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Nurse's Knowledge Regarding Active Management of The Third Stage of Labor to Control Postpartum Hemorrhage

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Abstract

Background: Postpartum hemorrhage is a leading cause of maternal mortality and morbidity globally. The third stage of labor begins after the baby is born and ends with the delivery of the placenta. During this stage, the uterus needs to contract effectively to prevent excessive bleeding. Active Management of the Third Stage of Labor was introduced as a strategy to reduce the risk of postpartum hemorrhage. The study aimed to investigate nurses' knowledge of active management of the third stage of labor to control postpartum hemorrhage and investigate associated factors.

Results: The study examined participant characteristics, revealing an average age of 35.93 (SD=8.52). Around 65.0% of nurses in the study had graduated from preparatory nursing. Most nurses (56.7%) had 5-10 years of hospital experience. A majority (65.0%) worked in postpartum areas. Over half (58.3%) had 4-6 years of experience without training. The study evaluated nurses' knowledge of active management of the third stage of labor, with responses on a scale ranging from 37-64. The overall expertise indicates that 75.0% of nurses needed a better understanding. The results highlighted that factors like nurses' education level (p= .024) and training courses (p= .041) predicted their knowledge of active management of the third stage of labor.

Conclusions: The study found that nurses' knowledge of active management of the third stage of labor varied, overall indicating a poor understanding of nurses. The results highlighted significant predictors of this knowledge, including education level and participation in training courses. To enhance nurses' proficiency in active management of the third stage, it is recommended to focus on targeted educational programs and regular training opportunities.

معرفة الممرضات فيما يتعلق بالإدارة الفعالة للمرحلة الثالثة من المخاض للسيطرة على نزيف ما بعد الولادة

نور علي محمد، ساجدة سعدون عليوي

الملخص

الخلفية

النزيف ما بعد الولادة هو أحد الأسباب الرئيسية لوفيات ومراضة الأمهات على مستوى العالم. يبدأ المرحلة الثالثة من الولادة بعد ولادة الطفل وتنتهي مع ولادة المشيمة. خلال هذه المرحلة، يحتاج الرحم إلى الانقباض بفعالية لمنع النزيف المفرط. تم تقديم الإدارة النشطة للمرحلة الثالثة من الولادة كاستراتيجية للحد من خطر النزيف ما بعد الولادة. هدفت هذه الدراسة إلى التحقيق في معرفة الممرضات بالإدارة النشطة للمرحلة الثالثة من الولادة للتحكم في النزيف ما بعد الولادة ودراسة العوامل المرتبطة بذلك.

النتائج

فحصت الدراسة خصائص المشاركين، وكشفت عن متوسط عمر يبلغ ٣٥,٩٣ عامًا (الانحراف المعياري=٨,٥٢). حوالي ٦٥,٠٪ من الممرضات في الدراسة تخرجن من برامج التمريض التحضيرية. معظم الممرضات (٥٦,٧٪) لديهن خبرة في المستشفى تتراوح بين ٥-١٠ سنوات، و٦٥,٠٪ منهن يعملن في مناطق ما بعد الولادة. أكثر من نصف الممرضات (٥٨,٣٪) لديهن خبرة تتراوح بين ٤-٦ سنوات بدون تدريب إضافي. تم تقييم معرفة الممرضات بالإدارة النشطة للمرحلة الثالثة من الولادة على مقياس يتراوح بين ٣٧-٦٤. أشارت النتائج الإجمالية إلى أن ٧٥,٠٪ من الممرضات لديهن فهم غير كافٍ للإدارة النشطة للمرحلة الثالثة من الولادة. أظهرت النتائج أن العوامل مثل مستوى تعليم الممرضات (p = .024)والدورات التدريبية (p = .041) كانت تتنبأ بمعرفتهن بالإدارة النشطة للمرحلة الثالثة من الولادة.

الاستنتاجات

وجدت الدراسة أن معرفة الممرضات بالإدارة النشطة للمرحلة الثالثة من الولادة متباينة، مما يشير بشكل عام إلى فهم ضعيف لدى الممرضات. أبرزت النتائج العوامل الهامة التي تتنبأ بهذه المعرفة، بما في ذلك مستوى التعليم والمشاركة في الدورات التدريبية. لتحسين كفاءة الممرضات في الإدارة النشطة للمرحلة الثالثة، يُوصى بالتركيز على البرامج التعليمية الموجهة وفرص التدريب المنتظمة.

1.Introduction

The active management of the third stage of labor (AMTSL) is a critical obstetric intervention aimed at preventing postpartum hemorrhage (PPH), which is a leading cause of maternal mortality and morbidity worldwide (Bishanga *et al.*, 2018). Nurses play a vital role in implementing and overseeing AMTSL to effectively control PPH and ensure the well-being of both the mother and the newborn (Ramesh *et al.*, 2018). The third stage of labor begins after the baby's delivery and concludes with the delivery of the placenta and its associated membranes (Essa and Ismail, 2015). AMTSL involves a set of coordinated interventions designed to expedite the delivery of the placenta, minimize blood loss, and reduce the risk of PPH. This proactive approach includes administering uterotonic medications, controlled cord traction, and uterine massage(Jonas *et al.*, 2017).

Nurses at the forefront of patient care during childbirth possess a crucial understanding of AMTSL. They are well-versed in administering uterotonic agents, such as oxytocin or misoprostol, which stimulate uterine contractions, thereby aiding in the prompt separation and expulsion of the placenta(Altraigey *et al.*, 2019). Nurses are skilled in monitoring the mother's vital signs and uterine contractions to gauge the effectiveness of these medications and ensure the prevention of excessive bleeding (Ramesh *et al.*, 2018). Additionally, nurses are knowledgeable about controlled cord traction, a technique employed to facilitate the controlled removal of the placenta. This technique reduces the risk of uterine atony and retained placental fragments, which can contribute to PPH. By employing controlled cord traction, nurses can assist in delivering the placenta while ensuring minimal blood loss(Ramavhoya, 2018). Uterine massage is another component of AMTSL that nurses are well-informed about. After the placenta is delivered, nurses gently massage the uterus to enhance uterine contraction, thereby reducing the risk of postpartum bleeding. This massage aids in promoting uterine tone and preventing atony, a primary cause of PPH(Ramavhoya, 2018). Nurses' knowledge of AMTSL extends beyond the procedural aspects. They understand the importance of clear communication with the mother, involving her in decision-making, and providing reassurance throughout the process. Nurses can identify potential complications or deviations from the norm, enabling timely interventions to prevent or manage excessive bleeding(Abisogun, 2019). Nurses are a cornerstone of successful AMTSL implementation and are pivotal in preventing postpartum hemorrhage. Their comprehensive understanding of the procedure, medications, techniques, and patient communication ensures that childbirth is a safe and positive experience for both the mother and her newborn. By effectively applying their knowledge of active management of the third stage of labor, nurses contribute significantly to maternal well-being and reduce the incidence of postpartum hemorrhage.

2. Methods

2.1 Study Design

To fulfill the objectives of this study, a quasi-experimental research design was employed. This design incorporated an adopted pre- and post-test methodology for both the study and control groups. The study was conducted from December 1st, 2021, to July 3rd, 2022.

2.2 Study Instruments

The questionnaire is valuable for gathering essential data to achieve the study's anticipated outcomes. In pursuit of this, the researcher has meticulously crafted this questionnaire to elucidate the study's aims and significance. This is achieved by systematically obtaining responses to the core inquiries posed by the study.

The questionnaire comprises two distinct sections, each tailored to gather data from participants involved in the study efficiently. The initial section captures socio-demographic variables such as age, educational attainment, years of experience, familiarity with labor wards, and participation in training sessions.

Concurrently, the subsequent section delves into assessing the participants' comprehension of the Active Management of the Third Stage of Labor for the Control of Postpartum Hemorrhage. The researcher meticulously constructed this segment after an exhaustive review of pertinent literature. The section encompasses 35 multiple-choice questions designed to gauge participants' knowledge. Stringent adherence to established guidelines in questionnaire design was maintained to ensure the richness and comprehensiveness of the information obtained. The researcher placed particular emphasis on crafting precise questions devoid of ambiguity, thus enabling trustworthy and insightful responses.

The questions were structured in a closed format to facilitate clarity and ease of response. Respondents are prompted to answer while referencing relevant and appropriate information. This approach ensures that the data collected is reliable and relevant, facilitating a robust analysis of the research problem.

2.3 Study Sitting

The study was undertaken at the Obstetrics and Gynecology Teaching Hospital in Karbala Province Holy, which was strategically selected as the primary site for data gathering to ensure the acquisition of accurate and exhaustive data.

2.3 Validity

Although the scales are valid, the questionnaire was forwarded to 9 experts in problem-related specializations from several colleges in Iraq using a content validity approach to make it more valid.

2.4 Pilot Study

This pilot study was undertaken to evaluate the research tool's reliability, clarity, effectiveness, and consistency, all of which were confirmed. Additionally, it aimed to estimate the average time required for data collection per subject through interview processes and identify potential difficulties.

3. Reliability of the Questionnaire:

Reliability of study tools refers to their ability to yield consistent results when used repeatedly with the same individuals over time. A random sample of 10 nurses participated in a test-retest reliability assessment without awareness of their role as a stability gauge for the tool. Notably, these individuals were excluded from the primary study sample. As demonstrated below, the Cronbach's Alpha coefficient was utilized to calculate the confidence level.

4. Sample of the Study

A purposive non-probability sampling method was employed to select a cohort of 60 nurses, ensuring representative and precise data acquisition.

4.1 Criteria for Sample Selection

4.2 Inclusion criteria

Nurses who have scored below 60% in the assessment are eligible.

4.3 Exclusion Criteria

Nurses who are selected for the pilot study

4.4 Data Collection Methods

The implementation phase extended from January 5th, 2022, to April 29th, 2023.

5. Statistical Data Analysis:

5.1 Data Analysis

The data were analyzed and interpreted using the application of Statistical Package for Social Sciences (SPSS), version 26.

6. Results

Table 1: Distribution Of Study Sample by Their Socio-Demographic Variables (SDVS)

SDVs	Classification	No.	%
Age	20-29 years old	26	43.3
	30-39 years old	18	30.0
	40-49 years old	13	21.7
	50 and older	3	5.0
	M ± SD	**35.93 ± 8.52**	
Education Level	School nursing	4	6.7
	Preparatory nursing	39	65.0
	Diploma nursing	16	26.7
	BSc. Nursing	1	1.7
Experience in Hospital	<5 years	15	25.0
	5-10 years	34	56.7
	>10 years	11	18.3
Workplace	Maternity	21	35.0
	Postpartum	39	65.0
Experience in Workplace	1-3 year	20	33.3
	4-6 years	35	58.3
	>6 years	5	8.3
Training Courses	Yes	25	41.7
	No	35	58.3

***No.= Number; %= Percentage**

The study revealed participant characteristics, showing an average age of 35.93 (SD=8.52). Regarding education, 65.0% of the study group nurses had graduated from preparatory nursing. Experience in the hospital ranged from 5-10 years for 56.7% of nurses. A majority of nurses, 65.0%, worked in postpartum areas. Regarding workplace experience, over half 58.3 of nurses had 4-6 years of experience without training.

Table 2: Nurses' Knowledge Regarding Active Management of The Third Stage of Labor

Scale	Min.	Max	M	SD	Score	No.	%
Knowledge Scale (35 Q)	37	64	41.43	9.37	Poor (35-46.66)	45	75.0
					Moderate (46.67-58.33)	12	20.0
					Good (58.34-70)	3	5.0
					Total	60	100.0

***Min.: Minimum; Max.: Maximum, M: Mean for Total Score, SD=Standard Deviation for Total Score**

Results indicate that the nurse's responses on knowledge of active management of the third stage scale ranged from 37-64 by the overall responses at a total mean score equal to 41.43 (SD=9.37), and according to the study criteria, this indicated that the (75.0%) of nurses indicate a poor level.

Table 3: Simple Linear Regression Among the Study Variables in Predicting the Nurse's Knowledge

Variables	Unstandardized Coefficients		Standardized Coefficients	t	*Sig.*
	B	Std. Error	Beta		
Age	.162	.104	.265	1.548	.128
Education Level	.305	.131	.322	2.321	.024
Experience in Hospital	-.051-	.160	-.061-	-.322-	.749
Workplace	.085	.148	.073	.577	.566
Workplace Experience	.026	.132	.027	.194	.847
Training Courses	.228	.146	.224	1.189	.041

Dependent Variable: Nurses Knowledge

The results have substantiated that factors such as the nurses' education level (β=2.321; p= .024) and training courses (β = 1.189; p= .041) are predictors for their knowledge of active management of the third stage of labor.

7. Discussion

The study focuses on nurses' knowledge regarding the active management of the third stage of labor to control postpartum hemorrhage and the factors associated with this knowledge. The study sheds light on various participant characteristics that could influence their understanding and application of active management techniques.

The average age of the participating nurses was 35.93 years, with a standard deviation of 8.52. This indicates that the participants had a relatively diverse age range, which might contribute to varying levels of experience and knowledge. 65.0% of the nurses in the study had graduated from preparatory nursing programs. This suggests that a significant proportion of the nurses might have received a foundational nursing education, which could impact their familiarity with advanced practices like active management of the third stage of labor. 56.7% of the nurses had 5-10 years of experience in the hospital. This indicates that many participants had a moderate experience level, which could influence their exposure to different clinical scenarios and practices. The majority (65.0%) of the nurses worked in postpartum areas. This suggests that the study focused on a group of nurses who were likely to be directly involved in maternal care, which makes their knowledge of active management of the third stage of labor particularly relevant. A significant proportion (58.3%) of nurses had 4-6 years of experience without specific training. This could mean that many nurses have accumulated a fair amount of general experience but may have yet to receive specialized training in active management techniques.

The study's findings could be interpreted as nurses with a more extended experience might better understand various clinical practices, including active management. Nurses working in postpartum areas might have more exposure to scenarios where active management is relevant, potentially leading to better knowledge. Those who have yet to receive specific training despite having some experience might exhibit gaps in their understanding, especially regarding advanced practices.

Overall, the study provides insights into nurses' characteristics and potential influence on their knowledge of active management of the third stage of labor. This information can help healthcare institutions design targeted interventions and training programs to improve nurses' understanding and application of these crucial techniques to prevent postpartum hemorrhage.

The analysis of the collected data revealed that the nurses' responses on the knowledge of active management of the third stage scale ranged from 37 to 64. The overall reactions had a mean score of 41.43 with a standard deviation (SD) of 9.37. According to the study criteria, this mean score indicated that approximately 75.0% of the nurses needed better knowledge regarding active management of the third stage. This study's findings highlight the nurses' knowledge levels regarding active management of the third stage of labor. The mean score of 41.43 suggests that a significant portion of the nurses surveyed have inadequate knowledge in this critical area of obstetric care. This has potential implications for patient safety and outcomes, as improper management of the third stage can lead to postpartum hemorrhage, a leading cause of maternal morbidity and mortality. Several factors could contribute to the observed poor knowledge levels among nurses. These factors might include insufficient training and education on active management techniques, lack of exposure to updated guidelines and protocols, and limited opportunities for continuous professional development in maternity care. Addressing these factors through targeted educational interventions and training programs could improve knowledge and patient care [(Bhutia, Shadap and Pangambam, 2018)- (Angelina, Stephen and Ipyana, 2021)].

Nurses' Education Level (β=2.321; p=0.024): This part of the results suggests that nurses with a higher education level tend to have higher knowledge scores regarding the active management of the third stage of labor. The coefficient (β) of 2.321 indicates that for every unit increase in the nurses' education level, their knowledge score is predicted to increase by 2.321 units. The p-value of 0.024 suggests that this relationship is statistically significant, meaning it's unlikely to have occurred by chance. Training Courses (β=1.189; p=0.041): This part of the results suggests that nurses who have undergone training courses related to the active management of the third stage of labor tend to have higher knowledge scores. The coefficient (β) of 1.189 indicates that for every unit increase in the extent of training course completion, the nurses' knowledge score is predicted to increase by 1.189 units. The p-value of 0.041 suggests that this relationship is statistically significant as well. In both cases, the p-values below the conventional significance level of 0.05 indicate that these relationships are likely not due to random chance, and there is evidence to support that education level and training courses are associated with nurses' knowledge about active management of the third stage of labor.

These findings suggest that improving nurses' education levels and providing relevant training courses can enhance their knowledge and competence in actively managing the third stage of labor. However, it's important to remember that these results are based on the data and statistical analysis provided, and it's always a good practice to consider the context and limitations of the study before drawing firm conclusions.

Previous studies have delved into similar associations between healthcare professionals' characteristics and knowledge or performance. For instance, the impact of education levels on nurses' knowledge of pain management techniques. The results aligned with the current study, showing that higher education levels were positively correlated with increased knowledge and competence in pain management practices(Angelina, Stephen and Ipyana, 2021). Likewise, the influence of training programs on healthcare professionals' proficiency in patient communication. This study found that participation in communication-focused training courses improved healthcare providers' communication skills, leading to more effective patient interactions. The results align with the present research, highlighting the positive impact of training courses on nurses' knowledge of active management during the third stage of labor(McCutcheon *et al.*, 2015).

The current study contributes to the growing body of literature recognizing the significance of nurses' education level and training courses in predicting their knowledge of active management during the third stage of labor. These findings underline the importance of continuous professional development and tailored training initiatives to ensure that healthcare providers are well-equipped to provide high-quality care during childbirth.

8. Conclusion

The study found that nurses' knowledge of active management of the third stage of labor varied, overall indicating poor understanding. The results highlighted significant predictors of this knowledge, including education level and participation in training courses. To enhance nurses' proficiency in active management of the third stage, focusing on targeted educational programs and regular training opportunities is recommended.

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