

## **FACILITATION OF MIDWIFERY STUDENTS REGARDING UTILISATION OF A PARTOGRAPH**

**Mathibe-Neke, J.M.** MA Cur (Midwifery and Neonatal Nursing)  
University of Witwatersrand  
7 York Road  
Parktown  
2193

### **ABSTRACT**

Lack of disciplined use of a partograph in the management of labour is a widespread concern. Given the high maternal and perinatal morbidity and mortality rate experienced in Africa, appropriate interventions that support good clinical management are necessary. As one of the ten key recommendations in the Third Report on Confidential Enquiries into Maternal Deaths in South Africa, recommendation 8 states that “the correct use of a partograph should become a norm at each institution conducting births” (National Department of Health, 2006:24).

The overall purpose of this study was to determine whether midwifery students were adequately facilitated regarding the utilisation of a partograph as a midwifery record.

The study was exploratory and descriptive. A cross-sectional survey was conducted using a questionnaire with closed and open-ended questions. The self-administered questionnaire was distributed to 80 midwifery students during their final year of study; 75% (n=60) completed questionnaires were returned.

The findings illustrated that students were adequately facilitated theoretically. There was evidence of minimal facilitation of midwifery students in the clinical setting. This might have implications for the underutilisation of the partograph by registered midwives.

Recommendations regarding the effective facilitation of the students in the management of labour, with regard to the utilisation of a partograph, as a midwifery record will be provided based on the research results.

**Keywords:** clinical facilitation, midwifery students, partograph, South Africa, utilisation of partographs

### **INTRODUCTION AND BACKGROUND INFORMATION**

Labour is usually diagnosed by a midwife or an obstetrician when there are regular uterine contractions, cervical dilatation and a show. About two thirds of deliveries progress normally. In the other third, vigilant monitoring and intervention may be required to prevent maternal and/or foetal complications (Chamberlain & Steer, 1999:1124).

The evolution of the partograph originated in 1954 when Friedman designed the graphic representation of the progress of labour. Friedman's graph described an s-shaped curve of typical cervical dilatation as plotted against time. The normal duration of labour was also defined. The first formal partograph was developed by Professor Hugh Phillpott in 1971 for application during labour in central Africa, hence the Phillpott chart. Phillpott identified cervical dilatation and the descent of the presenting part of the baby as the major observable clinical factors in the assessment of the progress of labour. The partograph was initially used in Zimbabwe in 1972. It is currently being used internationally as a standard means of documenting the progress of labour (Studd, 1973:451, Windrim, Seaward, Hodnett, Akoury, Kingdom, Salenieks, Fallah & Ryan, 2007:30).

The introduction of the use of a partograph by the World Health Organization (WHO, 1994), was preceded by a multicenter trial involving 35 484 women in eight hospitals in Indonesia, Malaysia and Thailand during 1990 and 1991. The partograph was introduced with a protocol that defined labour and a need to delay interventions until the action line was reached. The outcome of this intervention was a reduction in prolonged labour by 41%, a reduction in oxytocin augmentation by 54%, a reduction in emergency caesarean sections by 3%, and a reduction in the rate of vaginal examinations which led to reduced rates of sepsis. The participants in the WHO trial indicated that the partograph improved the discipline and communication about the management and progress of labour and allowed midwives some free time to provide supportive care to women who were in labour (Lennox, 1994:1016). Based on the findings of this study, the WHO recommended that the partograph should be used as a standard protocol in managing the labour process. The MNH partograph training program (MNH, 2002) have also proven to be effective in offering in-service education for doctors and midwives. In addition to the training programme, the MNH is also involved in encouraging the adoption of the WHO partograph as a national standard.

According to the WHO (1994), the partograph is a printed graph representing the progress of labour. It has a 4-hour action line which denotes the timing of intervention for prolonged labour. The health care provider regularly plots the following parameters once the woman experiences true labour:

- vital data of the mother and (unborn) baby
- pattern of uterine contractions
- dilatation and effacement of the cervix
- descent of the foetus
- colour of the amniotic fluid
- medications that have been given to the woman

Already plotted on the partograph are the alert and action lines. The alert line is plotted to correspond with the active phase of labour once the woman's dilated cervix reaches

4cm. The cervix is expected to dilate by 1cm to 1,5cm per hour. The action line is plotted four hours after the alert line. If the woman's labour is not following the expected pattern within four hours, the plotting of her labour will approach the action line, as such signalling the need for special intervention. The appropriate actions when the action line is crossed includes the use of oxytocin to augment labour, vacuum assisted birth or caesarean section (Van Bogaert 2004: 882).

Registered midwives, student midwives and obstetricians use the partograph to monitor all the stages of labour. The partograph is of less use without management protocols that give clear directives about the actions that should be taken at a specific point. Each healthcare setting needs a set of rules to guide decision-making so that providers know what actions to take when the partograph indicates that the woman needs additional and specialised care. Protocols should address issues such as when should the referral be made, what action should be taken and the procedure for referral. Once full cervical dilatation has been achieved, the use of the partograph stops. The second, third and fourth stages of labour are recorded on the other parts of the labour record (MCH, 1996:2). The crucial factor in the active management of labour with the use of a partograph is prompt timing for interventions when prolonged labour is identified.

Prolonged labour is a leading cause of death among mothers and newborns in the developing world. It is most likely to occur if a woman's pelvis is not large enough to allow the smooth passage of the baby's head or if a woman's uterus doesn't contract sufficiently, leading to obstructed labour. Obstruction can be due to defects from the birth canal or the baby. The effect of prolonged labour on the mother might be obstructed labour, uterine rupture, dehydration, exhaustion, maternal infection and postpartum haemorrhage. For the baby, prolonged labour may lead to foetal distress, neonatal infections or death. Skilled management of labour using the partograph, is key to the appropriate prevention and treatment of prolonged labour and its complications (WHO, 1994:1399-1404).

The initial use of a partograph in Birmingham Maternity Hospital during 1972, also posed problems such as incorrect recordings. This occurred irrespective of prior preparation of nurses and doctors. These problems were resolved through the modification of Phillipott's original partograph (Studd 1973:451). The correct use of the partograph was recognised by the WHO (1994) as a key strategy for the effective management of labour. Despite the WHO's recommendation that the partograph be used in monitoring all labours, it is still not widely used in Africa or elsewhere in the developing world. In some countries, the partograph serves only as a record of labour and not as a tool to guide decision-making during labour, as it is only completed after the baby has been born (MNH,2002:2).

Armstrong (2008), in her case study where a woman delivered a stillborn baby, referred to the Department of Health's Guidelines for Maternity Care in South Africa, on the routine monitoring and recording of the labour process as follows: progress of labour

(½ hourly frequency and strength of uterine contractions, 2 hourly level of presenting part, cervical dilatation, caput and moulding); maternal condition (½ hourly pulse, hourly blood pressure, 2 hourly urinalysis and 4 hourly temperature monitoring); foetal condition (½ hourly foetal heart rate, before, during and after a contraction, 2 hourly amnion liquor monitoring with ruptured membranes). Her analysis of the management of this woman's labour, based on the above guidelines, indicated that the midwife did not adequately use the partograph to monitor the labour process, and as such, failed to implement the appropriate intervention.

The partograph provides a graphic illustration of the progress of labour. It is a practical teaching aid, simple to use, facilitating the exchange of technical information between caregivers. It is also a valuable research tool that can be used to audit the management of labour.

## **PROBLEM STATEMENT**

There is a widespread concern regarding the correct and efficient use of a partograph by midwifery practitioners (Phillpot, 2004:58). This was discussed at the 4<sup>th</sup> Annual Congress of Midwives of South Africa in Gauteng Province during 2004. Professor Phillpott discussed the disciplined use of a partograph. He also highlighted a generalised concern regarding the ignorance displayed by midwifery practitioners in using the partograph during the management of labour.

Given the high maternal and perinatal morbidity and mortality experienced with 3 406 deaths reported between 2002 and 2004 (National Department of Health, 2006), several interventions have been identified as important for curbing this high maternal mortality rate. These interventions include the early detection of the abnormal progress of labour by the use of the partograph (Okechukwu, Adesegun, Niyi, Babalola & Uche, and 2007:149).

As part of the Safe Motherhood Initiative, the WHO (1998:5) has modified and promoted the use of a partograph with a view to improve the management of labour and to reduce maternal and foetal morbidity and mortality. Okechukwu et al. (2007) also reported that the use of the partograph for reducing maternal mortality in developing countries, like South Africa, is no longer in doubt.

A report from a collaborative workshop, that was held in Japan in 1990, on the education of midwives revealed that midwives might not receive adequate training to enable them to work as competent and confident practitioners (Walker, 1992:8).

## **THE PURPOSE OF THE STUDY**

The overall purpose of this study was to determine whether the midwifery students had received adequate theoretical and clinical facilitation regarding the utilisation of a partograph. The objectives of the study were to:

- explore and describe the adequacy of knowledge, skill competency and clinical decision-making abilities of the midwifery students with regard to the utilisation of a partograph as a midwifery record and to
- identify areas that need further intervention regarding the facilitation of midwifery students in order to prepare them to be competent in the utilisation of a partograph at the completion of their training.

## **SIGNIFICANCE OF THE STUDY**

The significance of the study was to address gaps in the education and training of midwifery students in using the partograph. The study was part of a quality assurance exercise regarding the management of labour.

## **PARADIGMATIC PERSPECTIVE**

The Theory for Health Promotion in Nursing (RAU 1999: 2) was used as a point of departure for this study. The major focus was on the promotion of optimal maternal and foetal wellbeing during the management of labour. Health promotion is a major focus for the wellbeing of the mother and the baby. This is based on the midwife's ability to assess the woman during labour using the partograph, and as such, intervening accordingly when complications occur.

A functional approach, as described by Botes (1995), was applied to this study. A functional approach relates to the pragmatic aim of the practice of science that indicates that valid knowledge must be utilised through its application in practice in order to improve practice. A functional approach for this study, relates to the student midwife's ability to use the partograph as a midwifery record and to implement effective interventions when necessary.

## **VALIDITY AND RELIABILITY**

Validity and reliability were ensured through the following steps:

The researcher adhered to logic and justification in the research process. The context of the study and the methodology were explained in detail. The researcher was part of student's theoretical and practical facilitation regarding the utilisation of a partograph. The researcher has experience in the midwifery clinical settings where the students were

placed for their clinical midwifery learning experiences. The researcher had undergone training for research methodology at master's and doctoral levels.

Structural coherence was maintained as the focus of the study was on the extent of the facilitation of midwifery students regarding the utilisation of a partograph. The same instrument for data collection was used for all participants.

## **DEFINITION OF CONCEPTS**

The following definitions apply to the context of this study:

### **Clinical facilitation**

When the facilitator guides, supports and stimulates learning by designing appropriate learning activities in a clinical setting and allowing the student to experience that learning (Gaberson & Oerman, 2007:3), it is described as clinical facilitation.

### **Facilitator**

According to Bacal (2003), a facilitator is an individual equipped with expert knowledge, critical thinking and problem solving skills who interacts with a student or learner to guide effective learning in a supportive and nurturing manner.

### **Facilitation**

The art of leading and guiding people through a process based on set objectives is known as facilitation. It assists a student to explore the existing knowledge and to organise information in such a way that understanding and new meaning is found. Facilitation can be done theoretically and/or practically (Moo Yoong, 2002:1)

### **Labour**

The act of giving birth to a child. It is characterised by the regular and rhythmic uterine contractions and the gradual dilatation and effacement of the cervix. The first stage lasts until there is full dilatation of the cervical os, the second stage lasts until the baby has been delivered and the third stage implies the delivery of the placenta and membranes (Brooker 2006:136).

### **Labour unit**

An area or unit where the labour process is monitored and deliveries are conducted, is known as the labour unit or labour ward. For this study it refers to the four labour units where the students were placed for their midwifery clinical experiences.

### **Midwifery students**

Students are active participants in the learning process, interacting effectively with available resources, clients, facilitators and other health care providers (Gaberson &

Oermann, 2007:3). The students for this study are students in the programme leading to registration as a nurse (general, psychiatric and community) and midwife from a nursing college in the Gauteng Province (South African Nursing Council, 1994:4).

### **Partograph**

A chart that is used by midwifery practitioners to record the woman's progress of labour and other essential maternal and foetal observations. It serves as a bedside tool allowing personnel to determine if labour is progressing within normal parameters or if intervention is necessary (Windrim et al., 2006:27- 28).

### **Theoretical facilitation**

The cognitive preparation of students, regarding the knowledge embedded within the actual midwifery practice (Benner, 2001:1-3), is known as theoretical midwifery facilitation.

## **RESEARCH DESIGN AND METHOD**

The study was exploratory, descriptive and contextual in nature as the focus was on the utilisation of a partograph within an identified context. A quantitative cross-sectional survey was done to describe knowledge, characteristics, opinions and attitudes of midwifery students regarding the use of a partograph (Burns & Grove, 2007:31-32, De Vos, Strydom, Fouche & Delpont, 2005:137).

## **DATA COLLECTION**

Self-administered questionnaires, with closed and open-ended questions were distributed to 80 midwifery students, the total population, during August 2005. The open-ended questions allowed the collection of more varied information. The questions reflected the students' demographic data, knowledge, affective and psychomotor domains regarding the utilisation of a partograph. Out of the 80 questionnaires that were distributed, 75% (n=60) were completed and returned.

## **POPULATION AND SAMPLE**

The study was conducted at a nursing college and four hospitals in Gauteng Province. The students were placed on a two weekly and on a monthly rotation within the four labour units of these four hospitals. In the labour units, the students were accompanied and supervised by registered midwives.

The population for the study comprised all the students in their final year of study for the course leading to registration as a nurse (general, psychiatric and community) and midwife. The inclusion criteria were as follows:

- The students should be in their final year of midwifery training.
- The students should have been placed in the labour unit for a minimum of two weeks.
- The students should have managed a woman from the first to the fourth stage of labour.

## **DATA ANALYSIS**

Microsoft Office Excel 2007 was used for data entry and analysis. Content analysis was applied to open-ended questions. The services of an independent data analyst were utilised to validate the results.

## **ETHICAL CONSIDERATIONS**

Written consent was obtained from all the hospital managers and the college management to conduct the study. The students were offered the following:

Informed written consent, voluntary participation, protection from harm, self-determination, privacy, confidentiality anonymity and freedom to withdraw from the study at any point (Denosa, 1996). Feedback was given through an oral presentation of the findings at the 6<sup>th</sup> Annual Congress of Midwives of South Africa in the Eastern Cape Province in 2006. A written report was sent to the college and the labour units of the hospitals that participated in the study.

## **RESEARCH RESULTS AND DISCUSSIONS (n=60)**

### **Biographic data**

The responses received were from 9 male and 51 female students, in the final year of their midwifery training.

### **The duration of students' placements in the labour units**

The students were asked about the duration of their placements in the labour unit for their clinical experience. The distribution from the students' responses was that 5.0 %, (n=3) of students were placed for less than four weeks, 36.7%, (n=22) of students were placed for four weeks and 58.3 %, (n=35) students were placed for more than four weeks. This data reflect that 95%, (n=57) of students were placed for four weeks or more in a labour unit. The duration of placement allowed students enough opportunities to be guided by the registered midwives regarding the utilisation of partographs, through clinical teaching and supervision. Supervision should also allow students to learn through their own experience and reflection (RCM, 2000:225).



## **The rotation of the students in the four labour units**

In relation to the students' rotation in the four labour units of the four hospitals, 66,7%, (n=40) students were placed in only one labour unit, 13, 3%, (n=8) students were placed in two labour units from two different hospitals, 15%, (n=9) students were rotated in three labour units of three different hospitals and only 5% (n=3) were rotated in all four labour units of the four hospitals. This data reflect that 33% of students were assigned to more than one labour unit of the four hospitals. This enabled these students to render comments about their concerns and make recommendations about their clinical experiences regarding the utilisation of a partograph, applicable to all four labour units of the four participating hospitals.

## **Theoretical facilitation of students by midwifery lecturers**

All students, (100%; n=60) indicated that they had received theoretical facilitation regarding the use of the partograph. Theoretical facilitation was offered by midwifery lecturers in a classroom setting. It entailed information on what the partograph is, the advantages of using a partograph, the correct recording, the alert and action lines and when to intervene.

The students' responses to the last question on "their comments regarding the use of the partograph" and their abilities to describe the correct data that should be recorded on the partograph, indicate that they had been adequately theoretically facilitated. Formal theory alone is insufficient to enhance competency in using the partograph, theory should form a basis for clinical practice (Woodward, 2000:72-73).

## **The students' perceptions about the importance of using the partograph in managing labour**

The students considered a partograph as a tool to guide decision making during labour. The following themes emerged from the students' responses:

*"Informative and directive, to identify poor progress or obstructed labour; to observe foetal and maternal condition, to manage and interpret information, communication and overview of the situation, then action will be taken by use of correct intervention".*

This student's responses correspond with the guidelines for using the partograph as stated by the WHO (1994) and the Guidelines for Maternity Care in South Africa (National Department of Health, 2007). The students displayed personal understanding regarding the use of a partograph.

## **Data recorded on the partograph from the students' clinical experiences**

The students were asked to indicate the data that were recorded on the partograph from their clinical experiences. The highest score by 50% (n=30) of students was the recording of the progress of labour. The progress of labour includes the effectiveness of

uterine contractions, the progress of the level of the presenting part, cervical dilatation and effacement, caput and moulding. The recording for maternal conditions accounted for 28% (n=17) of students' responses. The score for foetal wellbeing was 22% (n=13). Foetal wellbeing includes the foetal heart rate, descent of the presenting part, the existence of caput and moulding (Armstrong, 2008:13). Both the foetal and maternal wellbeing scored lower than the progress of labour. The progress of labour, with a 50% score, include some parameters from maternal and foetal wellbeing. If the progress of labour is correctly monitored and recorded on the partograph according to stated guidelines, the midwife should be able to recognise prolonged labour and intervene accordingly.

### **The stages of labour that were recorded by students**

In their response to the question on the stages of labour that they monitored and recorded, the students mostly recorded the maternal observations during the first stage of labour, with limited access to recording for example cervical dilatation and descent of the presenting part, as this is mostly recorded by registered midwives (74% (n=44)). The latent stage of the first stage of labour was not usually recorded in the partograph as it is traditionally initiated during the active phase of the first stage of labour, explaining the 0% (n=0) rate for the latent phase of labour. The second stage of labour recording was 18% (n=11). This is the actual delivery of the baby. The implication is that even if the student has conducted the delivery under the supervision of the registered midwife, the midwives are the ones that complete the labour record most of the times. The findings of an observational study on the use of the partograph during the second stage of labour by Sizer, Evans, Bailey and Wiener (2000:678), was that it was a logical extension of the first stage of the labour partograph. It was found to be effective as 88% of women delivered within one hour with no need for further interventions after their deliveries. The students should as such, be given an opportunity to record data pertaining to the first and second stages of labour.

The lowest percentage, namely 8% (n=5) was the recording of data on the third stage of labour which is normally recorded simultaneously with the data for the second stage, explaining its low frequency. The fourth stage of labour refers to the immediate postpartum care that is usually monitored by student midwives as it pertains to postpartum vital parameters, explaining why the fourth stage has not been recorded on the partograph.

### **Who uses the partograph?**

The students' responses indicated that the partograph was mostly used by registered midwives (55,4%) n=33, followed by doctors (36,1%), n=22 and midwifery students 8,4%, n=5. This reflects an inadequate exposure of midwifery students to the clinical implementation of the partograph. Based on the highest percentage of registered midwives using the partograph, this should provide adequate opportunities for engaging the student midwives in using the partograph. According to Woodward (2000), the

involvement of the students can be achieved through the application of theoretical frameworks and protocols in managing the labour process, team cohesion and clinical leadership.

### **Midwifery students' comments**

The last question on the questionnaire for the midwifery students was: *‘What are your additional comments, if any, about the utilisation of a partograph’?*

The major themes that emerged from the students' responses were the underutilisation of the partograph by midwifery practitioners, such as completing the partograph only after the baby had been delivered. Lack of understanding and inconsistencies of how to record data in the partograph, caused midwives in the same unit to plot data differently on the partograph. Ignorance regarding the use of the partograph could be attributed to the lack of adequate guidance of midwifery students by registered midwives and a need for staff development through in-service education. The students' concerns indicated that they acknowledged the use of the partograph and they were ready to learn about it. The RCM (2000) recommended that all midwives should keep their skills and knowledge updated through ongoing programmes of continuing professional development.

According to the Third Report on Confidential Enquiries into Maternal Deaths in South Africa 2002-2004, as many as 27,8% of maternal deaths (National Department of Health, 2007) were due to substandard care. Substandard care includes the inability to identify problems from the partograph and delays in referral once complications occur. Lack of appropriately trained staff was cited as one of the three main avoidable factors that could lead to maternal deaths. This calls for proper training of midwives regarding the utilisation of a partograph (Snyman, 2007:10).

### **LIMITATIONS**

The limitation for the study is a “researcher effect” as the researcher was the participants' theoretical facilitator during the study. This could have led to the students withholding some important information in response to open-ended questions.

Only questionnaires were used to collect data. Audits of the partographs would have produced more useful data. Only four hospitals participated in the study, implying that the research results cannot be generalised to other hospitals.

### **CONCLUSION**

The theoretical facilitation of midwifery students seems adequate as reflected from their responses. Registered clinical midwives are utilising the partograph partly correctly to a limited extent. Clinical facilitation of students was hampered by inadequate exposure to some aspects of the partograph, especially the crucial labour stages which are the core

of the management of labour. Reportedly some midwives did not regard the utilisation of the partograph as a labour management tool, but rather as a midwifery record.

## RECOMMENDATIONS

The implementation of the following recommendations can be useful in improving the facilitation of midwifery students regarding the utilisation of a partograph in clinical practice.

- Education programmes for midwifery students need to focus on developing both factual knowledge and decision-making expertise.
- Midwifery lecturers, clinical tutors and clinical supervisors need to unite in order to create a work culture in which theoretical frameworks such as the partograph, are used to critically evaluate and enhance practice (Woodward, 2000:74)
- The partograph should be used for every woman in labour so that the obstetric team can identify complications and take appropriate actions timeously.
- The partograph should be correctly documented, and used at the right time not after the woman had delivered the baby.
- The WHO standards for recording in the partograph should be accessible to all institutions using the partograph to maintain consistency in its utilisation
- There is a need for continuous in-service education regarding the purpose and the use of a partograph in order to break the chain of underutilisation.
- The partograph should be taken seriously by the midwifery team and it should be considered as a tool for diagnosing problems during the progress of labour.
- There is a need for commitment by the midwifery team to the use of the partograph to help reduce maternal and neonatal mortality rates.
- Clinical facilitators should involve the students in the comprehensive assessment and management of the woman during labour and not only confine them to monitoring of vital data, so that they will become competent practitioners.
- It is also of cardinal importance that observations are being done meticulously and that the findings are correctly interpreted. This should be checked by conducting regular audits of the recorded partograph data.
- Further research is recommended to assess the understanding and acceptability of the use of the partograph by midwifery practitioners. This might assist in identifying factors that may lead to the underutilisation of a partograph as a midwifery record. Future research should include audits of the completed partographs.

## Acknowledgements

Appreciation is hereby given to the management of the nursing college in Gauteng and the midwifery practitioners working at the midwifery clinical facilities that participated in the study. The midwifery students who completed the questionnaires are thanked for making this research possible.

## LIST OF REFERENCES

- Armstrong, S. 2008. Improving the quality of care – learning through case studies. Monitoring labour and foetal distress. *Professional Nursing Today*, 12(1):12-14.
- Bacal, R. 2003. The role of the facilitator. Understanding what facilitators really do! International Association of Facilitators. Available at (<http://www.iaf-world.org/i4a/pages/index.cfm?pageid=3291> (accessed on 14 April 2009).
- Benner, P. 2001. *From novice to expert. Excellence and power in clinical nursing practice*. London: Prentice Hall.
- Botes, A.C. 1995. *A model of research for nursing. Department of Nursing Science*. Auckland Park: Rand Afrikaans University.
- Brooker, C. 2006. *Dictionary of nursing*. 19<sup>th</sup> Edition. London: Churchill Livingstone.
- Burns, N. & Grove, S.K. 1997. *The practice of nursing research, conduct, critique and utilization*. 3<sup>rd</sup> Edition. Philadelphia: Harcourt Brace.
- Chamberlain, G. & Steer, P. 1999. ABC of labour care: labour in special circumstances. *British Midwifery Journal*, 318(24 April):1124-1127.
- Cioffi, J. 1998. Education for clinical decision making in midwifery practice. *Midwifery*, 14:1-4.
- Denosa – see Democratic Nursing Organisation of South Africa
- Democratic Nursing Organisation of South Africa. 1996. *Ethical considerations in nursing research*. Pretoria: Denosa.
- De Vos, A.S. (ed), Strydom, H., Fouche, C.B. & Delpont, C.S.L. 2005. *Research at grass roots for the social sciences and human service professions*. 3<sup>rd</sup> Edition. Pretoria: Van Schaik.
- Gaberson, K.B. & Oerman, H. 2007. *Clinical teaching strategies in nursing*. 2<sup>nd</sup> Edition. New York: Springer.
- Lennox, C. 1994. WHO partogram helps. *British Medical Journal*, 309 (6960):1016.
- Maternal Child Health Unit, 1996. The partograph – use it! *Child Health Unit Information and Resource Centre*, 2:5-7.
- Maternal & Neonatal Health, 2002. *The Partograph: an essential tool for decision-making during labour. Best practices*. United States Agency for International Development. Available at [www.mnh.jhpiego.org](http://www.mnh.jhpiego.org)
- MCH – see Maternal Child Health Unit
- MNH – see Maternal & Neonatal Health
- Moo Yoong, S. 2002. Facilitation: a different pedagogy?, Triennial newsletter. *Centre for Development of Teaching and Learning*, 6(1):1-4.

- National Department of Health, 2006. *Saving mothers: third report on confidential enquiries into maternal deaths in South Africa. 2002–2004*. Pretoria: Government Printer.
- National Department of Health, 2007. *Guidelines for maternity care in South Africa. A manual for clinics, community health care centres and district hospitals*. 3<sup>rd</sup> Edition. Pretoria: Government Printer.
- Okechukwu, E., Adesegun, A., Niyi, O., Babalola, A. & Uche, C. 2007. Impact of training on the use of partograph on maternity perinatal outcome in peripheral health centers. *Journal of Turkish-German Gynecological Association*, 8(2):148-152.
- Phillpot, H. 2004. The disciplined use of a partograph in the management of the first stage of labour. 4<sup>th</sup> Annual Midwives Congress. Johannesburg.
- Rand Afrikaans University, 1999. *Nursing philosophy*. Johannesburg: Rand Afrikaans University. pp1-16.
- RAU – see Rand Afrikaans University
- RCM – see Royal College of Nursing
- Royal College of Nursing. 2000. Assessing and managing risk in midwifery practice. *Midwifery*, 3(7):224-225.
- Sizer, A.R., Evans, J., Bailey, S.M. & Wiener, J. 2000. A second-stage partogram. *Obstetrics & Gynaecology*, 96(5):678–683.
- Snyman, L.C. 2007. The role of the midwife in preventing maternal mortality. *Professional Nursing Today*, 11(3):8-10.
- SANC – see South African Nursing Council
- South African Nursing Council. 1994. Minimum requirements for the education and guide concerning the teaching of students in the programme leading to registration as a nurse (general, psychiatric and community) and midwife. Regulation 425 (As amended). Pretoria
- Studd, J. 1973. Partograms and nomograms of cervical management of primigravid labour. *British Medical Journal*, 4 (24 November):451-455.
- Van Bogaert, L.J. 2004. The multigravid partogram. Should it be customised? *Journal of Obstetrics and Gynaecology*, 24(8):881-885.
- Walker, J. 1992. Report from the second ICM/WHO/UNICEFF pre-congress workshop on midwifery education. Action for safe motherhood. *International Journal of Gynaecology and Obstetrics*, 38(supplement):S7-S8.
- 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 of Canada*, 20(1):27-34.
- Woodward, V. 2000. Caring for women: the potential contribution of formal theory to midwifery practice. *Midwifery*, 16:68-75.
- WHO – see World Health Organization
- World Health Organization. 1994. World Health Organization partograph in the management of labour. World Health Organization Maternal Health and Safe Motherhood Programme. *Lancet*, 343(8910):1399-1404.
- World Health Organization. 1998. World Health Day. Safe Motherhood. Geneva.