Retrospective Study of Quality Care During Labour in Maternity Wards in Khomas Region, Namibia

Jonia Nghifikwa,[9] Linda Ndeshipandula Lukolo[10] & Tuwilika Endjala [11]
University of Namibia

Abstract

Quality of midwifery care can be defined as care delivered by midwives which is safe, effective, efficient, accessible, acceptable, patient-centred, equitable, and results in a positive pregnancy outcome. In 2013, the Government of the Republic of Namibia through the Ministry of Health and Social Services implemented the Presidential Commission of Inquiry into Maternal and Neonatal Mortality. The Commission reports that there are several factors impeding maternal and newborn health in the country. Furthermore, the commission noted that poor quality of midwifery care during labour was one of those factors. This research assessed the quality of midwifery care by reviewing maternity records and analysing the standard of midwifery

[9] Ms Jonia Nghifikwa, Lecturer in the department of Midwifery, School of Nursing and Public Health, University of Namibia, Namibia. Email: jnghifikwa@unam.na

[10] Linda Ndeshipandula Lukolo is a senior lecturer at the Faculty of Health Sciences, School of Medicine at the University of Namibia. She is a holder of a PhD in Nursing Science with a focus on Community Health - educational program to empower parents to part take in sexuality education of their children, from University of Namibia; Masters Curation (MCUR): Community Health; Stellenbosch University, (US), Cape Town South Africa. Focus on Adolescent Sexual health; Bachelor of Nursing Education: Honors Degree, University of Namibia; Bachelor of Nursing Science: Nursing Education and Nursing Management, University of Namibia; and Diploma in Comprehensive Nursing Science: (General nursing science, Psychiatric, Community Health and midwifery) University of Namibia; Diploma in Health System Management (Galilee International Management Institute, (Israel). She has a wide high institution teaching experience for over 25 years. Her research interests are sexual and reproductive health, maternal and child welfare, and HIV and AIDS and Community based education. She has published 27 peer reviewed papers and four book chapters as well as supervised many undergraduate and postgraduate research projects. E-mail: lnlukolo@unam.na

[11] Tuwilika Endjala, is a senior lecturer at the Faculty of health, School of nursing, department of Community and mental Health department, University of Namibia. She is a holder of PhD in Public Health, from the University of Namibia. Email address: tendjala@unam.na

Correspondence concerning this article should be addressed to Linda Ndeshipandula Lukolo, Faculty of Health Sciences, School of Medicine at the University of Namibia, Windhoek. Email: lnlukolo@unam.na

care rendered during the first stage of labour of the women who gave birth at maternity ward at intermediate and referral hospitals. The present study is retrospective with a descriptive quantitative design conducted on 653 maternity records at these hospitals. Early opening of partographs is recommended as it could lead to early identification of problems and intervention plans. This study's findings show that 402 (61.6%) partographs were mostly opened with women in the active phase of labour. A few partographs, 33 (5.1%), were opened in the latent phase of labour. However, of the partographs that were opened, the study's results revealed that not all were managed according to the WHO guidelines. Poor documentation of midwifery interventions and care was noted, suggesting poor midwifery care. Of most deliveries, 499 (76.4%) were normal vaginal deliveries, followed by 151 (23.1%) who had caesarean section deliveries. The rest had assisted deliveries with one breech delivery. Based on the findings of this study, it can be concluded that midwifery care rendered during labour at the studied hospitals was substandard.

Keywords: *quality midwifery care, partograph, labour, maternal deaths, neonatal deaths, skilled birth attendance.*

Maternal and neonatal mortality and morbidity have remained a public health challenge in developing countries, particularly Namibia, despite universal efforts to improve access and use of maternal health care services. Many maternal and newborn deaths could be prevented by ensuring access to quality

maternal health services such as antenatal and postnatal care, skilled attendance during childbirth, and emergency obstetric care. Quality of midwifery care can be defined as the care delivered by midwives which is safe, effective, efficient, accessible, acceptable, patient-centred, equitable and which results in a positive experience for women (World Health Organisation [WHO], 2014a). According to the International Confederation of Midwives [ICM] (2018), all midwives need to be equipped with the knowledge and skills to render quality midwifery care during labour to reduce maternal and newborn deaths. In addition, maternal, and newborn deaths could be prevented if all pregnant women had access to Skilled Birth Attendants (SBAs), including doctors, midwives, and other healthcare providers who are educated in dealing with normal and abnormal pregnancies and childbirth (ICM, 2018). There is strong evidence that when well-trained healthcare providers attend births, women and neonates have a high chance of survival (Kim & Saada, 2013; Tura et al., 2013).

The World Health Organization (WHO) recommends using the partograph to follow labour and birth progress, improve health care and reduce maternal death, fetal and neonatal morbidity, and death. However, poor utilisation of the partograph was found in public health institutions, which reflects inadequate monitoring of mothers in labour or poor pregnancy outcomes (WHO, 2014b). According to Lavender et al. (2018), the partograph is a graphical presentation of labour progress and fetal and maternal condition during labour. In addition, it is the best tool to help detect whether labour is progressing normally or abnormally and give warning signals of signs of fetal distress or if a woman's vital signs deviate from the normal range. Furthermore, utilizing the partograph

during labour enable midwives to know instantly if something is going wrong and whether the mother should be referred to the nearest hospital for further evaluation and intervention (Lavender et al., 2018).

Literature review

Annually, an estimated 139 million births occur, and an estimated 289 000 women die globally during pregnancy, childbirth or after birth (Yisma et al., 2013). Poor quality of midwifery care has been identified as a significant contributory factor because an estimated 2.6 million pregnant women have stillbirths, and 2.9 million infants die in the first month of life (Renfrew et al., 2014). According to Kassar (2014), the persistent challenge to ensure consistent quality midwifery care due to low-quality health systems has led to a high mortality rate in sub-Saharan Africa. In their study, Yisma et al. (2013) identified barriers to quality midwifery care: Delay in the decision to seek care, delay in arrival at health facilities and delay in providing adequate care. Despite this, Baral et al. (2010) report that transportation and distance to health facilities, staff attitude towards service users, inadequate number of SBAs, service delivery systems, poor physical infrastructure in health facilities, women's age, parity and education, perceptions of safe pregnancy, place of residence (rural/ urban), gender inequality, cultural and religious beliefs, decision making power, socioeconomic status of women, geographical barriers including poor communication and road links are factors found to affect the uptake of quality midwifery care in Nepal. All the above challenges could lead to poor management of the partograph, which has the potential to identify obstetric complications by graphically presenting the critical events of labour progression, including the condition of both the woman and the foetus (Mukisa

et al., 2019). Mukisa et al state that this could reduce complications from prolonged labour for the mother: female genital fistula, postpartum haemorrhage, sepsis, uterine rupture, and its sequelae; and for the infant ; death, anoxia, and infections.

According to the Ministry of Health and Social Services [MoHSS] (2016), maternal mortality rate in Namibia accelerated between 1992 and 2007, when it peaked at 508 deaths per 100 000 live births. However, the rate gradually declined to 385 deaths per 100 000 live births by 2020. Presently, the neonatal mortality rate is reported at 20 deaths per 1000 live births; a decline from 24 per 1000 live births. Consequently, the country targeted 200 maternal deaths per 100 000 live births and a neonatal mortality rate from 20/1000 to 10/1000 by 2022 (MoHSS, 2016). Poor management of partograph could be the leading cause of maternal AND neonatal mortality. In most African countries, including Namibia, there is need for more midwives to attend to the rising number of women who need midwifery care. For example, in Namibia, a midwife-women ratio of 1:7 was found in the hospitals' understudy (MoHSS, 2018). These findings are below the WHO benchmark of a midwife-patient ratio of 1:3 (MoHSS, 2018). This has led to inadequate number of midwives in health facilities to monitor women during labour, poor utilization of partographs, and poor documentation.

MoHSS, through its Quality Assurance (QA) subdivision, initiated Maternal and Neonatal Improved Care (MaNICare) to improve quality care for maternal and neonatal health in the Khomas, Kunene, Kavango East and West,

Ohangwena, Omusati, Oshana, Oshikoto, Otjozondjupa and Zambezi regions (MoHSS, 2018). The regions mentioned above were selected because they recorded high maternal and neonatal mortality rates and morbidity (MoHSS, 2018). Furthermore, MoHSS states that the above collaboration focuses on five indicators: Postpartum haemorrhage (PPH), severe pre-eclampsia/eclampsia, partograph, resuscitation and perinatal death review management. This initiative was planned to run from July 2018 to January 2021. Nevertheless, this program is still running (MoHSS, 2018). Although most sub-Saharan African countries, including Namibia, implemented previous MDG 4 (reduce child mortality) and 5 (improve maternal health), they still need to yield the intended outcome. In 2015, the MDGs were superseded by the Sustainable Development Goals (SDGs) (Buse & Hawkes, 2015).

Part of this study's findings yielded from the management of partograph because the study was conducted before adopting the Labour Care Guide (LCG), specifically in the study settings. According to Pingray et al. (2021), the partograph was the world's most used labour monitoring tool. However, it has been used incorrectly or inconsistently in many settings. Based on the incorrect and inconsistent partograph use, in 2018 the WHO expert group reviewed and revised the design of the partograph considering emerging evidence and they developed the first version of the Labour Care Guide (LCG) (Pingray et al., 2021).

According to Mathibe-Neke et al. (2013), the World Health Organization launched the partograph in 1987 as a safe motherhood initiative. The observations that are routinely recorded on the partograph are the progress of labour which includes four hourly monitoring of cervical dilatation, the descent

of the fetal head, and hourly uterine contractions; the fetal wellbeing, which includes hourly/four hourly fetal heart rate monitoring; the maternal wellbeing which are pulse and blood pressure that are monitored and recorded hourly while temperature and urinalysis (volume, protein, ketones) are being monitored and recorded four hourly. The partograph serves as a warning system of arising complications during labour as it assists with intervention decisions and the ongoing evaluation of the effects of implemented interventions (Mathibe-Neke et al., 2013). Furthermore, the partograph has been widely accepted as one of the measures that assist in reducing maternal and neonatal mortality resulting from obstructed labour.

Objectives of the Study

The present study aimed to assess the quality of midwifery care at intermediate and referral hospitals in Windhoek maternity departments. The goal was to determine and analyse the quality of midwifery care rendered during the first stage of labour.

Design and Method

This study was a retrospective study with a descriptive quantitative design. The study was conducted at intermediate and referral hospitals maternity departments in Windhoek, Namibia. The study population consisted of maternity records of all women who gave birth at intermediate and referral hospitals in Windhoek from 1st January to 31st March 2018. In addition, n= N/ (1+Nxa^2) n= sample size N= total population, a= confidence limit 5% or 0.05% formula was used to determine the sample size. Systematic sampling was used to determine the sample. All maternity records from 1st January to 31st

March 2018 were gathered for sampling purposes. Every sixth maternity record from the intermediate hospital and every fourth file from the referral hospital was selected. The sample consisted of 653 maternity records at the hospitals mentioned above. A checklist was developed by the researcher and used to collect data from both hospitals. The checklist includes demographic data (age, gravida, para, booked, unbooked and mode of deliveries) and midwifery care during the first stage of labour. Two research assistants were trained before the data collection process commenced. Together with the two research assistants, the researchers viewed and assessed the medical notes from the maternity records. Data was collected from the archive section, where maternity records are kept securely. No maternity records were removed from the maternity department to maintain confidentiality. The data collection occurred over ten working days.

After double data entry, data cleaning was performed to check for outliers. Finally, data analysis was conducted using the statistical package for social science (SPSS, version 25). Distributions of variables were displayed using frequencies, percentages, tables, graphs, and pie charts.

Measures to ensure validity

The researcher consulted an expert midwife in the midwifery care unit to validate the representation of the entire domain of the content of the phenomenon related to the quality of midwifery care in the data collection instrument. The research tool tested 10% of the population before the actual study, and this were excluded from the study. During the pilot study, the researcher checked for any insufficiency in the study's design. A part of the

tool's section on first stage of labour needed to be clearly stated and changes were made to clarify the part. The instrument's reliability was ensured through pilot testing, training two data collecting assistants on how to use the tool and ensuring that all items in the data collection instrument were understood by the trainees, who were both registered nurses/midwives.

Ethical Considerations

The researchers obtained ethical clearance from the University of Namibia Human Research Ethics Committee (HREC) and the MoHSS in Namibia. After that, permission to undertake the study in the maternity departments was sought from medical superintendents at both hospitals. Right to confidentiality was ensured and results are not linked to the participants. Anonymity was ensured as no names appeared on the checklist, only codes were used to identify the respondents.

Results

Demographic information

A total of 655 maternity files were reviewed, of which 314 files were from Katutura Intermediate and 341 from Windhoek Central Hospitals' maternity departments. The age range of all the participants in the study was divided as follows: 13-19, 20-35 and 36 years and above. Most births occurred among the age distribution group of 20-35 (78.6 %), while 13-19 and 36 and above had the same score (10.7 %), respectively. See table 1 below for demographic characteristics.

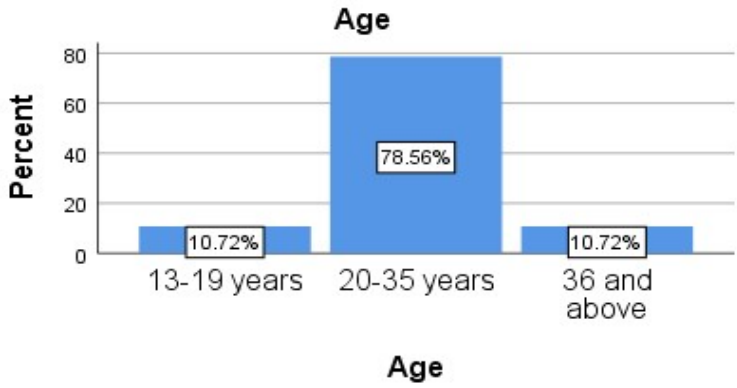
Table 1

Demographic Characteristics of Respondents

		Frequency	%
Marital Status	Single	557	85.3
	Married	95	14.5
	Divorced	1	0.2
	Total	653	100
Booked for Antenatal Care	Booked	620	94.9
	Unbooked	33	5.1
	Total	653	100
Obstetric History	Primipara	197	30.1
	Multipara	391	59.9
	Grand Multipara	65	10.0
	Total	653	100

Figure 1

Age Groups

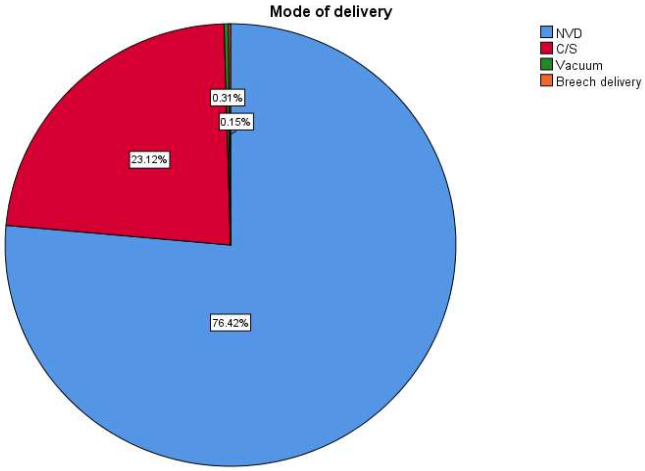


The single mothers who gave birth constituted 557 (85.3 %), while those who were married constituted 95 (14.5 %). Only 1 (0.2 %) of those who gave birth were divorced. A total of 620 (94.9 %) women who gave birth attended antenatal care, while 33 (5.1 %) did not attend any antenatal care services. Most of the study participants who gave birth, 391 (59.9 %), had two children or more, followed by those who gave birth for the first time 197 (30.2 %), while the lowest were those who had five or more children 65 (10.0%).

Most types of births in this group, 499 (76.4%), were normal vaginal births, followed by 151 (23.1%) who had a caesarean section, while 2 (0.3%) had a vacuum extraction birth by a skilled attendant. Only one (0.2%) of those who gave birth in the health facilities experienced a breech delivery.

Figure 2

Mode of Birth



The study revealed that admission observations were performed on most women: 566 (86.7%) of women had their BP checked as opposed to 87 (13.3%). Out of 653 women, 534 (81.8 %) maternal temperatures were taken while 119 (18.2 %) were not done. In addition, the study showed that the majority of women, 561 (85.9 %) in the study, had their pulse recorded, while 92 (14.1 %) pulse were not recorded. On urine testing, the results indicated that for 520 (79.6%) women, urine was not tested on admission, while for 133 (20.4%), there was no indication whether any urine test was done. Out of 653 births, 568 (87.0%) fetal heart rates were recorded, while 85 (13.0%) were not recorded. Additionally, the results indicated that 530 (81.2%) uterine contractions were counted, and 123 (18.8%) uterine contractions were not counted. The results revealed that 494 (75.7%) vaginal examinations were performed on admission, and 159 (24.3%) vaginal examinations were not performed.

Table 2

Midwifery Care on Admission

		Frequency	%
Blood Pressure	Recorded	566	86.7
	Not recorded	87	13.3
	Total	653	100.0
Temperature	Recorded	534	81.8
	Not recorded	119	18.2
	Total	653	100.0
Pulse	Recorded	561	85.9
	Not recorded	92	14.1
	Total	653	100.0
Urine Test	Recorded	520	79.6
	Not recorded	133	20.4
	Total	653	100.0
Fetal Heart Rate	Recorded	568	87.0
	Not Recorded	85	13.0
	Total	653	100.0
Uterine Contractions	Recorded	530	81.2
	Not Recorded	123	18.8
	Total	653	100.0
Vaginal Examination	Recorded	494	75.7
	Not recorded	159	24.3
	Total	653	100.0

As indicated in table 2, only 33 (5.1%) of the partographs were opened while 620 (94.9%) were not opened during the latent phase of labour. Thus, the study again revealed that out of 653 births, only 161 (24.7%) observations were performed hourly in the latent phase of labour, and 492 (75.3%) files did not indicate whether observations were performed or not.

Table 3

Active phase of labour

Partograph opened in the active phase of labour.

		Frequency	**%**
	Recorded	402	61.6
	Not recorded	251	38.4
	Total	653	100.0
Contractions monitored half-hourly			
	Recorded	284	43.5
	Not recorded	369	56.5
	Total	653	100.0
Fetal heart rate monitored half-hourly			
	Recorded	286	43.8
	Not recorded	367	56.2
	Total	653	100.0
BP monitored four-hourly			
	Recorded	245	37.5
	Not recorded	408	62.5
	Total	653	100.0

Urine monitored two hourly.

Recorded	201	30.8
Not recorded	452	69.2
Total	653	100.0

Vaginal examination is done and plotted four-hourly

Recorded	238	36.4
Not recorded	415	63.6
Total	653	100.0

The study revealed that 402 (61.6%) partographs were opened; however, 251 (38.4%) were not open. This study indicated that 284 (43.5%) uterine contractions were monitored half-hourly while 369 (56.5%) were not observed because they were not recorded. Fetal heart rate is also monitored half-hourly in the active phase of labour. This analysis further revealed that 284 (43.5%) fetal heart rates were monitored half hourly, but 367 (56.2%) were not monitored. Furthermore, this analysis shows that 245 (37.5%) BP was checked four-hourly while most files indicated that 408 (62.5%) were not done. This study demonstrated that 201 patients' (30.8%) urine were tested, but 452 (69.2%) were not tested. Out of 653, only 238 (36.4%) vaginal examinations were done and recorded, while 415 (63.6%) were not recorded.

Discussion

This study demonstrated that the age group from 20 – 35 years was the highest that gave birth. Adolescents and women aged above 36 years who gave birth

constituted a lower percentage. The results revealed that most of the age groups that gave birth were mature and could make informed decisions. Informed choices might lead to good quality midwifery care. The conclusion is that this age group can commence ANC early, detecting early problems during pregnancy and presenting themselves to the nearest health facility, unlike the age group that comprises adolescents. Another study also supports this study's findings by indicating that adolescents and unmarried younger women hide their pregnancies and delay ANC to avoid the potential social implications of pregnancy, such as exclusion from school, expulsion from their natal home, partner abandonment, stigmatisation, and gossip (Pell, 2013).

Over the past decades, out-of-wedlock births have risen, highlighting adverse outcomes between married and unmarried women (Balayla et al., 2011). This study supports the above findings as a higher rate of single mothers (85%) was found. In their study, Young and Declercq (2010) stated that young single mothers receive poor quality midwifery care since they may not get social and financial support from their partners. In addition, unmarried mothers have more significant risks of experiencing stillbirths and early or late neonatal deaths than married women (Balayla et al., 2011). Furthermore, this study has indicated a high percentage (90%) of ANC attendance. Therefore, this analysis revealed good ANC coverage, concluding that most pregnant women are exposed to the information regarding ANC. This correlates with previous studies conducted in Finland that indicated that almost the entire pregnant population (99.8%) attended antenatal care services since it was provided free of charge by the state and was easily accessible (Raatikainen et al., 2007).

Most of the study participants who gave birth had two or more children, followed by those who gave birth for the first time, while the lowest were those with five or more children. These results revealed that many births happened to the parity group with fewer complications. Additionally, findings from this study concur with the Christensen & Overgaard's (2017) comparative study that looked at the risks of primipara versus multipara. The same study concluded that intrapartum complications and obstetric interventions are more common in primipara than in multipara during childbirth (Christensen & Overgaard, 2017). Moreover, primipara has longer labours hours, are at an increased risk of intrapartum complications and undergo substantially more obstetric interventions, especially assisted vaginal delivery and unplanned caesarean section deliveries (Christensen & Overgaard, 2017). Therefore, the research findings provide evidence of poor record-keeping that consequently proves poor quality midwifery care, notwithstanding complications that occurred during the study period that were not studied.

Most of the births in this group were normal vaginal births, followed by caesarean section and vacuum extraction. Only one breech birth was conducted in the health facilities. This reveals that normal vaginal birth is more common than caesarean sections in the hospitals being studied. This practice is commendable as normal births are the preferred mode of birth as it reduces complications instead of caesarian section birth. This revelation coincides with a study conducted in Nepal, where the researchers learnt that normal vaginal births were the primary mode of birth (Pun & Chauhan, 2011). In addition, this was like the results of another study conducted in Iran that compared groups of pregnant women regarding their preference for C/S or vaginal birth (Maharlouei

et al., 2013). Of these subjects, 2197 (31.7%) preferred to have C/S, 4308 (62.2%) favoured an NVD and 416 (6%) had no idea regarding the mode of birth (Maharlouei et al., 2013). Furthermore, this study discovered that observations were not comprehensively performed upon admission, and the reasons are unknown.

This study identified a limited number of partographs managed in the latent phase of labour. The findings show that only 5.1% of partographs were managed in the latent phase of labour. This low figure is worrisome as deviations from normal to abnormal labour (e.g., fetal, and maternal distress) cannot be identified in time to take necessary actions. Furthermore, apart from opening partographs, out of 24.7% of managed partographs, 75.3% of observations were performed outside of WHO partograph guidelines. Underutilisation of partograph during labour was also recorded in other studies (Christensen & Overgaard, 2017; Pun & Chauhan, 2011; Raatikainen et al., 2007). Factors that contributed to the underutilisation of partograph in these studies included discrepancies between midwives and obstetricians regarding vaginal examination findings; early plotting before the woman was in established labour; staff shortage or lack of understanding of the skill of recording and lack of commitment by midwives, or ignorance (Lavender et al., 2018; Mathibe-Neke et al.,2013).

In contrast, this study shows a higher percentage (61.6%) of partographs managed in the active phase of labour than 5.1% in the latent phase. However, this study confirms high proportions of unrecorded parameters on the partographs and substandard monitoring of labour progress. According to partograph management guidelines as well as lack of recording of contractions

monitored, half-hourly stands at (56.5%). Of the parameters about foetal wellbeing, foetal heart rate was recorded according to the protocol in more than half of the cases (56.2%). Above all, most partographs started by midwives needed to be completed. This is indicative of poor recording of parameters on the partograph against standards. These study results are like those of Mathibe-Neke et al. (2013), who reported that partographs were audited and revealed an inadequate recording of observations documented by midwives and doctors. Another study further revealed that the correct completion of the partograph needed to be higher (Yisma et al., 2013). From 420 partographs reviewed across all the five health facilities, a minimum of fetal heart rate was recorded into the recommended standard 129 (30.7%) of the partographs, while 138 (32.9%) of cervical dilatation and 87 (20.70%) of uterine contractions were recorded to the recommended standard (Yisma et al., 2013).

Conclusion

Although a considerable amount of experience and information on the quality of midwifery care during labour has been accumulated in the past decades, it is not effectively used in the hospitals studied. Based on the partograph management guidelines, this study revealed high proportions of unrecorded parameters on the partographs and substandard monitoring of labour progress. The increased workload (midwife-patient ratio) undermined the completion of the partograph at these high-volume facilities. Thus, the quality of midwifery care rendered during labour could be linked to the contributing factors associated with increased maternal and neonatal mortality and morbidity in Namibia.

Recommendations

This study recommends the following to improve quality midwifery practice: Emphasis should be placed on the importance of auditing maternity records continuously to improve quality midwifery care; there is a need for midwives' in-service training on the importance of monitoring labouring women with a partograph and record-keeping management; health facilities should implement all national maternal and neonatal guidelines.

Recommendations for further research includes factors contributing to the underutilisation of the partograph and assessing skills level of midwives in the management of partographs and record keeping. In addition, there is still a need for research on issues concerning the quality of midwifery care and how best to implement serious interventions and proven effective strategies to fight poor quality midwifery care.

Limitations of the study

Time was limited as the researcher is a full-time employee therefore could not involve hospitals beyond Windhoek district. Moreover, this study is limited to Windhoek due to financial constraints.

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References

Balayla, J., Azoulay, L. & Abenhaim, H.A. (2011). Maternal marital status and the risk of stillbirth and infant death: A population-based cohort study on 40 million births in the United States. *Women's Health Issues, 21*(5), 361-365.

Baral, Y. R., Lyons, K., Skinner, J. V. T. E & Van Teijlingen, E. R. (2010). Determinants of skilled birth attendants for delivery in Nepal. *Kathmandu University Medical Journal, 8*(3), 325-332.

Buse, K., & Hawkes, S. (2015). Health in the sustainable development goals: Ready for a paradigm shift? *Globalisation and health*, *11*(1), 1–8.

Christensen L. F., and Overgaard C. (2017). Are freestanding midwifery units a safe alternative to obstetric units for low-risk, primiparous childbirth? An analysis of effect differences by parity in a matched cohort study. *BMC Pregnancy and Childbirth, 17*(1), 1-0.

International Confederation of Midwives. (2018). *Essential competencies for basic midwifery practice*. http://www.internationalmidwives.org

Kassar, S. B., Melo, A. M., Coutinho, S. B., Lima, M. C & Lira, P. I. (2014). Determinants of neonatal death with emphasis on health care during pregnancy, childbirth and reproductive history. *Journal De Pediatria, 89*(3), 269-277.

Kim, D., & Saada, A. (2013). The social determinants of infant mortality and birth outcomes in Western developed nations: A cross-country

systematic review. *International Journal of Environmental Research and Public Health, 10*(6), 2296-2335.

Lavender T., Cuthbert A., Smyth RM. (2018). Effect of partograph use on outcomes for women in spontaneous labour at term and their babies. *Cochrane Database Of Systematic Reviews 6*(8):CD005461. doi: 10.1002/14651858.CD005461.pub5. PMID: 30080256; PMCID: PMC6513424..

Maharlouei N., Rezaianzadeh A., Hesami E., Moradi F., Mazloomi E., Joulaei H., Khodayari & Lankarani K.B. (2013). The preference of Iranian women to have normal vaginal or cesarean deliveries. *Journal of Research in Medical Sciences*: *The official journal of Isfahan University of Medical* Sciences, *18*(11), 943-950.

Mathibe-Neke, J.M., Lebeko, F.L., & Motupa, B. (2013). The partograph: A labour management tool or a midwifery record. *International Journal of Nursing and Midwifery, 5*(8), 145-153.

Ministry of Health and Social Services. (2016). *Report on emergency obstetric and newborn care needs assessment. Windhoek: Namibia, Ministry of Health and Social Services.*

Ministry of Health and Social Services. (2016). *Maternal and Neonatal Improved Care. Quality Improvement Collaborative*.

Ministry of Health and Social Services. (2018). *Maternal and Neonatal Improved Care. Quality Improvement Collaborative.*

Mukisa, J., Grant, I., Magala, J., Ssemata, A. S., Lumala, P. Z., & Byamugisha, J. (2019). Level of Partograph completion and healthcare workers' perspectives on its use in Mulago National Referral and teaching hospital, Kampala, Uganda. BMC Health Services Research, *19*(1), 1-8.

Pingray, V., Bonet, M., Berrueta, M., Mazzoni, A., Belizán, M., Keil, N., Vogel, J., Althabe, F., & Oladapo, O. T. (2021). The development of the WHO Labour Care Guide: an international survey of maternity care providers. *Reproductive Health*, *18*(1), 1-9.

Pun, K.D., & Chauhan, M. (2011). Outcomes of adolescent pregnancy at Kathmandu University Hospital, Dhulikhel, Kavre. *Kathmandu University Medical Journal, 9*(1), 50-53.

Raatikainen, K., Heiskanen, N., & Heinonen, S. (2007). Under-attending free antenatal care is associated with adverse pregnancy outcomes. *BMC Public Health, 7*(1), p.268.

Renfrew, M.J., McFadden, A., Bastos, M.H., Campbell, J., Channon, A.A., & Cheung, N.F. (2014). Midwifery and quality care: Findings from a new evidence-informed framework for maternal and newborn care. *The Lancet, 384*(9948), 1129–1145.

World Health Organisation. 2014a. *Quality, equity, dignity a network for improving quality of care for maternal, newborn and child health.*

World Health Organization. (2014b). *Maternal mortality: to improve maternal health, barriers that limit access to quality maternal health services*

must be identified and addressed at all levels of the health system: fact sheet (No. WHO/RHR/14.06).

Yisma E., Dessalegn B., Astatkie A., & Fesseha N. (2013). Completion of the modified World Health Organization (WHO) partograph during labour in public health institutions of Addis Ababa, Ethiopia. *Reproductive Health, 10*(1), 1-7.

Young, R.L.. & Declercq, E. (2010). Implications of subdividing marital status: Are unmarried mothers with partners different from unmarried mothers without partners? *An exploratory analysis. Maternal and Child Health Journal*, *14*(2), pp.209-214.