery record? *International Journal of Nursing and Midwifery*, 5, 145-153.
- MATHIBE-NEKE, J. M. 2009. Facilitation of midwifery students regarding utilisation of a partograph. *Africa Journal of Nursing and Midwifery*, 11, 34-47.

- MIANDA, S. 2010. *Measuring Skilled Attendance in the uThungulu District, KwaZulu-Natal, in 2008*. Master in Public Health Dissertation, University of KwaZulu-Natal.
- MULONDO, S. 2007. *Competence of Midwives Regarding Prevention of Low Apgar score Among Neonates*, Unpublished dissertation, University of Venda.
- MUNDHRA, R. & AGARWAL, M. 2013. Fetal outcome in meconium stained deliveries. *Journal of Clinical And Diagnostic Research (JCDR)*, 7, 2874.
- NAKIMULI, A., CHAZARA, O., BYAMUGISHA, J., ELLIOTT, A. M., KALEEBU, P., MIREMBE, F. & MOFFETT, A. 2014. Pregnancy, parturition and preeclampsia in women of African ancestry. *American Journal Of Obstetrics and Gynecology*, 210, 510-520.
- NAKKAZI, S. & ASIS, A. 2001. *Beyond the call of duty. Midwives work to improve care in Ugandan Hospital* [Online]. Available: www.planetwire.org/files.fcgi/3443_MDugmid-Sp01e.pdf [Accessed 10 November 2016].
- NANNAN, N., DORRINGTON, R., LAUBSCHER, R., ZINYAKATIRA, N., PRINSLOO, M., DARIKWA, T., MATZOPOULOS, R. & BRADSHAW, D. 2012. *Under-5 mortality statistics in South Africa: Shedding light on trend and causes* [Online]. Available: <http://www.mrc.ac.za/bod/MortalityStatisticsSA.pdf>. [Accessed 19 October 2016].
- NCCEMD 2006. *Saving Mothers Third Report on Confidential Enquiries into Maternal Deaths in South Africa. 2002–2004*, Pretoria, Government Printer.
- NCCEMD 2007. *Saving Mothers: Fourth Report on Confidential Enquiries into Maternal Deaths in South Africa, 2005-2007*, Pretoria, South Africa, Department of Health.
- NCCEMD 2012. *Saving Mothers: Fifth Report on Confidential Enquiries into Maternal Deaths in South Africa 2008-2010*, Pretoria, South Africa, Department of Health.
- NCCEMD 2013. *Saving Babies 2010-2011: Eighth Report on Perinatal Care in South Africa*, Pretoria, South Africa, Department of Health.
- NEILSON, J., LAVENDER, T., QUENBY, S. & WRAY, S. 2003. Obstructed labour Reducing maternal death and disability during pregnancy. *British Medical Bulletin*, 67, 191-204.
- NOLTE, A. 2008. *The Partograph and How to Assess Labour*, Pretoria, Juta.
- NYAMTEMA, A., URASSA, D., MASSAWE, S., MASSAWE, A., LINDMARK, G. & VAN ROOSMALEN, J. 2008. Partogram use in the Dar es Salaam perinatal care study. *International Journal of Gynecology & Obstetrics*, 100, 37-40.
- OGWANG, S., KARYABAKABO, Z. & RUTEBEMBERWA, E. 2009. Assessment of partogram use during labour in Rujumbura health Sub district, Rukungiri district, Uganda. *African Health Sciences* [Online], 9. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2890990/> [Accessed 10th November].

- OLADAPO, O., DANIEL, O. & OLATUNJI, A. 2006. Knowledge and use of the partograph among healthcare personnel at the peripheral maternity centres in Nigeria. *Journal of Obstetrics and Gynaecology*, 26, 538-541.
- OPIAH, M. M., OFI, A. B., ESSIEN, E. J. & MONJOK, E. 2012. Knowledge and utilization of the partograph among midwives in the Niger Delta Region of Nigeria. *African journal of reproductive health*, 16, 125-132.
- OZUMBA, B. & NWOGU-IKOJO, E. 2008. Avoidable maternal mortality in Enugu, Nigeria. *Public Health*, 122, 354-360.
- PETTERSSON, K. O., SVENSSON, M.-L. & CHRISTENSSON, K. 2000. Evaluation of an adapted model of the World Health Organization partograph used by Angolan midwives in a peripheral delivery unit. *Midwifery*, 16, 82-88.
- POLIT, D. F. & BECK, C. T. 2004. *Nursing Research: Principles and Methods*, Philadelphia, J.B. Lippincott Williams and Wilkins.
- POLIT, D. F. & BECK, C. T. 2008. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, New York, Lippincott Williams and Wilkins.
- PRATA, N., PASSANO, P., SREENIVAS, A. & GERDTS, C. E. 2010. Maternal mortality in developing countries: challenges in scaling-up priority interventions. *Women's Health*, 6, 311-327.
- ROSS, M. G. 2005. Meconium aspiration syndrome—more than intrapartum meconium. *New England Journal of Medicine*, 353, 946-948.
- SAKALA, M. 2011. *Assessment of the barriers to the utilization of antenatal care services in Kazungula district, Zambia* [Online]. Available: <http://etd.uwc.ac.za/xmlui/handle/11394/3606> [Accessed 20th November 2016].
- SELLERS, P. M. 1995. *Midwifery: A Textbook and Reference Book for Midwives in South Africa*, Cape Town, South Africa, Creda Press.
- SHOKANE, M. A. 2011. *The utilization of the partograph by midwives in Lebowakgomo and Zebediela level 1 hospitals in the Capricorn District of the Limpopo Province, South Africa*. University of Limpopo (Turfloop Campus).
- SINGH, R. 2013. *A description of the utilisation of the partograph by midwives in the public hospitals in the Umgungundlovu district, KwaZulu-Natal*. Durban University of Technology.
- SOUZA, J. P., OLADAPO, O. T., BOHREN, M. A., MUGERWA, K., FAWOLE, B., MOSCOVICI, L., ALVES, D., PERDONA, G., OLIVEIRA-CIABATI, L. & VOGEL, J. P. 2015. The development of a Simplified, Effective, Labour Monitoring-to-Action (SELMA) tool for Better Outcomes in Labour Difficulty (BOLD): study protocol. *Reproductive health*, 12, 1.
- STANTON, C., LAWN, J. E., RAHMAN, H., WILCZYNSKA-KETENDE, K. & HILL, K. 2006. Stillbirth rates: delivering estimates in 190 countries. *The Lancet*, 367, 1487-1494.

- TAYADE, S. & JADHAO, P. 2012. The impact of use of modified WHO partograph on maternal and perinatal outcome. *International Journal of Biomedical and Advance Research*, 3, 256-262.
- TESSIER, C. 2003. The essentials of healthcare documentation patient safety and the quality of care can be improved with accurate, accessible, shareable health information. *Healthcare Informatics*, 20, 87-92.
- THOPOLA, M. 2002. *The Experience of Midwives Delivering Babies of HIV Positive Mothers*, Rand Afrikaans University, Unpublished thesis.
- TIME, V. M. 2016. *Women's Social and Legal Issues in African Current Affairs: Lifting the Barriers*, Lexington Books.
- TROCHIM, W. M. & DONNELLY, J. P. 2007. *Research Methods Knowledge Base*, Mason, OH, Atomic Dog.
- TUCKER, S. 2004. *Fetal Monitoring and Assessment*, United States of America, Elsevier.
- UNICEF 2009. *The State of the World's Children 2009: Unite Forchildren Maternal and Newborn Health*, New York, United Nations Children's Fund (UNICEF).
- UNITED NATIONS. 2015. *The Millennium Development Goals Report 2015* [Online]. Available: [http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20\(July%201\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf) [Accessed 12 November 2016].
- VAN BOGAERT, L. 2004. The multigravid partogram: Should it be customised? *Journal of Obstetrics and Gynaecology*, 24, 881-885.
- WAKGARI, N., AMANO, A., BERTA, M. & TESSEMA, G. A. 2015. Partograph utilization and associated factors among obstetric care providers in North Shoa Zone, Central Ethiopia: a cross sectional study. *African Health Sciences*, 15, 552-559.
- WHO 2005. *Making Every Mother and Child Count*, Geneva, WHO.
- WHO. 2006. *Neonatal and perinatal mortality: Country, regional and global estimates* [Online]. Available: http://apps.who.int/iris/bitstream/10665/43444/1/9241563206_eng.pdf [Accessed 23 November 2016].
- WHO 2010. *Progress Report: Reproductive Health Strategy to Accelerate Progress Towards the Attainment of International Development Goals and Targets*, Geneva, WHO.
- WHO. 2015. *Maternal mortality* [Online]. Available: <http://www.who.int/mediacentre/factsheets/fs348/en/> [Accessed 15th November 2015].
- WHO & UNICEF 2015. *Trends in maternal mortality: 1990-2015: Estimates from WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division*, Geneva, World Health Organization.

- WILMOTH, J., MATHERS, C., SAY, L. & MILLS, S. 2010. Maternal deaths drop by one-third from 1990 to 2008: a United Nations analysis. *Bulletin of the World Health Organization*, 88, 718-718a.
- WINDRIM, R., SEAWARD, P. G., HODNETT, E., AKOURY, H., KINGDOM, J., SALENIEKS, M. E., FALLAH, S. & RYAN, G. 2007. A randomized controlled trial of a bedside partogram in the active management of primiparous labour. *Journal of Obstetrics and Gynaecology Canada*, 29, 27-34.
- YISMA, E., DESSALEGN, B., ASTATKIE, A. & FESSEHA, N. 2013a. Completion of the modified World Health Organization (WHO) partograph during labour in public health institutions of Addis Ababa, Ethiopia. *Reproductive health* [Online], 10. Available: <https://reproductive-health-journal.biomedcentral.com/articles/10.1186/1742-4755-10-23> [Accessed 20th November].
- YISMA, E., DESSALEGN, B., ASTATKIE, A. & FESSEHA, N. 2013b. Knowledge and utilization of partograph among obstetric care givers in public health institutions of Addis Ababa, Ethiopia. *BMC pregnancy and childbirth*, 13, 1-9.

Annexures

Annexure 1: Information Sheet

Date : 16 April 2010
Name of Student : Mrs. L. Msomi
Student No : 207519164
Contact No : 082 475 4373
Name of Supervisor : Dr. Sisana Majeke
Contact No : 031 260 3317
Name of Department : Nursing
Name of Institution : University of KwaZulu-Natal

Dear Respondent

I am doing a research as part of the requirements for the Master's Degree.

Title of the Research: Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni District.

Purpose of the Study: The purpose of this study is to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in the labour ward at a regional hospital in the eThekweni District.

Description of the Procedure: Your participation is requested as you are representative of the target population under study. As part of the research process, you will be required to fill out a questionnaire. It will take you about 15-20 minutes to complete the questionnaire.

Ethical considerations

Please be advised that your identity and information will be treated with utmost confidentiality. Please feel free to ask any questions you may have so that you are clear about what is expected of you. Please note that:

- You are free not to participate.
- You are free to withdraw at any stage without any compulsion.
- Your name will not be used, nor will you be identified with any comment made when the data is published.
- There will be no risk attached to your participation.

Advantages to you as a respondent: The findings of the study will be made available to you. You are requested to participate in this project due to your experience and expertise, therefore kindly provide the most honest answers to the questions provided. Your input is needed solely for research purposes. The research findings shall be made available on request.

Thank you

Researcher: Mrs. L. Msomi

Annexure 2: Consent to Participate in Research Project

CONSENT TO PARTICIPATE IN RESEARCH PROJECT

TITLE: Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni District.

I..... (Your full name) hereby confirm that I understand the contents of this document and the nature of the research project and I consent to participating in the research project.

I understand that PARTICIPATION IS VOLUNTARY and I am at liberty to withdraw from the project at any time, should I so desire.

.....
SIGNATURE OF PARTICIPANT DATE

SIGNATURE OF WITNESS DATE

Annexure 3: Questionnaire

The research topic: "Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in eThekweni District".

Dear Respondent

You are kindly requested to participate in this project due to your experience and expertise. Please provide the most honest answers to the questions in the spaces provided. Your input is needed solely for research purposes. The research findings shall be made available on request.

Your input will be of great value and is highly esteemed.

Yours faithfully

.....
Lungile Audrey Msomi
Researcher

SECTION A : DEMOGRAPHY

1. Gender

Male	
Female	

2. Age

20-30	
30-40	
40-50	
50-60	
60+	

3. Race

African	
Indian	
Coloured	
Whites	

4. Marital status

Single	
Married	
Divorced	
Widowed	
Separated	

5. Higher qualification

Obstetrician	
Midwives	

6. Years of experience in a labour ward

0 – 6yrs	
7 – 13yrs	
14 – 20yrs	
21—26yrs	
26yrs and above	

SECTION B : ASSESSMENT ON ADMISSION DURING LABOUR

1. Midwives and obstetricians have to review the Antenatal Clinic records of a woman in labour and indicate maternal and foetal risk factors.	Yes	No
2. The date and time of admission of all woman in labour are often recorded.		
3. A decision on the diagnosis and management of a woman in labour is always outlined at the end of the initial assessment.		
4. Findings on admission are always checked and recorded by a midwife or obstetrician.		

SECTION C: TRAINING ON PARTOGRAPH USE

1. Were you trained in the use of the partograph?

Yes	
No	

2. Place of training in the use of the partograph

College	
Medical School	
School of nursing (University)	

Further questions on partograph use during training of respondents	SA	A	SD	D
3. Is the partograph used systematically?	1	2	3	4
4. Utilization of the partograph is of great significance in the labour ward.	1	2	3	4
5. The partograph is a tool for decision-making in the labour ward.	1	2	3	4

6. The partograph is a tool used to monitor the progress of labour.	1	2	3	4
7. The partograph is a tool to detect complications during labour.	1	2	3	4
8. The partograph improves the management during labour.	1	2	3	4
9. The partograph is difficult to use in the labour ward.	1	2	3	4

Key: SA = Strongly Agree
A = Agree
SD = Strongly disagree
D = Disagree

SECTION D: FOETALCONDITION DURING LABOUR

1. Indicate by an X on the relevant answer

Monitoring of foetal condition	1/2hourly	hourly	two hourly	four hourly
1. In the active phase of labour, foetal heart rate is monitored.	1	2	3	4
2. The state of the membranes and liquor are monitored in the active phase of labour.	1	2	3	4
3. The degree of caput and moulding are monitored in the active phase of labour.	1	2	3	4

SECTION E: PROGRESS OF LABOUR DATA

Progress of labour

Monitoring of the progress of labour	Strongly Agree	Agree	Disagree	Strongly Disagree
Cervical dilatation is monitored two-hourly in the active phase of labour.	1	2	3	4
Cervical effacement is monitored two-hourly in the active phase of labour.	1	2	3	4
Descent of the foetal head is monitored two-hourly in the active phase of labour.	1	2	3	4
The uterine contractions' intensity vary from mild, moderate to strong and are monitored half-hourly in the active phase of labour.	1	2	3	4

2. Treatment administered during labour

Type of treatment administered during labour	Strongly Agree	Agree	Disagree	Strongly Disagree
IV Fluids are administered only if necessary.	1	2	3	4
Oxytocic drugs are used for augmentation of labour in cases of poor progress.	1	2	3	4
Analgesics, e.g. Pathidine or Entonox inhalation are administered for pain relief.	1	2	3	4
Antibiotics may be administered in case of prolonged rupture of the membranes.	1	2	3	4

3. Maternal condition during labour

Monitoring of maternal condition during labour	Strongly Agree	Agree	Disagree	Strongly Disagree
Blood pressure and pulse are observed half-hourly in the active phase of labour.	1	2	3	4
Temperature is observed four-hourly throughout labour.	1	2	3	4
Urinalysis and urinary output are checked two-hourly in the active phase of labour.	1	2	3	4

SECTION F: FACTORS INFLUENCING THE USE OF A PARTOGRAPH BY MIDWIVES AND OBSTETRICIANS TO MONITOR PROGRESS OF LABOUR IN THE LABOUR WARD.

1. What are the factors that facilitate the use of a partograph to monitor the progress of labour in the labour ward?

1.1 List any factor:

.....
.....
.....

1. What are the factors that hinder the use of a partograph in monitoring the progress of labour in the labour ward?

1.1 List any factor:

.....
.....
.....
.....
.....

Annexure 4: Checklist for partograms for retrospective part of the study

According to Tessier (2003:89) there were eight essential principles of health care documentation, namely, unique identification accuracy, completeness, timeliness, confidentiality, accountability, legibility and resources.

Tessier (2003:89) principle of completeness was used as criteria to be fulfilled for each variable to be considered as fully recorded. In this study completeness incorporated other Tessier's principles of ensuring that all the information in the old partograms was written accurately, legible or clearly, timeously meaning that date and time was written. The principle of timeous in terms of proving that assessment and interventions were done in time could not be considered since this part of the study was retrospective in nature. In contract the information documented in the partograms that was classified as not recorded was found to be incomplete. As the information documented in those partograms was found to be either illegible, inaccurate and or date and time not written on audited partograms thus not meeting Tessier's principle of completeness as used in this study.

SECTION A: IDENTIFICATION OF WOMAN IN LABOUR

1. Data relating to identification of woman in labour (Indicate by a tick or X where applicable)

	Recorded,	Not recorded
Woman in labour's name and surname	➤ Completely	Incomplete
Woman in labour's registration number	➤ Completely	Incomplete
Woman in labour's age	➤ Completely	Incomplete
Gravida	➤ Completely	Incomplete
Parity	➤ Completely	

Data relating to state of the membranes on admission

	Recorded	Not recorded
State of the membranes on admission	➤ Completely	Incomplete
Date of rupture of the membranes	➤ Completely	Incomplete
Time of rupture of the membranes	➤ Completely	Incomplete

3. Data relating to foetal condition.

	Recorded	Not recorded
Rate of foetal heart during labour	➤ Completely	Incomplete
State of liquor during labour	➤ Completely	Incomplete
Caput during labour and at delivery	➤ Completely	Incomplete
Moulding during labour and at delivery	➤ Completely	Incomplete

SECTION B: PROGRESS OF LABOUR

1. Data relating to progress of labour

	Recorded		Not recorded
Cervical dilatation during progress of labour	➤ Completely		Incomplete
Effacement of the cervix during labour	➤ Completely		Incomplete
Level of foetal head during labour	➤ Completely		Incomplete
Monitoring of uterine contractions during labour	➤ Completely		Incomplete

2. Data relating to maternal condition

	Recorded	Not recorded
Temperature	➤ Completely	Incomplete
Pulse	➤ Completely	Incomplete
Blood pressure	➤ Completely	Incomplete
Urine	➤ Completely	Incomplete

Data relating to medications administered during labour

	Recorded	Not recorded
Type of medication	➤ Completely	Incomplete
Dosage of medication	➤ Completely	Incomplete
Time of administration	➤ Completely	Incomplete
Mode of administration	➤ Completely	Incomplete

4. Data relating to delivery of the neonate

	Recorded	Not recorded
Time of delivery	➤ Completely	Incomplete
Date of delivery	➤ Completely	Incomplete
Mode of delivery	➤ Completely	Incomplete
Name of midwife/doctor delivering	➤ Completely	Incomplete
Assisted delivery	➤ Completely	Incomplete
1 st or 2 nd degree tear	➤ Completely	Incomplete
Episiotomy done	➤ Completely	Incomplete
Complication if existed	➤ Completely	Incomplete

5. Data relating to placenta

	Recorded	Not recorded
Date of delivery of placenta	➤ Completely	Incomplete
Time of delivery of placenta	➤ Completely	Incomplete
State of placenta after delivery	➤ Completely	Incomplete

6. Data relating to condition of neonate at birth

	➤ Recorded	Not recorded
Born alive	➤ Completely	Incomplete
Apgar score at 1 min	➤ Completely	Incomplete
Apgar score at 5 min	➤ Completely	Incomplete
Birth weight	➤ Completely	Incomplete
Gender	➤ Completely	Incomplete
Quick examination of newborn done	➤ Completely	Incomplete

SECTION B: Format of the obstetric/ gyne: ANC RECORDS



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

FACILITY

OBSTETRICS :GYNAE:ANC RECORDS

2.2.CLINICAL MANAGEMENT FOR IMPROVED HEALTH OUTCOMES

INSTRUCTION: AUDIT 3 RANDOM RECORDS OF PATIENTS DISCHARGED IN THE LAST 24 HOURS FROM THE MATERNITY UNIT. WHERE FEW DISCHARGES HAVE TAKEN PLACE, LOOK AT THE ANTENATAL CARD AND /OR THE OBSTETRIC BED LAT OF THE PATIENT. MARK Y FOR YES IF EACH FACTOR PRESENTS IN RECORDS AND N FOR NO IF IT IS NOT APPLICABLE. WRITE N/A AGAINST THAT ASPECT FOR PARTICULAR PATIENT.

NO:	QUESTION/ASPECT	1	2	3	4	5	TOTAL
	1.HISTORY						
1	AGE,PARITY,GRAVIDA						
2	HISTORY PREVIOUS PREGNANCY						
3	PREVIOUS ILLNESS						
4	HISTORY PRESENT PREGNANCY						
5	LMP,EDD						
6	POGP						
	2.EXAMINATION						
7	MATERNAL HEIGHT,WEIGHT						
8	BP AT EACH VISIT						
9	HEART						
10	POGP,SFH						
11	POGP-POGD,IUGR						
12	FOETAL,PRESENTATION FROM 36WEEKS						
13	FOETAL HEART AND MOVEMENT						
14	URINALYSIS						
15	HB,RH						
16	SYPHILLIS TEST RESULT RECORDED						
17	HIV TESTING						
18	TETANUS TOXOID GIVEN						
	3.INTERPRETATION AND MANAGEMENT						
19	IDENTIFICATION AND RECORDING RISK FACTORS						
20	ACTION PLANS AND INTERVENTIONS						
21	DISCUSSION OF LABOUR WITH MOTHER						
22	TRANSPORT ARRANGEMENTS						
23	FAMILY PLANNING						
24	FIRST AND 36 WEEKS VISIT SIGNED						
25	DATE OF NEXT VISIT						
	ACTUAL SCORE (SUM OF POSITIVE RESPONSES)						
	MAXIMUM POSSIBLE SCORE (SUM OF ALL QUESTIONS MINUS THE TOTAL APPLICABLE RESPONSES)						

SECTION C: Format of the Obstetric/ Gyne: LABOUR RECORDS



Department:
Health
PROVINCE OF KWAZULU-NATAL

FACILITY

CLINICAL AUDITS: LABOUR RECORDS

2.2 CLINICAL MANAGEMENT FOR IMPROVED HEALTH OUTCOMES.

INSTRUCTION: TAKE THE COMPLETED PARTOGRAMS AND LABOUR RECORDS FOR 3 DIFFERENT PATIENTS WHO HAVE GIVEN BIRTH AND CHECK THAT EACH OF THE ASPECTS LISTED ARE RECORDED. MARK Y FOR YES IF EACH FACTOR PRESENT IN RECORD, AND N IF IT IS NOT. IF NOT APPLICABLE WRITE N/A AGAINST THAT ASPECT FOR PARTICULAR PATIENT.

NO	QUESTION/ASPECT	1	2	3	TOTALS
	ADMISSION ASSESSMENT FORM				
1	All items on admission complete.				
2	Maternal and foetal risks listed				
3	Decision :assessment ,diagnosis and management.				
	LABOUR GRAPH				
5	Risk factors recorded				
6	Foetal heart recorded risk 1/2 hourly.				
7	State of liquor recorded 2 hourly				
8	Moulding recorded 2 hourly.				
9	Contractions recorded 1/2 hourly.				
10	Dilatation pl :L:4hr, A:2hr				
11	Dilatation plotted on alert and action line.				
12	Level of head recorded 2hrly				
13	Maternal BP and Pulse hourly.				
14	Temp 4hourly				
15	Record of drugs and IV fluids				
	MANAGEMENT OF LABOUR FORM				
16	Recorded after PV and 2hr				
17	Summary of foetal condition.				
18	Summary of labour progress.				
19	Summary of ,aternal condition.				
20	Decision on action recorded.				
21	Time of next review				
22	Assessment checked 2hr ADM				
	ASSESSMENT OF NEWBORN				
23	Form completed.				
24	Final summary of labour				
25	Active management of third stage recorded.				
	Actual score (sum of positive responses)				
	Maximum possible score (sum of all questions minus the not applicable responses)				

Annexure 5: Request for permission to conduct research study



**Faculty of Health Science
School of Nursing
Howard College, 4000
08 June 2010**

The Chief Executive Officer
Prince Mshiyeni Memorial Hospital
Private Bag X07
Mobeni
4060

Dear Sir or Madam,

A REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

I, Lungile Audrey Msomi, employed at the abovementioned institution, wish to request permission to conduct a research study at this institution.

I am a student registered for: Course-work Master's Degree in Maternal and Child Health at the University of KwaZulu Natal. I intend doing a research project in fulfillment of the academic requirement as indicated above.

The research topic is: "Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni District.

The purpose of the study is to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in the labour ward.

Copies of the research proposal, the letter requesting permission to conduct research from the KwaZulu-Natal Department of Health, ethical approval from the University of KwaZulu-Natal research ethics' committee and the information document to respondents will be enclosed for your consideration.

Your kind consideration of my request will be highly appreciated.

Yours faithfully

L. A. Msomi. Cell phone no.: 0824754373

CC: The Ethics Committee University of Kwa-Zulu Natal.

Research Supervisor: Mrs S. Majeke.

University of Kwa-Zulu Natal Howard College Campus, School of Nursing

Annexure 6: Request for permission to conduct a research study



Faculty of Health Sciences
School of Nursing
Howard College
08 June 2010

**The Head of Department
KwaZulu - Natal Department of Health
Private Bag 95051
4000**

Dear Sir or Madam,

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

I, Lungile Audrey Msomi, employed at the abovementioned institution, wish to request permission to conduct a research study at this institution.

I am a student registered for: Course-work Master's Degree in Maternal and Child Health at the University of KwaZulu Natal. I intend doing a research project in fulfillment of the academic requirement as indicated above.

The research topic is: "Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni District.

The purpose of the study is to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in the labour ward.

Copies of the research proposal, the letter requesting permission to conduct research from the KwaZulu-Natal Department of Health, ethical approval from the University of KwaZulu-Natal research ethics' committee and the information document to respondents will be enclosed for your consideration.

Your kind consideration of my request will be highly appreciated.

Yours faithfully

L. A. Msomi. Cell phone no.: 0824754373

CC: The Ethics Committee University of Kwa-Zulu Natal.

Research Supervisor: Mrs S. Majeke

University of Kwa-Zulu Natal Howard College Campus, School of Nursing.

Annexure 7: Request for permission to conduct a research study

**Faculty of
Health Science
School of Nursing
Howard College, 4000**



08 June 2010

The Chief Executive Officer
Prince Mshiyeni Memorial Hospital
Private Bag X07
Mobeni
4060

Dear Sir or Madam,

A REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

I, Lungile Audrey Msomi, employed at the abovementioned institution, wish to request permission to conduct a research study at this institution.

I am a student registered for: Course-work Master's Degree in Maternal and Child Health at the University of KwaZulu Natal. I intend doing a research project in fulfillment of the academic requirement as indicated above.

The research topic is: "Exploring knowledge, attitudes and utilization of the partograph by midwives and obstetricians in a regional hospital in the eThekweni District.

The purpose of the study is to explore and describe the knowledge, attitudes and utilization of the partograph by midwives and obstetricians in the labour ward.

Copies of the research proposal, the letter requesting permission to conduct research from the KwaZulu-Natal Department of Health, ethical approval from the University of KwaZulu-Natal research ethics' committee and the information document to respondents will be enclosed for your consideration.

Your kind consideration of my request will be highly appreciated.

Yours faithfully

L. A. Msomi. Cell phone no.: 0824754373

CC: The Ethics Committee University of Kwa-Zulu Natal.

Research Supervisor: Mrs S. Majeke.

University of Kwa-Zulu Natal Howard College Campus, School of Nursing.

Annexure 8: Letter of approval from DoH



HEALTH
KwaZulu-Natal

Health Research & Knowledge Management sub-component
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg
3200
Tel.: 033 – 3952805
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM 202-10
Enquiries : Mr X Xaba
Telephone : 033 – 3952805

Dear Ms LA Msomi

Subject: Request for approval of a Research Project

1. The research proposal titled 'Exploring knowledge, attitude and utilization of partograph by midwives and obstetricians in a regional hospital of eThekweni District' was received by the KwaZulu-Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken at Prince Mshiyeni Memorial Hospital.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X Xaba on 033-3952805.

Yours Sincerely


Interim Chairperson

Date: 17/03/2011

Provincial Health Research Committee
KwaZulu-Natal Department of Health

Annexure 9: Letter of approval from PMMH



Department:
Health
PROVINCE OF KWAZULU-NATAL

PRINCE MSHIYENI MEMORIAL HOSPITAL
SENIOR MEDICAL MANAGER OFFICE
DR. MYINT AUNG
Private Bag X07; Moberi 4060
Mangosuthu Highway
Tel.:031-907 8317/ 8304
Fax.:031- 906 1044
Email.:myint.aung@kznhealth.gov.za
www.kznhealth.gov.za

Enquiry: Dr M AUNG
Ref No: 01/RESH/2011
Date: 30/03/2011

TO: MS. LUNGILE AUDREY MSOMI

RE: LETTER OF SUPPORT TO CONDUCT RESEARCH AT PMMH

Dear Madam;

I have pleasure to inform you that PMMH has considered your application to conduct research on "Exploring knowledge, attitudes and utilization of partograph by midwives and obstetricians in a regional hospital of eThekweni district." in our institution.


Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. The institution will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the institution.

Should the following requirements be fulfilled, a Permission/ Approval letter will follow.

- Full research protocol, including questionnaires and consent forms if applicable.
- Ethical approval from a recognized Ethic committee in South Africa

Thank you.


Dr. M Aung
Senior Manager: Medical & Consultant in Family Medicine
MBBS(Rgn), PGDip in HIV (Natal), DO(SA)
M.Med.Fam.Med (Natal)

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

Annexure 10: UKZN Ethical Clearance



18 June 2014

Mrs AL Msoeni (2075190184)
School of Nursing & Public Health
Howard College Campus

Protocol reference number: HSS/0867/010M

Project title: Exploring knowledge, attitudes and utilization of partograph by midwives obstetricians in a regional hospital Ethekwini District

Recertification Approval

This letter confirms that your application dated June 2014 for Recertification has been approved. This approval is based strictly on the research protocol submitted in 2010.

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through the amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

The ethical clearance certificate is only valid for a period of 1 year from the date of issue. Thereafter Recertification must be applied for on an annual basis.

Yours faithfully



Dr Shantika Singh (Chair)

Cc Supervisor: Dr Sisira Majumdar
Cc Academic Leader Research: Professor M Mars
Cc School Administrator: Ms Caroline Dhanraj

Humanities & Social Sciences Research Ethics Committee

Dr Shantika Singh (Chair)

Westville Campus, Gordon Mbeki Building

Postal Address: Private Bag X9-001 Durban 4000

Telephone: +27 (0) 31 262 2687/93504557 Facsimile: +27 (0) 31 262 4626 Email: archan@ukzn.ac.za / shantika@ukzn.ac.za / mahumbe@ukzn.ac.za

Website: www.ukzn.ac.za



110 YEARS OF ACADEMIC EXCELLENCE

Forcing Partners:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville