

Knowledge and Use of Partograph among Obstetric Care Givers in a Sample of Hospitals in Baghdad-2017

Teeba Mezher Abdul-Saheb

MBChB

Lamia Dhia Al-Deen

MBChB, MSc, PhD.

Abstract:-

Background: Proper management of active stage of labor during child birth by obstetric care givers will reduce the complications and adverse outcomes which can happen, this is can be achieved by the use of partograph which serves as most important, cost effective tool that provides visual assessment of labor progress in relation to time.

Objectives: To assess the knowledge and use of the partograph among obstetric caregivers in monitoring of labor and determine the factors that impede its use among them.

Methodology: A cross-sectional study with analytic element was conducted in period from the first of May to the end of August, 2017. A convenient sample of data were collected from ten hospitals from Al-Krakh and Al-Resafa sides of Baghdad city where obstetric care providers that attend labour cases were interviewed using structured questionnaire

Results: A sample of 300 obstetric care givers was interviewed during the study period. Most of them (97%) were aware of partograph. 39% and 39.7% showed fair and good level of knowledge respectively. The percentage of doctors who used the partograph was (58.4%). The knowledge and use of the partograph was higher in teaching hospitals than general hospitals.

Conclusion: The study revealed that nearly all the participants (doctors, midwives and nurses) knew what the partograph was and the majority of obstetric providers of care had good knowledge about the partograph while its use confined to the doctors only that more than half of them reported its use in addition to higher knowledge and use of partograph in teaching than general hospitals.

Keywords: Knowledge, Use, Partograph, Care, Givers, Baghdad.

Introduction

Prolonged labour is a leading cause of death among mothers in developing world. If the labour does not progress normally, the women may experience serious complications such as obstructed labour, ruptured uterus and dystocia, Prolonged labour may also contribute to maternal infection or hemorrhage and to neonatal infection⁽¹⁾. Partograph can be defined as a graphic recording and effective mean of recording labour progress that serves as a tool that can be used by midwives, nurses and doctors to assess the progress of labour and to identify when intervention is necessary⁽²⁾. And enabling them to record their examination findings on standardized form which generates pictorial overview of labour monitoring⁽³⁾. The observation that are routinely recorded on the partograph are the progress of labour which includes four hourly monitoring of cervical dilatation, descent of the fetal head and hourly uterine contractions, the fetal wellbeing that includes hourly fetal heart Monitoring, four hourly checking of whether membranes are intact or ruptured and the state of liquor and molding of fetal skull. The maternal wellbeing which are pulse rate and blood pressure that are monitored and recorded hourly while temperature and urine analysis (volume, protein, and ketones) are being monitored and recorded four hourly⁽⁴⁾.

Competent use of the partograph can save lives by ensuring that labor is closely monitored and life-threatening complications such as obstructed labor is identified and treated. Competency requires that a provider is capable of attending a normal labor and

birth, performing abdominal examinations to determine fetal descent and vaginal examinations to determine cervical dilation, and plotting this information on a graph^(5, 6). However, most parameters on the partograph are not monitored and most health care providers do not document their findings on the partograph after reviewing a woman in labor. Hence the progress of labor may not be closely monitored or labor monitoring may not translate into actions required when need arise⁽⁷⁾.

Objectives:

To assess the knowledge and use of the partograph among obstetric caregivers in monitoring of labor and determine the factors that impede its use among them.

Methodology:-

This is a cross-sectional study with analytic elements. The study was conducted from (1st of May to 31 of August, 2017) in Baghdad. From both sides, AL-Karkh and AL-Resafa sides, a convenient sample of 10 hospitals that contain maternity units selected from 37 hospitals in Baghdad including teaching and non-teaching hospitals.

The study population comprised of all obstetric care givers working in maternity units in the selected hospitals, these included doctors, midwives and nurses who attend labour cases and consented to participate in the study and who were available at the time of interview. Predesigned and structured questionnaire was constructed by the researcher after reviewing relevant literature⁽⁹⁾ to include all possible variables that address the objective of the study.

The questionnaire was designed to obtain information on the socio-demographic and professional

characteristics of obstetric care givers. Awareness about the partograph, its benefit and whether or not they routinely used it in labour monitoring.

The questions included the depth of knowledge of partograph in addition to the knowledge of Observations on partograph like cervical dilatation, fetal heart rate, uterine contraction, descent of the presenting part, maternal (blood pressure, maternal pulse rate, temperature), color of liquor, oxytocin regimen.

After obtaining the official approvals of health authorities the data collection process conducted twice/week for each selected hospital during working hours from 8:30 am to 1:30 pm. Data collection done by direct interview with obstetric care providers using structured questionnaire, after explaining the objectives of the study by the researcher and taking their acceptance to participate in the study which regarded as informed consent. Each interview needed about ten minutes to complete the questionnaire.

Ethical considerations were ensured, every participant was given complete unconditioned choice to participate in the study. Privacy and confidentiality were maintained during interview. All collected data used for research purpose only.

Statistical analysis

Each participant assigned a serial identification number. The data were analyzed using Statistical Package for Social Sciences (SPSS) version (21). The categorical data presented as frequency and percentages tables. The continuous variables were presented as mean, median and standard deviations. Chi-square test was used to assess the association between the categorical variables. P-value less than 0.05

In order to evaluate knowledge of the studied sample about partograph, scoring method was used and 'knowledge score' was obtained by adding up of correct answers to the investigated variables in the questionnaire. Participants level of knowledge of partograph was rated as poor (0-10), fair (11-20) and good (21-30). Awareness of partograph (2), knowledge of its correct definition (3), its benefits (2), and cervical dilatation as an observation on partograph (3), A score of 11-20 was obtained when the participants had his basic knowledge and knew the important observations on partograph such as foetal heart rate (2), uterine contractions (2), descent of the presenting part (2), maternal pulse (2) and maternal blood pressure (2), A score of 20 was obtained when the participants knew almost/all of the observations present in the partograph and knowing its basic knowledge. (8)

Results:- The total number of study participants was 300. The distribution of study participants by socio-demographic characteristics is shown in Table (3.1). Study participant's age was ranging from 21 to 60 years with a mean of 32.9 years and standard deviation (SD) of ± 7.4 years. . All of the study participants were

females. Concerning education, about two thirds of participants had bachelor degree (63.7%). Regarding type of hospital, more than three quarters of study participants (76.3%) were working in teaching hospitals. The highest proportion of study participants was doctors (62.7%) followed by midwives 95(31.7%) and nurses 17 (5.7%). Awareness of partograph and its definition among obstetric care givers was illustrated in Table (2) where the majority of the respondents 97% reported the awareness of partograph. . while the awareness about its definition was stated by 71% of respondents, 93.6% of these were doctors and 37.9 were midwives, however only 33.7% defined the PG correctly, 48.9% were doctors and 9.5% were midwives. Distribution of obstetric care givers who correctly identified the components of partograph used in assessment of labor was shown in Table 3 where most of the respondents 91% (of these 30.8% midwives and 67.8% doctors and 1.5% nurses) identified the cervical dilatation and 86.3% reported the fetal heart (29.3% were midwives, 69.5% were doctors and 1.2% were nurses) and 69.3% (21.6% were midwives, 75.5% were doctors and 2.9% were nurses) mentioned the maternal blood pressure while other components of the partograph were less frequently mentioned. Distribution of obstetric care givers according to the utilization of partograph was shown in Table 4 where more than half of the respondents 58% used the partograph to monitor labor progress. Of these 86.2% reported that they used it routinely.

Same table explain the reasons for not using the partograph where 59.8% of the respondents (who were midwives and nurses) reported it was used by the doctors only

The results of this study demonstrated that 39.7% of the respondents had good knowledge, 39% of them had fair knowledge and only 21.3% had poor knowledge about the partograph. The association of the knowledge about the partograph and the socio-demographic and professional characteristics illustrated in Table (5) where the participants age group between 30-39 (61.3%) showed significant association with the knowledge level ($P=0.001$) and higher level of knowledge seen higher in participants of teaching hospitals (46.3%) than general hospitals with ($P=0.001$), in addition to that significant association shown between the knowledge level and profession where the doctors had higher proportion of good knowledge than (57.4%) in comparison with other participants ($P=0.001$).

Concerning the association of knowledge with years of service, it was found that respondents who practiced less than 5 years had better knowledge (42.1%) with ($P=0.023$), also the participants who previously trained (60.7%) had higher level of knowledge than those who did not, ($P=0.001$).

Respondents years of service, profession and the type of the hospital they worked in showed significant association with utilization of the partograph as demonstrated in Table (6), the use of partograph found to be higher in respondents who practiced less than five years (67%) with (P=0.001), also it was found that there was higher utilization of partograph in teaching hospitals (65.5%) than general hospitals(P=0.001), in

addition to the significant association shown between the use of partograph and the profession where doctors had highest proportion of utilization (91.5%) than midwives and nurses (P=0.001).

It was shown there was significant association between the knowledge and utilization of partograph as seen in Table (7) where participants had good knowledge (60.9%) had higher level of use (P=0.001).

Table 1: Distribution of study participants by socio-demographic characteristics

Variable	No. (n=300)	Percentage (%)
Age (Years)		
Mean ± SD= 32.9 ± 7.4		
< 30	116	38.7
30 - 39	137	45.7
40 - 49	35	11.7
≥ 50	12	4.0
Level of education		
Secondary school	81	27.0
Bachelor degree	191	63.7
Others	28	9.3
Type of hospital		
Teaching	229	76.3
General	71	23.7
Duration of practice on midwifery services (Years)		
< 5	167	55.7
5 - 10	85	28.3
11 - 15	31	10.3
> 15	17	5.7
Attending training courses on partograph		
YES	48	16.0
NO	252	84.0
Profession		
Doctor	188	62.7
Midwives	95	31.7
Nurses	17	5.7

Table 2: Distribution of study participants by profession and awareness about partograph

Variable	Awareness about Partograph		Total (%) n= 300
	YES (%)	NO (%)	
Profession			
Midwife	92 (96.8)	3 (3.2)	95 (31.7)
Nurse	12 (70.6)	5 (29.4)	17 (5.6)
Doctor	187 (99.5)	1 (0.5)	188 (62.7)
Total	291 (97.0)	9 (3.0)	300

Table 3: Distribution of study participants' profession by knowledge of observations on partograph

Observation on Partograph	Profession			Total N (300) (%)
	Midwife No (%)	Nurse No (%)	Doctor No (%)	
Cervical dilatation				
YES	84 (30.8)	4 (1.5)	185 (67.8)	273 (91.0)
NO	11 (40.7)	13 (48.1)	3 (11.1)	27 (9.0)
Foetal heart rate				
YES	76 (29.3)	3 (1.2)	180 (69.5)	259 (86.3)
NO	19 (46.3)	14 (34.1)	8 (19.5)	41 (13.7)
Descent of the presenting part				
YES	23 (15.6)	0 (0)	124 (84.4)	147 (49.0)
NO	72 (47.1)	17 (11.1)	64 (41.8)	153 (51.0)
Maternal blood pressure				
YES	45 (21.6)	6 (2.9)	157 (75.5)	208 (69.3)
NO	50 (54.3)	11 (12.0)	31 (33.7)	92 (30.7)
Maternal pulse				
YES	37 (19.0)	6 (3.1)	152 (77.9)	195 (65.0)
NO	58 (55.2)	11 (10.5)	36 (34.3)	105 (35.0)
Colour of liquor				
YES	45 (23.8)	2 (1.1)	142 (75.1)	189 (63.0)
NO	50 (45.0)	15 (13.5)	46 (41.4)	111 (37.0)
Maternal temperature				
YES	25 (15.9)	2 (1.3)	130 (82.8)	157 (52.3)
NO	70 (49.0)	15 (10.5)	58 (40.6)	143 (47.7)
Oxytocin regimen				
YES	35 (21.3)	1 (0.6)	128 (78)	164 (54.8)
NO	60 (44.4)	16 (11.9)	59 (43.7)	135 (45.2)
Intravenous fluids and drugs				
YES	8 (9.5)	1 (1.2)	75 (89.3)	84 (28.0)
NO	87 (40.3)	16 (7.4)	113 (52.3)	216 (72.0)
Urine test results				
YES	5 (5.3)	0 (0)	89 (94.7)	94 (31.3)
NO	90 (43.7)	17 (8.3)	99 (48.1)	206 (68.7)

Table 4: Distribution of study participants by partograph use

Variable	No. (n=300)	Percentage (%)
Do you use partograph ?		
YES	174	58.0
NO	126	42.0
How often do you use it? N= 174		
Routinely	150	86.2
Sometimes	19	10.9
Occasionally	5	2.9
Reason for not use partograph *		
Used by doctors only	110	59.8
Lack of training	57	31.0
Don't know about it	8	4.3
Work pressure	7	3.8
Don't have desire to use it	2	1.1

* Some of participants had chosen more than one reason.

Table 5: Association between knowledge level and certain participants characteristics

Variable	Knowledge level			Total No 300 (%)	P-Value
	Poor No (%)	Fair No (%)	Good No (%)		
Age Group (Years)					
< 30	27 (23.3)	60 (51.7)	29 (25.0)	116 (38.7)	0.001
30 - 39	14 (10.2)	39 (28.5)	84 (61.3)	137 (45.6)	
≥ 40	23 (48.9)	18 (38.3)	6 (12.8)	47 (15.7)	
Type of Hospital					
Teaching	42 (18.3)	81 (35.4)	106 (46.3)	229 (76.3)	0.001
General	22 (31.0)	36 (50.7)	13 (18.3)	71 (23.7)	
Profession					
Midwife	41 (43.2)	43 (45.3)	11 (11.6)	95 (31.7)	0.001
Nurse	15 (88.2)	2 (11.8)	0 (0)	17 (5.7)	
Doctor	8 (4.3)	72 (38.3)	108 (57.4)	188 (62.6)	
Duration of practice (Years) on midwifery services					
≤ 5	34 (16.8)	83 (41.1)	85 (42.1)	202 (67.3)	0.023
> 5	30 (30.6)	34 (34.7)	34 (34.7)	98 (32.7)	
Attend training courses on partograph					
YES	3 (6.3)	13 (27.1)	32 (66.7)	48 (16.0)	0.001
NO	61 (24.4)	104 (40.8)	87 (34.8)	252 (84.0)	
Desire to use Partograph					
YES	63 (21.1)	117 (39.3)	118 (39.6)	2 (0.7)	0.44
NO	1 (50.0)	0 (0)	1 (50.0)	298 (99.3)	

Table 6: Association between using partograph and certain participants characteristics

Variable	Using Partograph		Total (%) n= 300	P-Value
	YES (%) n= 174	NO (%) n= 126		
Age (Years)				
< 30	65 (56.0)	51 (44.0)	116 (38.7)	0.11
30 - 39	87 (63.5)	50 (36.5)	137 (45.6)	
≥ 40	22 (46.8)	25 (53.2)	47 (15.7)	
Profession				
Nurse / Midwife	2 (1.8)	110 (98.2)	112 (37.3)	0.001
Doctor	172 (91.5)	16 (8.5)	188 (62.7)	
Type of Hospital				
Teaching	150 (65.5)	79 (34.5)	229 (76.3)	0.001
General	24 (33.8)	47 (66.2)	71 (23.7)	
Years of midwifery services (Years)				
≤ 5	137 (67.8)	65 (32.2)	202 (67.3)	0.001
> 5	37 (37.8)	61 (62.2)	98 (32.7)	
Previous training				
YES	31 (64.6)	17 (35.4)	48 (16.0)	0.313
NO	143 (56.7)	109 (43.3)	252 (84.0)	
Desire to use Partograph				
YES	0 (0)	2 (100.0)	2 (0.7)	0.095
NO	174 (58.4)	124 (41.6)	298 (99.3)	

Table 7 : Association between knowledge level and use of partograph

Use of Partograph	Knowledge level			Total No 300 (%)	P-Value
	Poor No (%)	Fair No (%)	Good No (%)		
YES	5 (2.9)	63 (36.2)	106 (60.9)	174 (58.0)	0.001
NO	59 (46.8)	54 (42.9)	13 (10.3)	126 (42.0)	

Discussion:-

The analysis of socio-demographic characteristics of the participants showed that more than two thirds of the interviewed obstetric care givers were doctors and the other one third comprised of midwives and nurses where most of them graduated from nursing secondary schools, their average age was (32.9+7.4) years while their mean age of practice in midwifery services was found to be about five years. Our study sample were in agreement with findings reached by previous study conducted in Egypt⁽⁹⁾.

Although the current study showed that nearly all respondents were aware about the partograph, but less than half of the doctors(48.9%) and very small percentage of midwives (9.5%) knew the correct definition. these results coincided with other workers^(10,11).

With regard to overall knowledge of partograph, the study revealed that more than three quarters of respondents had fair to good level of knowledge, similar figure was reported by workers elsewhere^(3,10).

These findings support the significant association that is found between the profession and the knowledge where more than half of the doctors(57.4%) had good level of knowledge compared to the midwives (11.6%), this disparity may be due to that the doctors had better chances of training whether basic or in-service training. This is against other studies where there is no statistical association of profession with knowledge of partograph^(13,14).

The depth of knowledge about the partograph evaluated by analysis of its components that identified by obstetric care providers where the cervical dilatation and fetal heart rate reported by the majority of obstetric care providers(91% and 86.3) respectively but other components like the maternal vital signs, color of liquor, urine test results, oxytocin regimen mentioned more frequently by the doctors than other obstetric care givers which coincide with studies from Ethiopia^(14,15).and Kenya⁽¹⁶⁾,Where the cervical dilatation and fetal heart rate were most frequently reported than other components.

The positive association between the previous training and the knowledge about the partograph that is found in studies from South Africa⁽¹⁷⁾ and Tanzania⁽¹⁸⁾ goes with the result of current work that demonstrated significant association of knowledge with the previous training in which the obstetric care givers who were previously trained were able to explain the components of the partograph better than untrained workers.

The present study demonstrated significant association between the type of hospitals and the knowledge about the partograph which is in correspondence with study from Gambiawhich showed significant association between the level of knowledge and type of health institution⁽¹⁹⁾this is might be due to that obstetric care personnel in teaching hospitals had more contact with obstetricians so they can update their information and knowledge during the daily morning meetings and seminars with these obstetricians, this type of activity did not present in general hospitals in which there is shortage of the staff (doctors, midwives) in addition to the differences in educational level of obstetric care Providers that determines their knowledge.

Concerning the use of the partograph by obstetric care givers, the study revealed that doctors only allowed to use the partograph, of these (58.4%) reported the utilization of the partograph, same results were reported by other workers where more than half of medical personnel used the partograph irrespective of their profession^(10,15,7).

The years on midwifery services for less than five years found to be significantly associated with partograph utilization, that means the accumulated experience and work in obstetric departments did not improve the performance of obstetric care givers regarding the use of partograph. This goes with study in Niger Delta Region of Nigeria Which illustrated significant relationship between the utilization and years of service⁽¹²⁾. Regarding the maternity hospitals where the partograph used, it was found that doctors working in teaching hospitals used the partograph more frequently than those working in general hospitals, this is due to lack of training on its use and lack of time for documentation because of work overload and negligence of obstetric care providers making the obligation to use partograph in following up of labour progress necessary to improve the outcomes of labour, this finding was in keeping with results of other authors work which demonstrated significant association between the type of health institution and utilization of the partograph^(10,13).

Despite that current study showed significant relation between the knowledge and utilization of partograph there was a gap between the overall knowledge which was shown to be good and use of

partograph which was used only by more than half of the doctors(58.4%) that enrolled in the study, the reasons behind its limited use is that partographic use still confined to the doctors only who also exhibited different level of knowledge and it was not used by midwives who had clear deficiency in the information and practice on the use of partograph in addition to the shortage of the staff in maternity hospitals and work pressure that affect the documentary monitoring of labour. This finding was in parallel with studies in Ethiopia^(13,20) which demonstrated discrepancy between the knowledge and utilization of partograph among obstetric care providers^(13,20).

Conclusion: The study revealed that nearly all the participants (doctors, midwives and nurses) knew what the partograph was and the majority of obstetric providers of care had good knowledge about the partograph while its use confined to the doctors only that more than half of them reported its use in addition to higher knowledge and use of partograph in teaching than general hospitals.

References

- 1-World Health Organization. The partograph: An essential tool to make decision during labor. Maternal and neonatal health. Best practices; 2002.
- 2-Fraser DM, Cooper MA, Nolte AGW (2009).Myles Textbook for Midwives.African Edition. Churchill Livingstone. Elsevier.
- 3-Fawole AO, Hunyinbo KI, Adekanle DA: Knowledge and Utilization of the Partograph among obstetric care givers in South West Nigeria. AfrReprod Health 2008, 12:22–29.
- 4-Lavender T, Hart A. Effect of partogram use on outcomes for women in spontaneous labor at term (Review). Cochrane Database Syst Rev. 2012; 8: CD005461.
- 5-World Health Organization.Preventing prolonged labor: a practical guide.The partograph.Maternal Health and safe motherhood program, division of family health. Part I, 1211.1.27, 1994
- 6-World Health Organization .Maternal,newborn,child and adolescent health. Nurturing care for early childhood development :a framework for action and results .Engagement and consultations from August 2017 to March 2018.WHO 2018.
- 7-Margaret K. Use and documentation of partograph in urban Hospitals in Lilongwe- Malawi health workers' perspective.University of Oslo, Faculty of Medicine; Institute of Health hand Society; 2012.
- 8-Yisma E, Dessalegn B, Astatkie A, Fesseha N. Completion of the modified World Health Organization (WHO) partograph during labour in public health institutions of Addis Ababa, Ethiopia. Reproductive health. 2013 Dec;

9-Salama NS, Allah IM, Heeba MF. The partograph: knowledge, attitude, and utilization by professional birth attendances in Port-Said and Ismailia cities. *The Medical Journal of Cairo University*. 2010; 78(2):165-174.

10-Onah HE, Umezulike AC, Okaro JM. Use of the partograph among medical personnel in Enugu, Nigeria. *Int.J.Gynaecol. Obstet.* 1999;65(2):203-205

11-Bazirete O, Mbombo N, Adejumo O. Utilisation of the partogram among nurses and midwives in selected health facilities in the Eastern Province of Rwanda. *AOSIS*. 2017; vol 40, no.1.

12-Opiah M, Bola A, James E. Knowledge and Utilization of the Partograph among Midwives in the Niger Delta Region of Nigeria. *African Journal of Reproductive Health* March 2012; 16(1): 125

13-Zelellw DA, Tegegne TK, Getie GA. Knowledge and Attitude of Obstetric Care Providers on Partograph and Its Associated Factors in East Gojjam Zone, Northwest Ethiopia. *Advances in medicine*. 2016; 2016; Article ID 6913165, 8 pages

14-Abebe F, Birhanu D, Awoke W, Ejigu T. Assessment of Knowledge and Utilization of the Partograph among Health Professionals in Amhara Region, Ethiopia. *Science Journal of Clinical Medicine*. 2013, Vol. 2, No. 2, pp. 2

15-Wakgari N, Amano A, Berta M, Assefa G. Partograph utilization and associated factors among obstetric care providers in North Shoa Zone, Central Ethiopia: a cross sectional study. *BMC RES Notes* (2015) 8:407.

6-42.

16-Qureshi ZP, SekaddeKigonda C, Mutiso SM. Rapid assessment of partograph utilization in selected maternity units in Kenya. *East African Medical Journal*. 2010; 87(6):235-41.

17-Adekanle DA, Fawole AO, Hunyinbo KI. Utilization of the partograph in primary health care facilities in southwestern Nigeria. *Niger J Clin Pract.* 2010; 13(2):200-204.

18-Nyamtema AS, Urassa DP, Massawe S, Massawe A, Lindmark G, Van Roosmalen J: Partogram use in the Dar es Salaam perinatal care study. *Int J Gynecol. Obstet.* 2008, 100:37-40.

19-Badjie B, Kao CH, Gua ML, Lin KC. Partograph use among Midwives in the Gambia. *African Journal of Midwifery and Women's Health*. 2013; 7(2):65-9.

20-Watson S. An exploratory study into a methodology for the examination of decision making by nurses in the clinical area. *Journal of advanced nursing*. 1994 Aug 1; 20(2):351-60.