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ORIGINAL RESEARCH

Analyzing Nurses Midwives' Experience and its Influence on Knowledge and Performance in Postpartum Hemorrhage Management

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ABSTRACT

Background: Postpartum hemorrhage (PPH) stands as the foremost contributor to maternal mortality rates worldwide. It represents the most prevalent form of obstetric hemorrhage, with even healthy mothers facing potential fatality within a mere two-hour window if PPH remains undetected. This study explores the correlation between the professional experience, Knowledge, and Performance of nurses/midwives concerning postpartum hemorrhage.

Objectives: The study aimed to assess routine management of the third and fourth stages of labour after vaginal deliveries, identify gaps in clinical care, and evaluate obstetric care providers' Knowledge and Performance in preventing PPH at the Maternity Teaching Hospital in Sulaimani City.

Methodology: Sixty nurses/midwives stationed in the delivery room and postpartum ward of a maternity teaching hospital in Sulaimani, Iraq, participated in a descriptive (correlational) research endeavor. Data collection spanned six consecutive months, from September 2021 to April 2022, employing an observation checklist and a self-administered questionnaire.

Results: The study findings reveal a statistically significant correlation between Knowledge and Performance, the duration of service (experience) in the delivery room, and the cumulative years of service, as evidenced by a p-value lower than the standard alpha of 0.05.

Conclusion: The results denote a statistical nexus between overall Knowledge and Performance and the duration of service and experience in the delivery room.

Recommendation: Based on these findings, it is recommended that nurses/midwives with extensive professional experience and robust Knowledge of PPH be assigned to the delivery room and postpartum department, as this approach holds promise for reducing PPH incidence rates.

Keywords: Postpartum hemorrhage, Nurses/midwives' professional experience related to PPH, active management of the third stage of labour.

INTRODUCTION

Postpartum hemorrhage is an obstetrical emergency that develops following a vaginal or cesarean delivery. One of the primary causes of maternal death worldwide, postpartum hemorrhage affects 1 to 5 % of deliveries. Primary PPH is characterized by excessive bleeding in the first 24 hours after childbirth. Uterine atony is the main source of primary bleeding. Additional causes include retained placenta, perineum or birth canal injuries,

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uterine rupture, uterine inversion, and coagulation problems by Abd-Elgany, L. K. … etal. (2019).

PPH is 500 milliliters of blood lost after vaginal delivery and 1000 milliliters of blood lost after cesarean delivery, according to the World Health Organization by Wei, Q., & Zhang, L., (2020). PPH is occasionally misdiagnosed, particularly in cases where blood loss happens gradually. Because of this, the amount of blood lost after birth is overestimated. These factors suggest that a more realistic diagnosis of PPH would be any level of bleeding that exacerbates the woman's symptoms (such as low systolic blood pressure, a fast heartbeat, or signs of shock), Aflaifel, N. (2015). The latest FIGO PPH prevention and therapy guidelines also support this concept FIGO., (2022). One of the additional diagnostic criteria for the definition of PPH is a hematocrit drop of more than 10% from the antepartum level, resulting in signs and symptoms of hypervolemia and necessitating a blood transfusion. However, since abrupt blood loss may occur before a fall is observed, hemoglobin concentration fluctuations are not a clinically useful definition Yefet, E., … etal. (2020).

PPH is a potentially deadly illness that needs experienced professionals to recognize changes in the patient's condition. Care for postpartum hemorrhage may be delayed due to labour and delivery nurses' frequent miscalculations of blood loss after birth. Appropriate diagnosis and therapy may take longer if symptoms are not adequately described and communicated to the clinician promptly. Therefore, the effective treatment of postpartum women with PPH depends on the early diagnosis of blood loss and clinical symptoms Bahaaldeen, E., (2019).

The nurse is vital in supporting the woman and her family, educating her about her situation, monitoring her condition and assisting with hemorrhage control techniques. The woman's safety has to be the top priority. The nurse is aware of the woman's medical history, the status of her labour, and the factors that increase her risk of postpartum hemorrhage. Note any oxytocin used to induce or assist labour, as well as any painkiller or anesthetic administered during labour and delivery. This information helps identify potential risk factors for the woman's hemorrhaging Ahmed, & Bhalerao,. (2017).

In other duties, such as keeping an eye out for any blood loss, assessing the length of a typical third stage and the exact moment of placenta delivery, the midwife and nurse should also consider the overall well-being of both the woman and her child, including the midwife's role in the physiological birth of the placenta, teaching women about the specifics of labour and delivery, and assisting them in adjusting to life after giving birth to a child Mamakou, A. (2020).

AIMS OF THE STUDY

The study aimed to assess routine management of the third and fourth stages of labour after vaginal deliveries, identify gaps in clinical care, and evaluate obstetric care providers' Knowledge and Performance in preventing PPH at the Maternity Teaching Hospital in Sulaimani City.

METHODOLOGY

Design of the study:

A descriptive (correlational) research design was employed throughout the study to find the relationship between nurses/midwives' professional experience and Knowledge and Performance about postpartum hemorrhage.

Study sample:

In a non-probability sample (convenient sample), 60 nurses/midwives working in the delivery rooms and the postpartum department of the maternity teaching hospital in Sulaimani City were selected.

Eligibility criteria:

Specific **inclusion criteria** were used to recruit nurses/midwives for the study, such as those responsible for providing nursing care in the labour

and delivery and postpartum departments, All levels of nursing education, Nurses/midwives' who had at least six months of experience and above in the delivery room, and **exclusion criteria** included Nurses/Midwives' who had an administrative role only as the head nurses, The nurses/midwives who were not available during the period of data collection, The nurses/midwives who did not agree to participate in this study.

Data collection procedure:

The researcher collected data throughout the morning and evening shifts to complete the checklist during the third and fourth stages of labour in the delivery room and postpartum department. Data was gathered over six months, beginning in September 2021 and ending in April 2022. Various stages of the ongoing investigation:

1- Observation:

The researcher started with an observation at first. Without the nurses/midwives' awareness, the researcher observed each nurse/midwife' in both departments (delivery room and postpartum department) twice. The researcher created a checklist based on WHO and Royal College guidelines and previous research. The checklist covered how nurses/midwives manage the third and fourth stages of labour and how to implement active management of the third stage. It was divided into five categories, which were as follows: (Administration of the uterotonic drug, Cord clamping and managing uterine contraction, Controlled Cord Traction (CCT), Managing resistance to CCT, and Postpartum management). If the nurse performed the practice correctly, the researcher would mark it "done correctly" on the checklist; if the nurse performed the practice incorrectly, the researcher would mark it "failed incorrectly", and if she didn't do what was necessary for the mother, the researcher would record "not done.

The scoring system for measuring practical levels:

Number of questions	40
Total scores	80
Range	0-80
Min	0
Max	80
Poor	(<50%) 0-39
Fair	(≤50% - <75%) 40-59
Good	(≥75%) 60-80.

2- A self-administered questionnaire:

It was created by the researcher through a review of the literature and previous studies.

Part one contained socio-demographic information, like (age, level of education, years of experience,…. etc.).

The second part is The Knowledge of PPH, subdivided into sixteen single-choice questions. The Knowledge of PPH of nurses/midwives was assessed using 16 questions focusing on Knowledge of PPH. Each response was evaluated as either 'correct' or 'incorrect,' with a total sample size of 60. The knowledge scores of the nurses and midwives were subsequently calculated. The scoring range of the questionnaire was 16 (maximum) to 0 (minimum). The correct Knowledge was marked as (1), while the wrong Knowledge was marked as (0). The scale of Knowledge of nurses/midwives' was classified as poor Knowledge (<50%) with a score (0–7), Fair Knowledge: (50% - < 75%) with a score (8–11) and good knowledge (≥ 75%) with a score (12-16).

Statistical analysis:

Once the data were gathered, all data entered was used by computerized statistical software; Statistical Package for Social Science (SPSS) version 22 was used.

P-value: there were criteria of probability levels to determine the significance of the test:

- Highly significant ($p \leq 0.001$)
- Significant ($p \leq 0.05$)
- No significant ($p > 0.05$).

RESULTS

Table (1) shows the socio-demographic characteristics of nurses/midwives in the study

sample. The majority of the participants were less than 30 years old (43.3%), and only 38.3% were more than 40 years old. Regarding education, the majority of the nurses/midwives graduated from the midwifery institute (56.7%), while (1.7%) graduated from nursing school. Most study participants (73.3%) were married, and only (21.7%) were single. The majority of the employment was contract reaching (61.7%) and also only (38.3%) were government, and 71.7%) of the nurses/midwives' did not have an extra job in private hospitals.

Table (2) represents the distribution of nurses/midwives' total service years & number of years of service (experience) in the delivery room among the study sample. (55%) of nurses/midwives' had less than 5 years of service (experience) in the delivery room (26.7%) of the participants had more than 10 years of service (experience) in the delivery room, and only (18.3%) of the nurses/midwives' had between 5-10 years of service (experience) in the delivery room. Moreover, (51.7%) of nurses/midwives' had more than 10 years of total services (33.3%) of the participants had less than 5 years of total services and only (15%) of the nurses/midwives' had between 5-10 years of total services.

Table (3) shows overall Knowledge and Performance regarding the PPH. 76.7% of nurses/midwives' had poor Knowledge of PPH, respectively, 23.3% of the participants had fair Knowledge of PPH, and 0.0% of the nurses/midwives' had good Knowledge of PPH. Regarding Performance, 85% of nurses/midwives had poor Performance, 15.0% of the participants had fair Performance, and 0.0% of the nurses/midwives had good Performance.

Table (4) shows the association between overall Knowledge of PPH and nurses/midwives' total service years & number of years of service (experience) in the delivery room. The results show a statistically significant association between knowledge PPH and the number of years of service (experience) in the delivery room number of years of total services because the result of the p-value was less than the standard alpha 0.05.

Table (5) shows the association between Performance and nurses/midwives' total service years & number of years of service (experience) in the delivery room. The results show a statistically significant association between Performance and the number of years of service (experience) in the delivery room and the total number of years of service because the result of the p-value was less than the typical alpha 0.05.

DISCUSSION:

Sixty nurses/midwives were enrolled in the current study. The majority of the study group were under 30 years old (43.3). This result shows that most of those working in the labour ward and postpartum department are young, which is encouraging that they are more able to work than those older. This distribution is close to the results of a study conducted by Abdelwahed, & Farahat, (2022), which shows that the majority of participants are between the ages of 21 and 30. At the same time, the study by Ramavhoya, et al. (2021) shows the opposite result, with the majority of participants between 40-49 years old. More than half (56.7) of the nurses/midwives' had technical institute education, and only one had a nursing school degree. This is a pleasant result, as only one person holds a primary degree, and most of them are midwife graduates with diplomas. Muzeya, F., & Julie, H. (2020) showed the same results in their study, with most of the participants having a diploma in midwifery.

Regarding nurses/midwives' marital status, the study findings indicated that most (73.3%) are married. These findings regarding marital status were in line with the study's results, which were conducted by El-Khawaga, et al., (2019) mostly married people. However, the study conducted by Adane, et al., (2019) differs from our results in that most participants are single.

According to the employment in the current study, more of them were contracted, contracts they were newly graduated, mainly from an institute, and they should be assistants to the old nurses/midwives in caring for mothers. More than a quarter (28.3) have an extra job in Private hospitals. Working in private hospitals places a lot of pressure on the nurse or midwife, which affects the type of service she provides to her cases; this distribution is approximately on the same line with the previous study done by Ahmed, et al.,(2018), which showed that 36.7% of the study sample work in a private hospital.

In this study, more than half of the participants in the study group had less than five years of experience in the delivery room. Still, the majority of them have more than ten years of total service; similarly, A quasi-experimental study done by Ali, A. H., & Bahaaldeen, E. F. (2019), concluded that (57.7) of the participants (1-5) years of experience in the delivery room. Still, unlike our results, most have five years of total service or less.

This study assessed the overall Knowledge level and the nurses/midwives' Performance. The results indicated that the overall Knowledge of nurses/midwives was at a poor level (76.7%) in Knowledge about PPH and their Performance (85.0). This lack of information is due to several reasons: the nurses/midwives' do not develop and update their knowledge continuously; most nurses/midwives who work in health institutions quit book reading, so they do not follow up and only indulge in their practices; consequently, they became unable to remember some information particularly the Knowledge that related to the management of the stage of labour and lack follow-up by the supervisory authorities. In the same direction as this study, a quasi-experimental design study by Bahaaldeen, E. (2019), showed that the Knowledge of nurses/midwives' toward the prevention of PPH was found to be at a low level and accounted for (37.47%) in all knowledge-related questions. Also, Angelina & Mwampagatw, (2019) and Niazi, (2020) found that most nurses had inadequate Knowledge and hands-on practical skills in PPH prevention and management. However, 18 disagreed with the result of our study; more than half of the study nurses had good Knowledge about PPH. Our study result differed from studies conducted in the Netherlands (48%) and Nigeria (42%), which had good practices, respectively Prick, et al., (2013) and Oladapo, et al., (2009). The findings concluded that there is a statistically significant association between overall Knowledge and number of years of service and experience in the delivery room. Also, Ahmed Elkholy, et al., (20217) showed that the majority of participants had more than 10 years of experience. Still, in contrast to the result of our study, they found no significant association between years of experience and Knowledge about PPH. The current study also showed a significant association between the number of total services and Knowledge about PPH. The findings concluded that there is a statistically significant association between Performance and number of years of total services and experience in the delivery room.

CONCLUSIONS:

The study concluded that most nurses / midwives had more than ten years of service and less than five years of experience in the delivery room. Also, the study findings indicated a significant association between the number of years of total services and expertise in the delivery room and Knowledge of PPH and Performance.

RECOMMENDATIONS:

This study recommended that regular educational program, annual tests for the knowledge and performance of the nurses/midwives and follow-up would raise their knowledge and performance in their work setting.

FUNDING: No funding sources.
CONFLICT OF INTEREST: None declared.

ETHICAL APPROVAL: The study received approval from the institutional ethics committee.

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TABLES:

Table (1): Distribution of socio-demographic characteristics for nurses/midwives among the study sample

Socio-Demographic		Frequency	%
Age (years)	< 30	26	43.3
	31 – 40	11	18.3
	> 40	23	38.3
	Mean ± S.D	30.47 ± 9.46	
Level of education (graduated)	Nursing School	1	1.7
	Secondary Nursing	4	6.7
	Secondary Midwifery	7	11.7
	Nursing Institute	7	11.7
	Midwifery Institute	34	56.7
	College of Nursing	7	11.7
	Master and more	0	0.0
Marital Status	Single	13	21.7
	Married	44	73.3
	Separated or Widow	3	5
Employment	Government	23	38.3
	Contract	37	61.7
Are you having an extra job in a Private hospitals?	No	43	71.7
	Yes	17	28.3
	Total	**60**	**100**

Table (2): Distribution of nurses/midwives' total service years & number of years of service (experience) in the delivery room among the study sample

Service years & Training course		Frequency	%
Number of years of service (experience) in the delivery room	**< 5**	33	55.0
	5 – 10	11	18.3
	> 10	16	26.7
Mean ± S.D		8.19 ± 8.51	
Number of years of total services.	**< 5**	20	33.3
	5 – 10	9	15.0
	> 10	31	51.7
Mean ± S.D		13.54 ±10.23	

Table (3): Overall Knowledge, PPH, and Performance Distribution.

Levels	Items	Overall Knowledge PPH	Overall Performance
Poor	Fr.	46	51
	%	76.7	85.0
Fair	Fr.	14	9
	%	23.3	15.0
Good	Fr.	0	0
	%	0.0	0.0
Total	Fr.	60	60
	%	100	100

Table (4): The association between Knowledge of PPH and nurses/midwives' total service years & number of years of service (experience) in the delivery room

Items		Knowledge of PPH			P- value
		Poor	Fair	Good	
		Fr. (%)	Fr. (%)	Fr. (%)	
Number of years of service (experience) in the delivery room	< 5	29 (63)	4 (28.6)	0 (0.0)	0.001
	5 – 10	10 (21.7)	1 (7.1)	0 (0.0)	
	> 10	7 (15.2)	9 (64.3)	0 (0.0)	
Number of years of service. (Years)	< 5	20 (43.5)	0 (0.0)	0(0.0)	0.002
	5 – 10	8 (17.4)	1 (7.1)	0(0.0)	
	> 10	18 (39.1)	13 (92.9)	0(0.0)	

Table (5): shows the association between Performance and nurses/midwives' total service years & number of years of service (experience) in the delivery room

Items		Performance			P-value
		Poor	Fair	Good	
		Fr. (%)	Fr. (%)	Fr. (%)	
Number of years of service (experience) in the delivery room	< 5	31(60.8)	2(22.2)	0(0.0)	0.013
	5 – 10	10(19.6)	1(11.1)	0(0.0)	
	> 10	10(19.6)	6(66.7)	0(0.0)	
Number of years of total services. (Years)	< 5	20(39.2)	0(0.0)	0(0.0)	0.039
	5 – 10	8(15.7)	1(11.1)	0(0.0)	
	> 10	23(45.1)	8(88.9)	0(0.0)	