

Factors Contributing To High Perinatal Morbidity Rates in Mankweng-Polokwane Complex of the Capricorn District, Limpopo Province, South Africa

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Abstract

Background: Perinatal morbidity is defined as presence of the disease which occurs as a result of side effect influences of treatment acting either on a foetus during pregnancy or new-born during the first week of life. High perinatal morbidity rates cause sub-optimal outcomes, which are common, and might impair subsequent developmental milestones of children or sound function of families, and increase health care cost. The maternity and neonatal units should be staffed with advance midwives, obstetricians, neonatal intensive care trained nurses, neonatologists and paediatricians.

Research Question: What are factors contributing to high perinatal morbidity rates in the Mankweng-Polokwane Complex of the Capricorn district, Limpopo province, South Africa?

Objective: To identify factors that contribute to high perinatal morbidity rates in Mankweng-Polokwane Complex of the Capricorn district, Limpopo province, South Africa.

Methods: The study implemented a quantitative, cross-sectional and descriptive research designs. Simple random sampling was used to ensure that all respondents had an equal chance of been selected. The sample comprised 66 respondents who were allocated in labour and Neonatal Intensive Care Unit (NICU) Mankweng and Polokwane Campuses. The questionnaires that contained closed-ended questionnaires were distributed to the respondents, completed and returned, except for 3 of them. Content validity was ensured through intense literature review and consultations with subject experts. Descriptive and inferential statistics were used to analyse data.

Results: Data revealed that shortage of staff, overcrowding of patients, staff workload, lack of equipment and supplies, perinatal asphyxia, prematurity, absenteeism and resignation were contributory factors to high perinatal morbidity rates.

Conclusion: The study recommended that all registered midwives working in maternity and neonatal unit should be upgraded in terms of the management of pregnant woman and neonates.

Keywords: Factors contributing, High perinatal morbidity rates

Perinatal morbidity is defined as presence of the disease which occurs as a result of side effect influences of treatment acting either on a fetus during pregnancy or new-born during the first week of life Young, [1]. The perinatal morbidity rates continue to increase despite the advancing maternal and neonatal care services in the Capricorn district, Limpopo province. Its prevention has major medical, social and economic costs. In the developing countries, the risk of perinatal morbidity is six times greater than in the developed countries; in the least developed countries it is over eight times higher. Globally, studies have shown that prematurity was observed to be a challenge and contributes to 40–80% of perinatal morbidity.

Hernandez-Rivas, Flores-Le Roux, Benaiges, Sagarra, et al [2]. Indicated that gestational diabetes mellitus occurs in 3-9% of pregnancies in the Spanish population and is associated with high perinatal morbidity. Furthermore, Adegoke, Atiyaye, Abubakar, Auta and Aboda [3] maintained that Nigeria is one of the 57 countries experiencing shortage of human resources for health and severe shortage of midwives. In addition, inefficient utilization of the Partograph which is graphical presentation of the progress of labour, fetal and maternal wellbeing add to the burden of perinatal morbidity. Therefore, early recognition of these factors is very critical for the prevention

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of perinatal morbidity. Avenant [4] also supported that identifying and correcting factors that contribute to perinatal care are of utmost importance.

South Africa has more than one million births occurring annually in the public health sector. The maternity and neonatal units should be staffed with advance midwives, midwives with additional training in perinatal care, doctors, and specialist obstetricians to provide quality perinatal care. Davidge [5] concluded that perinatal morbidity rates in South Africa are very high. Furthermore, perinatal health care is accessible in South Africa as part of the public sector and safer motherhood policy. According to a study conducted by Ramaboea [6] in Limpopo province, perinatal asphyxia, perinatal infections and prematurity were the leading causes of perinatal morbidity.

Methodology

Study Setting

Polokwane and Mankweng Campuses were included in the study. These hospitals were chosen because they are tertiary hospitals providing specialised perinatal care and neonatal intensive care for both sick and preterm infants at level II and III respectively.

Study Design

The study implemented a quantitative, cross-sectional and descriptive research design was conducted to describe the factors contributing to high perinatal morbidity rates. The design was found appropriate to determine the factors.

Population and Sampling

The population comprised of 80 registered midwives in Mankweng and Polokwane Campuses, of the Capricorn district, Limpopo province.

Sample size was 66 respondents who completed the questionnaires in labour unit and NICU respectively. Simple random sampling was used, each respondent had an equal chance of been selected De Vos., Strydom., Fouche & Delport, [7].

Data Collection

A self-developed questionnaire with 34 closed-ended questions was used to collect data. The questionnaire included anonymous demographic data including gender, speciality qualification and years of experience in labour and neonatal intensive care unit and also staffing and main causes for babies to become sick. The questionnaire was pre-tested on 10 respondents allocated in labour and neonatal intensive care unit to determine its validity and was refined before been distributed for the major study. Sixty-six (66) questionnaires were completed and returned only one questionnaire was not returned, and two were spoiled as they were incomplete, then 63 questionnaires were analysed. The respondents took about 35-45 minutes to complete the questionnaire. Data were collected over period of three months because the respondents were shift workers.

Ethical Considerations

Ethical clearance was granted by the University of Limpopo, Medunsa Research and Ethics Committee. Clearance certificate dated 07/2014 and project number MREC/HS/269/2014: PG.

Permission for data collection was obtained from the Limpopo Province Department of Health Ethics Committee and hospital management of Mankweng and Polokwane Campuses. The essence of the study was explained to the respondents before obtaining their consent to participate. Participation in the study was voluntary. The respondents' and hospital names were not used during data collection, anonymity and confidentiality were ensured.

Validity and Reliability

Validity of the instrument was ensured by conducting intense literature review on factors contributing to high perinatal morbidity rates. The self-developed questionnaire was presented to the study supervisor, co-supervisor, the statistician and the research committee in the field of study for evaluation of content validity. All the items of the questionnaire were evaluated Babbie & Mouton, [8]. The instrument was checked for relevant items to be measured; instructions and headings that guided the respondents Goodman & Moule [9].

Data Analysis

Data were analysed on SPSS version 22 software. The cross-tabulation was used to examine the relationship of the variables. Descriptive statistics were used to analyse the data collected from the socio-demographic part of the questionnaire. Inferential statistics was used based on probability and allowed judgements to be made about the variables Burns & Grove [10].

Results

Table 1 shows the speciality qualification between registered midwives allocated in labour unit and Neonatal ICU in Mankweng and Polokwane Campuses. More than half of the registered midwives obtained Advanced Midwifery and Neonatal Nursing Science, 5(12.8%) on the Mankweng Campus and 6(25%) on the Polokwane Campus; and 4(10.3%) of the registered midwives from the Mankweng Campus obtained Diploma in Neonatal Intensive Care Nursing and 0(0%) in Polokwane Campus, and 35(89.7%) in Mankweng Campus and 13(54.1%) did not respond to this item.

Furthermore, it indicates that less than half of the registered midwives had 1-5 years' work experience on the Mankweng and Polokwane Campuses, representing 14(35.8%) and 6 (25.0%),

Table 1: Speciality Qualification and Work Experience

	Mankweng Registered Midwives f (%)		Polokwane Registered Midwives f (%)	
Speciality Qualification				
Item	n		n	
Advance midwifery and Neonatal nursing science	39	5(12.8%)	24	6(25.0%)
Diploma in Neonatal Intensive care nursing	39	4(10.3%)	24	0(0%)
No response	39	35(89.7%)	24	13(54.1%)
Work experience				
1-5 years	39	14(35.8%)	24	6(25.0%)
6-10 years	39	11(28.2%)	24	2(8.3%)
11-15 years	39	3(7.7%)	24	3(12.5%)
16-20 years	39	3(7.7%)	24	2(8.3%)
21-25 years	39	3 (7.7%)	24	4(16.6%)
26+ years	39	10 (25.6%)	24	2(8.3%)

Table 2: Staffing

Mankweng Registered Midwives								
Item	n	Never f (%)	Hardly ever f (%)	Sometimes f (%)	Often f (%)	Always f (%)	No response	Total
1. Shortage of staff in my unit was high in the past 8 months	39	3(7.7%)	2(5.1%)	5(12.8%)	8(20.5%)	19(48.7%)	2(5.1%)	100%
2. Absenteeism was high in my unit in the past 8 months	39	5(12.8%)	2(5.1%)	16(41.0%)	7(17.9%)	5(12.8%)	4(10.3%)	100%
3. Resignation was high in the past 8 months	39	6(15.4%)	3(7.7%)	8(20.5%)	9(23.0%)	9(23.0%)	4(10.3%)	100%
4. Staff-patient ratio good	39	22(56.4%)	4(10.3%)	5(12.8%)	3(7.7%)	2(5.1%)	3(7.7%)	100%
Polokwane Registered Midwives								
1. Shortage of staff in my unit was high in the past 8 months	24	1(4.2%)	1(4.2%)	2(8.3%)	4(16.7%)	15(62.5%)	1(4.2%)	100%
2. Absenteeism was high in my unit in the past 8 months	24	3(12.5%)	4(16.7%)	7(29.1%)	4(16.7%)	3(12.5%)	3(12.5%)	100%
3. Resignation was high in the past 8 months	24	2(8.3%)	2(8.3%)	3(12.5%)	8(33.3%)	8(33.3%)	1(4.2%)	100%
4. Staff-patient ratio good	24	13(54.2%)	2(8.3%)	5(20.8%)	0(0.0%)	1(4.2%)	3(12.5%)	100%

Table 3: Main Causes for Babies to Become Sick

Item	Mankweng Registered Midwives							Total
	n	Never f (%)	Hardly ever f (%)	Sometimes f (%)	Often f (%)	Always f (%)	No response	
1. Overcrowding of patients	39	1(2.6%)	2(5.1%)	12(30.8%)	9(23.0%)	13(33.3%)	2(5.1%)	100%
2. Lack of medication	39	8(20.5%)	5(12.8%)	12(30.8%)	7(17.9%)	5(12.8%)	2(5.1%)	100%
3. Lack of equipment and supplies	39	5(12.8%)	0(0.0%)	12(30.8%)	11(28.2%)	9(23.0%)	2(5.1%)	100%
4. Prematurity	39	1(2.6%)	2(5.1%)	8(20.5%)	12(30.8%)	16(41.0%)	0(0.0%)	100%
5. Staff workload	39	2(5.1%)	2(5.1%)	7(17.9%)	9(23.0%)	19(48.7%)	0(0%)	100%
Polokwane Registered Midwives								
1. Overcrowding of patients	24	1(4.2%)	1(4.2%)	7(29.2%)	3(12.5%)	12(50.0%)	0(0.0%)	100%
2. Lack of medication	24	3(12.5%)	2(8.3%)	14(58.3%)	3(12.5%)	2(8.3%)	0(0.0%)	100%
3. Lack of equipment and supplies	24	2(8.3%)	1(4.2%)	7(29.2%)	7(29.2%)	6(25.0%)	1(4.2%)	100%
4. Prematurity	24	0(0.0%)	1(4.2%)	4(16.7%)	9(37.5%)	9(37.5%)	1(4.2%)	100%
5. Staff workload	24	1(4.2%)	1(4.2%)	5(20.8%)	6(25.0%)	11(45.8%)	0(0%)	100%

respectively. Of all the respondents on the Mankweng Campus, 6-10 years represented 11(28.2%) and 26+ years 10(25.6%). In Polokwane, 11-15 years represented 3 (12.5%) and 21-25 years 4(16.6%).

Table 2 indicates that 3(7.7%) and 1(4.2%) of the respondents in Mankweng and Polokwane Campuses respectively indicated that shortage of staff was never a problem in their units in the past 8 months, 2(5.1%) and 1(4.2%) showed it was hardly ever a problem, 5(12.8%) and 2(8.3%) stated that it was a problem sometimes, 8(20.5%) and 4(16.7%) responded that it was often a problem, whereas 19(48.7%) and 15(62.5%) indicated that it was always a problem. Of the respondents, 5(12.8%) and 3(12.5%) indicated that absenteeism in their units was never high in the past 8 months, 2(5.1%) and 4(16.7%) responded that it was hardly ever high, 16(41.0%) and 7(29.1%) indicated that it was high sometimes, 5(12.8%) and 3(12.5%) indicated that it was often high, whereas 2(5.1%) and 1(4.2%) showed that it was always high.

The respondents 6(15.4%) and 2(8.3%) in Mankweng and Polokwane Campuses respectively indicated that resignation was never high in their unit in the past 8 months, 3(7.7%) and 2(8.3%) showed that it was hardly ever high, 8(20.5%) and 3(12.5%) indicated that it was high sometimes, and there was equal response for often and always which represented 9(23.0%) and 8(33.3%). More than half 22(56.4%) and 13(54.2%) of the respondents in Mankweng and Polokwane Campuses respectively indicated that staff-patient ratio was never good, 4(10.3%) and 2(8.3%) stated that it was hardly ever good, 5(12.8%) and 5(20.8%) responded that it was good sometimes, 3(7.7%) and

0(0%) showed that it was often good, and always good was represented by 2(5.1%) and 1(4.2%).

Table 3 reveals that 1(2.6%) and 1(4.2%) of the respondents in Mankweng and Polokwane Campuses respectively indicated that overcrowding never contributed to high perinatal morbidity rates, 2((5.1%) and 1(4.2%) indicated that it hardly ever contributed, 12(30.8%) and 7(29.2%) responded that it sometimes contributed, 9(23.0%) and 3(12.5%) stated that it often contributed and 13(33.3%) and 12(50.0%) indicated that it always contributed, while 2(5.1%) ignored this item. Of the respondents, 8(20.5%) and 3(12.5%) indicated that lack of medication never contributed to high perinatal morbidity, 5(12.8%) and 2(8.3%) stated that it hardly ever contributed, 12 (30.8%) and 14(58.3%) responded that it contributed sometimes, about 7 (17.9%) and 3(12.5%) indicated that it often contributed and 5(12.8%) and 2(8.3%) stated that it always contributed.

According to 5(12.8%) and 2(8.3%) of the respondents, lack of equipment and supplies never contributed to high perinatal rates morbidity, only 1(4.2%) in Polokwane Campus stated that it hardly ever contributed, 12(30.8%) and 7(29.2%) responded that it contributed sometimes, 11 (28.2%) and 7(29.2%) indicated that it often contributed, 9(23.0%) and 6(25.0%) stated it contributed always. Only 1(2.6%) of the respondents in Mankweng Campus stated that prematurity never contributed to high perinatal morbidity, 2(5.1%) and 1(4.2%) indicated that it hardly ever contributed, 8(20.5%) and 4(16.7%) responded that it sometimes contributed, 12(30.8%) and 9(37.5%) stated that it often contributed, while 16(41.0%) and 9(37.5%) indicated that it always contributed.

Two (5.1%) and 1(4.2%) in Mankweng and Polokwane Campuses respectively indicated that there was never staff workload in their units, 2(5.1%) and 1(4.2%) showed that it was hardly ever, 7(17.9%) and 5(20.8%) indicated that it was sometimes, 19(23.0%) and 6(25.0%) indicated that there was often staff workload and the majority 19(48.7%) and 11(45.8%) stated that there was always staff workload.

Discussion

In this study it was found that both Mankweng and Polokwane Campuses had an equal percentage of registered midwives with Diploma in Midwifery, and Polokwane Campus had a large number of registered midwives as compared to Mankweng Campus. In Polokwane Campus no registered midwives had a speciality on neonatal intensive care nursing, in both Mankweng and Polokwane Campuses there were registered midwives with advanced midwifery and neonatal nursing science. All of the registered midwives with advanced midwifery were old, young midwives did not have speciality qualifications. This was supported by the Health Promotion Model by Pender, Murdaugh & Parsons [11] when showing that perceived barriers may influence action directly by blocking that action or indirectly by decreasing any commitment to act.

The results revealed that shortage of staff, absenteeism, resignation and bad staff-patient ratio were the factors that contributed to high perinatal morbidity rates. It also indicated that registered midwives were not satisfied with the high percentage of shortage in their units. Warmelink, Hoijtink, Noppers, Wieggers, Paul de Cock et al [12]. showed that in Tanzania, perinatal morbidities are problems of public health importance, and have been linked to the shortage of skilled staff. More than half of the respondents indicated that absenteeism was never high in their units; nevertheless 28.6% of the negative responses could impact quality patient care posing a challenge.

According to Mudaly [13] absenteeism in nursing is a concern because it disorganises the work routine, overburden workers that are present, consistently lowering the quality of patient care. Almost half of registered midwives indicated that there were not satisfied with resignation rates in their units, as it results in shortage of staff. Warmelink et al [12]. noted that job satisfaction plays an important part in any decision to leave the job. Pender et al [11]. Health Promotion Model states that activity-related affect vary from mild to quite strong and will be cognitively labelled, remembered, and continue to be with thoughts about the particular behaviour. The affect should be considered before the action, during the action and after the action Pender et al, [11].

The provision of skilled birth attendants is another intervention that can reduce perinatal morbidities in developing countries Ganatra & Zaidi [14] supported. The Health promotion Model by Pender et al [11]. indicates that perceived self-efficacy, or one's judgement of one's ability to carry out an identified action, relates not to a person's skills but to that person's judgement about what can be accomplished with those skills. Nigeria is regarded as one of the 57 countries experiencing critical shortage of health workers and one of the 73 countries with severe shortage of midwives. Adegoke et al [3]. support that there was an inadequate number of midwives to support the perinatal health, with 78% of the countries facing serious shortage in the midwifery workforce, which can result in

avoidable perinatal morbidity. Registered midwives showed that it was difficult to cope with the workload in the units allocated in. This was supported by the Health Promotion Model of Pender et al [11]. which state that situational influences includes the options that are perceived as being available, demand characteristics, and environmental features.

The study revealed that overcrowding of patients, lack of medication, lack of equipment and supplies, prematurity are the factors that contributes to high perinatal morbidity rates in Mankweng and Polokwane Campuses. This indicates that registered midwives were not satisfied with overcrowding of patients, which overload them with work as well. The Health Promotion Model shows that the intention of the health-promoting behaviour is for the client to realize positive health outcomes such as improved quality of perinatal health Pender et al, [11].

The results revealed that registered midwives manage the pregnant women and neonates with inadequate equipment and supplies, regardless of that it is expected that quality maternal and perinatal care be delivered. These findings align with the perceived barriers to action in the Health Promotion Model. Matlala and van der Westhuizen, [15] agree that inadequate equipment and supplies hinders provision of quality patient care, high perinatal morbidity results. Provision of equipment and supplies did not satisfy a large number of registered midwives. This was supported by Velaphi and Pattison, [16] who stated that most factors in South Africa are health-system related and include unavailability of health service like equipment.

Recommendations

- All registered midwives allocated in maternity and neonatal intensive care units should be trained on specialities such as advanced midwifery and neonatal intensive care to ensure that they are capable of providing quality perinatal care.
- Strengthening of short courses and workshops for enhancement of their knowledge and skills.
- The management should employ more registered midwives to cater for the health care needs of both pregnant women and sick neonates.
- Utilization of Partograph by the registered midwives and learner midwives should be effective and efficient when monitoring pregnant women in labour.
- Developing; reviewing and updating of policies, guidelines and protocols that enable health professionals to upgrade their skills.
- Further research to be conducted that can investigate the larger scale so that results can be generalized.

Limitations of the study

The findings of the study could not be generalised to other hospitals in the Limpopo province because the study was conducted in two tertiary hospitals in the Capricorn district of the Limpopo province.

Conclusion

High perinatal morbidity rates remain and are still a burden

to many countries. In this study, it was found that most of the registered midwives regarded shortage of staff, work overload, and prematurity as the leading causes of high perinatal morbidity. From the results of the analysis of collected data, outstanding variables are, namely, shortage of staff, workload, overcrowding of patients. The study showed that high perinatal morbidity rates are still a burden to many countries worldwide.

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Authors have no conflict of interest

The data supporting the results reported, and data sets analysed or generated from the study can be found when needed

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