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Effectiveness of Instructional Program in Midwife's Performance Regarding Second and Third Stages of Labor in Delivery Room

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ABSTRACT
Background: Midwives are essential in providing effective and safe care to women during labor. Midwifery care is associated with a variety of positive outcomes for mother and child. However, midwives also face many challenges, including a lack of human resources and dealing with complex deliveries. **Objective:** Assess the effectiveness of an educational program in improving the performance of midwives in intrapartum care in the delivery room.
Methodology: A quasi-experimental design was carried in Al-Najaf Health Directorate/Al-Zahra and Al-Hakeem Teachings Hospitals; the study was conducted from March 20th , 2024 to June 25th, 2024. A purposive sample consisted of 70 midwives, 35 midwives who were exposed to the educational program sessions were considered as a study group, and 35 midwives considered as the control group and who were not exposed to the program.
Conclusion and Recommendation: The majority of the studied sample had moderate performance in the pre-test, whereas there was an improvement in midwives' performance after exposure to program sessions for the study group. The study emphasizes the need for ongoing education and training sessions to maintain and further enhance midwives' skills in this critical area of obstetric care.

Keywords: Instructional Program, Midwives, Performance, Intrapartum Care

INTRODUCTION

The process by which the fetus and placenta are removed from a woman's body through a succession of abdominal pressure and uterine contractions is known as labor. Frequent contractions result in the cervix gradually dilating and producing enough muscle force to push the baby out. For the mother, the fetus, and the family, this is a moment of transition that marks both an end and a beginning [(1,2)].
The care that midwives offer to women during childbirth is contextualized by culture and circumstance. The majority of maternal healthcare in high-income nations is given in hospital labor wards, and the centralization of maternity services has produced an industrial model of care culture where the institution is valued more highly than the care of the person or the family [(3)].
The woman must employ every psychological and physical coping mechanism she knows during labor and delivery. No matter how much she has been prepared for delivery or how many times she has gone through the process before, she requires family-focused nursing care since childbirth is the start of a new family structure. The National Health Goals stress this even further. When interacting with all women, nurse-midwives should be kind, approachable, motivating, and helpful in a professional manner. Assessment, comfort measures, emotional support, education and information, advocacy, and support for the partner are all part of the nursing management of labor and delivery [(4)].
Supportive care throughout pregnancy, however, is crucial to ensuring that women have a happy experience because giving birth can have a lasting impact [(5)]. Additionally, more spontaneous vaginal deliveries and fewer unpleasant delivery experiences are linked to ongoing care for women giving birth [(6)].
The foundation of midwifery care models is fostering meaningful relationships between midwives and women and their families. It has been suggested that the presence of midwives during childbirth and the dynamic

between midwives and women influence the development of midwifery abilities, especially the understanding required to support normalcy and safe deliveries [7].
One crucial aspect of maternal health that helps lower the incidence of maternal and newborn mortality is the availability of high-quality obstetric care. Competency requires both knowledge and behaviors. One method for reaching this goal is to guarantee that nurse-midwives providing care for women have the best possible knowledge, attitudes, and practices to improve the quality of obstetric care [8].

Objectives: the study aims to
1. Assess midwives' performance in intrapartum care in the delivery room.
2- Evaluate the effectiveness of an instructional program in improving the performance of midwives in intrapartum care in the delivery room.
3- Find out the relationship between midwife's performance and their socio-demographic characteristics (age, socio-economic status, level of education, etc.).

Methodology
1. Design of the Study
A quasi-experimental study design using pre and post-test procedures for both study and control groups was utilized to meet the study's objectives. The research was carried out from March 20th, 2024 to June 25th, 2024.
2. Study Setting
A study was carried out at Al-Zahra and Al-Hakeem Teachings Hospitals at Al-Najaf City.
3. Study Sample
A non-probability (purposively) and were randomly assigned, the study sample consisted of (70) midwives and was divided into two groups: (35) midwives in the study group who were exposed to the instructional program; and (35) midwives who were not exposed to the instructional program and were considered as a control group. The two groups had approximately the same demographic characteristics.

4. Construction the Instructional Program
The instructional program is designed to provide midwives with information and nursing practice development based on reviewing the scientific literature and previous studies
Part I: Demographic information: consists of (5) items including (age, marital status, years of experience, level of education, name of shift).
Part II: Knowledge of Midwives Related to Stages of Labor (Second and Third)
This part of the questionnaire is composed of (28) questions about the midwife's knowledge of the stages of labor (second and third).
Part III: Evaluation of Midwives' Practice Related to Care during Stages of Labor (the Second and Third): This part of the questionnaire comprises 42 items and the scoring is as follows: 2 for applied correctly, 1 for not used, and 0 for applied incorrectly.

5. Descriptive Statistical
This includes measurement of the following:
1. Frequency (F)
2. Percentage: the formula used to compute the percentage is:
% = (frequency /$samplesize$) × 100%
3. The Mean: is the arithmetic average of the distribution. The formula used

$$\overline{X} = \frac{\sum X}{N}$$

Results and Findings

Table 1: Socio-Demographic Variables of the Study Participants

Socio-Demographic Characteristics	Rating and Intervals	Study Group		Control Group	
		F.	%	F.	%
Age groups (Years)	<= 25	6	17.65	9	26.47
	26 – 30	15	44.12	15	44.12
	31 and More	13	38.24	10	29.41
Marital Status	Single	6	17.65	7	20.59
	Married	25	73.53	22	64.71
	Divorced	0	.00	2	5.88
	Widow	3	8.82	3	8.82
Years of Experience	<= 5	6	17.65	12	35.29

	6 – 10	17	50.00	14	41.18
	11 and More	11	32.35	8	23.53
Level of Education	Graduate of training courses	2	5.88	4	11.76
	Preparatory nursing graduate	18	52.94	7	20.59
	Institute	14	41.18	23	67.65
	Faculty	0	0	0	0
Type of shift	Daly shift	13	38.24	18	52.94
	Night shift	21	61.76	16	47.06

%= percentage, F.=frequency, df = degree of freedom, P = probability value.S=Significant at (P < 0.05), NS= Non Significant at (P > 0.05).

Table 1 summarizes the frequency distribution of midwives in the study and control groups according to their socio-demographic characteristics. It reveals that the majority of midwives in both groups are in the 26-30 age range.Additionally, the table indicates that most percentage of midwives in both groups are married, about 73.53% and 64.71% in the study and control groups, respectively.Concerning the level of education, the majority of the study group (52.94%) graduated from preparatory nursing programs, while most of the control group (67.65%) graduated from an institute.For work settings, most midwives in the study work night shifts (61.76%).

Table 2: Overall Midwives' Knowledge aboutthe Second and Third Stages of Normal Delivery (Study Group).

Overall Items		**Study Group (n=34)**																			
		Pre					**Post I**					**Post II**					**Post III**				
		F.	**%**	**MS**	**SD**	**Ass.**	**F.**	**%**	**MS**	**SD**	**Ass.**	**F.**	**%**	**MS**	**SD**	**Ass.**	**F.**	**%**	**MS**	**SD**	**As**
Midwives Knowledge	**Poor**	**5**	**14.7**	**.47**	**.14**	**Fair**	**0**	**.00**	**.81**	**.09**	**Good**	**0**	**.00**	**.76**	**.11**	**Good**	**0**	**.00**	**.93**	**.06**	**Good**
	Fair	**25**	**73.5**				**2**	**5.9**				**7**	**20.6**				**0**	**.00**			
	Good	**4**	**11.7**				**32**	**94.1**				**27**	**79.4**				**34**	**100**			

%= percentage, F. = frequency, M.S: Mean of score, Poor (mean of scores <=0.33), Fair (mean of scores 0.34-0.67), Good (mean of scores 0.68 and more), SD: Standard Deviation**.**

Table 2 demonstrates that a significant number of midwives about (73.5%) had fair knowledge, and only 11.7% showed good knowledge in the pre-test, while in the post-test the percentage of midwives with good knowledge increased dramatically after each intervention test, culminating in 100% of the study group having good knowledge after post III.

Table 3: Overall Midwives'Knowledge aboutStages of Normal Delivery ofthe Control Group

Overall Items		Control Group (n=34)																			
		Pre					Post I					Post II					Post III				
		F.	%	ms	SD	Ass.	F.	%	MS	SD	Ass.	F.	%	MS	SD	Ass.	F.	%	MS	SD	Ass.
Midwives Knowledge	Poor	2	5.88	.49	.11	Fair	0	.00	.54	.10	Fair	0	.00	.62	.09	Fair	0	.00	.65	.09	Fair
	Fair	28	82.35				28	82.4				23	67.6				19	55.9			
	Good	4	11.76				6	17.6				11	32.4				15	44.1			

%= percentage, F. = frequency, M.S: Mean of score, Poor (mean of scores <=0.33), Fair (mean of scores 0.34-0.67), Good (mean of scores 0.68 and more), SD: Standard Deviation, Ass.: Assessment.

Table 3 shows thatthe majority of midwives (82.3%) had fair knowledge, and only 11.7% demonstrated good knowledge, while there were some improvements, the changes in knowledge were less pronounced compared to the study group in the post-test.

Table 4: Overall Midwives' Performance RegardingIntrapartum Care in the Second Stage of Labor (Study Group)

Overall Items		Study Group (n=34)																			
		Pre					Post I					Post II					Post III				
		F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.
Midwives' performance	Poor	2	5.9	.91	.14	Fair	0	.00	1.38	.13	Good	0	.00	1.39	.19	Good	0	.00	1.56	.17	Good
	Fair	32	94.1				15	44.1				14	41.9				4	11.8			
	Good	0	.00				19	55.9				20	58.8				30	88.2			

%= percentage, F. = frequency, M.S: Mean of the score, Poor (mean of scores <=0.66), Fair (mean of scores 0.67-1.33), Good (mean of scores 1.34 and more), SD: Standard Deviation.

The table aboverepresents the assessment of midwives' performance regarding intrapartum care in the second stage of normal delivery. The majority of midwives (94.1%) had fair performance, and only 5.9% demonstrated poor performance. In the post-test the percentage of midwives with good performance increased dramatically after each intervention, culminating in 88.2% of the study group having good performance after Post III.

Table 5: Evaluation of Overall Midwives' Performance RegardingIntrapartum Care during the Third Stage of Normal Delivery (the Study Group)

Overall Items		Study Group (n=34)																			
		Pre					Post I					Post II					Post III				
		F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.
Midwives' performance	Poor	0	.00	1.07	.10	Fair	0	.00	1.56	.12	Good	0	.00	1.54	.13	Good	0	.00	1.70	.11	Good
	Fair	34	100				3	8.82				2	5.9				0	.00			
	Good	0	.00				31	91.18				32	94.1				34	100			

%= percentage, F. = frequency, M.S: Mean of score, Poor (mean of scores <=0.66), Fair (mean of scores 0.67-1.33), Good (mean of scores 1.34 and more), SD: Standard Deviation

Table 5 shows an assessment of midwives' responses to their performance in providing care during the third stage of vaginal delivery. In the pre-test, illustrations that the study group recorded fair responses, while in the post-tests I, II, and III was a good level of performance in the study group.

Table 6: Overall Midwives' Performance RegardingIntrapartum Care during the Second Stage of Normal Labor Control Group

Overall Items		Control Group (n=34)																			
		Pre					Post I					Post II					Post III				
		F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.
PS	Poor	0	.00	.90	.10	Fair	0	.00	.97	.11	Fair	0	.00	1.05	.11	Fair	0	.00	1.12	.15	Fair
	Fair	34	100				34	100				34	100				31	91.9			
	Good	0	.00				0	.00				0	.00				3	8.82			

%= percentage, F. = frequency, M.S: Mean score, Poor (mean scores <=0.66), Fair (mean scores 0.67-1.33), Good (mean scores 1.34 and more), SD: Standard Deviation, Ass.: Assessment.

The tableabove shows the midwives' performance regarding intrapartum care during the second stage of normal labor. At the pre-test, the performance was rated as fair. In contrast, the post-test I, II, and III results indicate that the control group's performance remained fair.

Table 7: Evaluation of Overall Midwives' Performance Regarding Intrapartum Care during the Third Stage of Normal Delivery (Control Group)

Overall Items	Control Group (n=34)			
	Pre	Post I	Post II	Post III

		F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.	F.	%	M.S	S.D	Ass.
Midwives' performance	Poor	0	.00	1.11	.11	Fair	0	.00	1.18	.11	Fair	0	.00	1.32	.28	Fair	0	.00	1.30	.19	Fair
	Fair	33	97.1				31	91.2				25	73.5				15	44.1			
	Good	1	2.9				3	8.8				9	26.5				19	55.9			

%= percentage, F. = frequency, M.S: Mean of the score, Poor (mean of scores <=0.66), Fair (mean of scores 0.67-1.33), Good (mean of scores 1.34 and more), SD: Standard Deviation, Ass.: Assessment.

The table above shows the midwives' performance regarding intrapartum care. The pre and post-test results were the same, which was fair, as the midwives did not show any performance improvement.

Table 8: Comparison of Midwives' Knowledge related to the second and third stages of normal delivery between the control and study groups

Overall	Test	Study Group	Control Group	Independent "t"-test (df)	P- value
		Mean ± SD	Mean ± SD		
Knowledge of Midwives	Pre-test	.47 ± .14	.49 ± .11	.636 (66)	.525
	Post-test I	.81 ± .09	.54 ± .10	11.521 (66)	<0.0001
	Post-test II	.76 ± .11	.62 ± .09	5.869 (66)	<0.0001
	Post-test III	.93 ± .06	.65 ± .09	14.665 (66)	<0.0001

Table8shows a significant variance in midwives' knowledge about stages of normal delivery (second and third) between control and study groups,in post-test I, II, and III using independent t-test, with all p-values being less than 0.05. In contrast, the table shows no significant variance between the control and study groups at the pre-test, where the p-value was greater than 0.05.

Table 9: Comparison of Midwives' Performance Regarding Intrapartum Care inSecond Stage of Normal Delivery between the Control and Study Groups

Overall	Test	Study Group	Control Group	Independent "t"-test (df)	P- value
		Mean ± SD	Mean ± SD		
Midwives' performance during the second stage	Pre-test	.91 ± .14	.90 ± .10	.382 (66)	.704
	Post-test I	1.38 ± .13	.97 ± .11	13.741 (66)	<0.0001
	Post-test II	1.39 ± .19	1.05 ± .11	8.765 (66)	<0.0001
	Post-test III	1.56 ± .17	1.12 ± .15	11.309 (66)	<0.0001

Table 9demonstrationsa significant variance in midwives' performance during the second stage of delivery, in post-test I, II, and III using independent t-test, with all p-values being less than 0.05. In contrast, the table displays no significant variance between both group in the pre-testat p-value was greater than 0.05.

Table 10: Comparison of Midwives' Performance regarding Intrapartum Care between the Control and Study Groups

Overall	Test	Study Group	Control Group	Independent t-test (df)	P- value
		Mean ± SD	Mean ± SD		
Midwives' performance during the third stage	Pre-test	1.07 ± .10	1.11 ± .11	1.721 (66)	.090
	Post-test I	1.56 ± .12	1.18 ± .11	13.466 (66)	<0.0001
	Post-test II	1.54 ± .13	1.32 ± .18	4.236 (66)	<0.0001
	Post-test III	1.70 ± .11	1.36 ± .19	9.313 (66)	<0.0001

Table 10illustratesa significant variance in midwives' performance during third stage of delivery, at post-test I, II, and III using an independent t-test, with all p-values being less than 0.05. In contrast, the table shows no

significant variance between the control and study groups at the pre-test, where the p-value was greater than 0.05.

DISCUSSION

Table 1 shows the socio-demographic characteristics of the control and study groups. Both groups showed a similar age distribution, with most participants being in the 26-30 age group. Regarding education level: about half of the study group were nursing secondary school graduates, while in the control group; more than sixty percent were institute graduates.Concerning years of experience, the study group has a slightly higher proportion of participants with 6-10 years of experience, while the control group has a higher proportion of participants with 11 or more years of experience. There is a previous study that supports our current results, conducted by [9], they stated that the highest percentage of the study sample were graduates of midwifery school and about 42.3% had experience in the field of specialization ranging from one year to ten years.

Concerning marital status, the study group has a slightly higher proportion of married individuals than the control group; this result is supported by [10], who reported that more than half participants were married, while the control group had a higher proportion of single individuals.

As for the type of shift, this percentage varies from one hospital to another according to the number of patients, competencies of nurses and midwives, and number of beds. The study group has a higher proportion of participants working night shifts; while most midwife's nurses working daily shifts in the control group.This result supported with[11]mentioned that the midwives who provided care not have fixed working hours, and had working hours that could reach 16 hours. The researcher's point of view, differences in marital status, years of experience, and level of education may influence study outcomes. For example, participants with less experience may face additional challenges that could influence their performance or outcomes.

Discussion of Table 2: Assessment of overall midwife's knowledge related to the second and third stages of labor. The table includes data on a study group of 34 midwives, comparing their knowledge levels at different time points: pre-intervention (test), post-intervention I, II, and III. In a pre-test, a significant number of midwives more than half had fair knowledge, and only 11.7% demonstrated good knowledge.These current results are supported by [12], who reported that the overall knowledge of midwives was low.

In the post-test, the percentage of midwives with good knowledge increased dramatically after each test, culminating in 100% of the study group having good knowledge after post-III.The positive changes in knowledge were observed in all post-tests, suggesting a sustained improvement over time.This might be attributed to the effectiveness of the interventions implemented in this study were successful in improving midwives' knowledge. Better-informed midwives are likely to provide more effective and safe care during the second and third stages of normal delivery, leading to improved outcomes for both mothers and newborn infants.The findings emphasize the need for ongoing education and training to maintain and further enhance midwives' knowledge and skills.

Discussion of Table 3: Assessment of overall midwife's knowledge in the control group: This group serves as a comparison to study group that received intervention sessions.The table demonstratesa majority of midwives had fair knowledge, and a small percentage demonstrated good knowledge in the pre-test, while in the post-test there were some improvements, the changes in knowledge were less pronounced compared withthe study group. The percentage of midwives with good knowledge increased to 44.1% after post-test III but remained below the level achieved by the intervention group (study).These results also align with the study conducted by [13], the study-evaluated midwives' knowledge of labor, with responses ranging from 37-64, which indicates that most of them needed a better understanding.

Tables 4 and 5represent the assessment of midwives' performance regarding intrapartum care during the stages of labor (second and third). In the pre-test, a majority of midwives had fair performance, whilein the post-test, the percentage of midwives with good performance increased dramatically after each intervention, and the study participants achieved the best performance after the post-III.This indicates that the intervention sessions were effective in enhancing midwives' skills in providing care during stages of labor, highlighting the importance of targeted education and training programs to enhance their skills, leading to improved outcomes for both mothers and newborn infants. This result agrees with another study done by [9], who reported that the majority of practices had low mean scores in most of the items related to the practice of midwives in pre-tests with poor relative sufficiency, and the majority of them were evaluated as (failures). Following the training program's execution, all items had high mean scores, and the post-test resulted in a pass rating. Furthermore, another study done in Egypt, discovered that another type of care proved to be advantageous and revealed that although active management was widely used, it was only implemented correctly in 15% of cases [14].

Discussion the table 6, the overall performance of midwives remained relatively stable throughout the study, with the majority rated as fair across all periods in control group. There was no noticeable improvement in performance from the pre- to post-intervention periods. From the researcher's point of view, the consistent performance of midwives suggests a stable level of knowledge and skills in managing intrapartum care due to midwives might not have received adequate training or continuing education to enhance their skills. So, ensure

midwives receive ongoing training on evidence-based practices and guidelines, reduce workload, provide adequate resources, and create a supportive work environment. By addressing these factors, it may be possible to enhance the performance of midwives and improve the outcomes of intrapartum care.

Table 7 presents the assessment of midwives' practices regarding intrapartum care of labor in the control group. The majority of midwives had fair performance and a very small percentage, not exceeding 3 % demonstrated good performance in (pre-test), whereas post-test there were some improvements, and the changes in performance were less pronounced compared to the study group. From the researcher's point of view, midwives do not implement several practices. This may be due to a lack of resources in delivery rooms, work pressure, and the large number of births, or their neglect of these practices.

Discussion of Table 8 compares midwives' knowledgeincontrol and study group.In the pre-test: before any intervention or training sessions, there no significant variance in understanding between both groups, ata p-value of 0.525. Whereas there is a strong statistical difference after the training or education sessions in the post-tests I, II, and III, the study group showed a higher significant level of knowledge than control group on all three post-tests. The p-values for these tests are all less than 0.0001. These results agree with [15], when compared between pre and post-knowledge levels, who reported that only 17.1% and 20% of them had good levels of knowledge about 3rd stage labor expertise in control and intervention groups, respectively.

Discussions Tables 9 and 10 compare the performance of midwives in providing intrapartum care during normal labor delivery between bothgroups. In the pre-test (prior the instructional program sessions), there are no significant differences in the performance of nurses-midwives between the both two groups, at a probability value of 0.704. These findings are supported by [16],who mention that there was a low score for their nurse-midwife's practices for most items about the stage two of labor.Post-tests I, II, and III: the study group demonstrated statistically significantly higher performance levels compared to the control group for all three post-tests at p-values for these tests are all less than 0.0001.

CONCLUSIONS

The study group significantly improved their knowledge of intrapartum care after interventions, while the control group showed less improvement. Performance Assessment: The study group also significantly improved their performance in intrapartum care after interventions, while the control group's performance remained relatively stable**.** Overall, the study provides evidence for the efficiency of interventions sessions in improving knowledge of midwives, skills, and practices in intrapartum care, particularly during the second and third stages of labor.

Recommendations

Emphasize the need for ongoing education and training sessions to maintain and further enhance midwives' skills in this critical area of obstetric care. These interventions can lead to improved outcomes for both mothers and newborn infants. Addressing factors such as workload, resources, and work environment can contribute to improving the performance of midwives.

Limitations

Small sample sizes can limit the generalizability of the findings andstudy design: Non-randomized or observational studies may introduce bias, affecting the reliability of results.

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Conflicts of Interest

The authors declare that have no conflict of interest in relation to the research presented in this manuscript entitled "[Effectiveness of Instructional Program in Midwife's Performance Regarding Second and Third Stages of Labor in Delivery Room]".

the authors declare that they have no financial interests or personal relationships that could potentially bias my research or influence my interpretation of the results.

all authors have been listed in the manuscript and have approved the submission for publication.

All authors declare that the research presented in this manuscript is original and has not been published previously or submitted for publication elsewhere.

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