

Effect of Implementation of a Teaching Program about Immediate Postpartum Care on Nurses' Knowledge and Practice.

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Abstract: Immediate postpartum period refers to the care provided to the parturient woman and her newborn in the first two hours following the full expulsion of the placenta, after the baby is born. These hours are the initial and/or acute phase of the postpartum period. It is a very vulnerable period for both the mother and the newborn. **The aim of this study:** was to determine the effect of implementation of a teaching program about immediate postpartum care on nurses' knowledge and practice. **Subjects and method:** The study was conducted at the postpartum units of Tanta University Hospital, El-Menshawy and El-Mabara Hospitals affiliated to the Ministry of Health. All nurses (40 nurses) who were working in the previously mentioned study settings and provided care to women with normal vaginal delivery were assigned. Two tools were used for collection of data; **Tool (I): Structured Questionnaire socio-demographic data and knowledge assessment.** It comprised the following parts: **Part I: Socio-demographic characteristics of nurses** and **Part II: Structured Questionnaire of nurses' knowledge about immediate postpartum care.** **Tool (II):** It was developed to assess nurses' performance of immediate postpartum care .It comprised the following parts. **Part I: Immediate Postpartum Care Nurses' Observation Checklist (for women)** and **Part II: Immediate Postpartum Care Nurses' Observation Checklist (for newborn).** **Results:** The mean knowledge score of nurses regarding immediate postpartum care and newborn care was increased immediately after implementation of the program with a significant statistical difference $P < 0.05$. The mean performance score of nurses regarding immediate postpartum care and immediate care of the newborn was higher immediately after implementation of the program with a significant statistical difference $P < 0.05$ compared to pre-program. **Conclusion and recommendations:** The findings of present study revealed that after implementation of teaching program immediately and 3 months later the post program, there was a significant improvement of knowledge as well as performance among the studied nurses regarding the immediate postpartum care and the immediate newborn care compared to preprogram. Planned in-service training programs for all nurses working in the postpartum wards regarding the importance of the first 2 hour immediately postpartum must be conducted in order to improve their knowledge and performance and ultimately improving the quality of health care.

Keywords: Immediate postpartum care.

I. Introduction

Immediate postpartum period is the period beginning immediately after the delivery of the placenta and extending up to the first two hours after delivery. During the immediate postpartum period, the mother and newborn, within the context of their family or personal support, should be viewed as a unit. The fourth stage of labor is the first 2 hours after the birth of the baby. It is a crucial time for the mother and the baby⁽¹⁻³⁾. Puerperium is the period following childbirth during which the body tissues, specially the pelvic organs revert back approximately to the pre-pregnant state both anatomically and physiologically. The period is arbitrarily divided into immediate within 24 hours, early up to 7 days and remote up to 6 weeks. The “fourth stage of labor” is termed as “immediate postpartum period,” which represents the period of the first two hours after expulsion of the placenta when close observation is desirable to avoid or detect postpartum hemorrhage, signs of sepsis or hypertension, and when breast feeding is initiated^(4,5).

The Maternal Mortality Ratio (MMR) in developing countries is estimated at 440/100,000 live births with 46 countries having an MMR greater than 500/100,000 live births. Between 11% and 17% of such deaths happen during childbirth and 50%

to 71% in the postpartum period. Most of the postpartum deaths occur immediately after delivery and during the first week of postpartum period⁽⁶⁾. The objectives of immediate postpartum care are to help the mother adjust to the changes that have occurred as a result of pregnancy, delivery, and childbirth, assess health status of mother and newborns, provide guidance and information about breastfeeding and care of the newborn, as well as to provide immunization for the mother including postpartum rubella or RH prophylaxis if indicated^(7,8).

It is vitally important that midwives have the knowledge and skills to determine when to be proactive and undertake specific observations and nursing interventions when there are indications to do so. Therefore, the midwife needs to be knowledgeable and recognize what are normal expected outcomes following birth and also be able to identify signs of what is not normal and when to instigate care that will involve further investigation, tests and to call support of other health professionals. Then midwife's responsibility is to be competent and able to undertake further necessary education and training required to provide extended care^(9,10).

Nurses should provide competent nursing care during early (immediate) postpartum

period. This critical time requires nurses to be open-mindedness and patient. This skill set requires that nurses should perceive that the first 2 hours after delivery are of significant concern. Thus, they should provide competent care to postpartum women and their families taking into considerations their beliefs, experiences and environment and respecting their human rights and dignity. The nurse's role in labor, birth and immediate postpartum period is a privileged one, as childbirth is one of the most vulnerable times in women's life. Thus, the nurse should focus on supporting, protecting, advocating and empowering women during this time ⁽¹¹⁾.

Aim of the study

The aim of this study was to determine the effect of implementation of a teaching program about immediate postpartum care on nurses' knowledge and practice.

Research Hypothesis:

Nurses' knowledge and practice are expected to be improved post implementation of a teaching program regarding immediate postpartum care for the mother and her newborn immediately and 3 months later.

II. Subjects and Method:

i. Study design:

A quasi-experimental design was adopted to conduct this study.

ii. Setting:

The study was conducted at the postpartum units of Tanta University Hospital, El-Menshawy and El-Mabara Hospitals affiliated to the Ministry of Health.

Subjects:

All nurses (40 nurses) who were working in the previously mentioned study settings and provided care to women with normal vaginal delivery were assigned and classified as follow:

- Nurses who were working at Tanta University Hospital (22 nurses).
- Nurses who were working at EL-Menshawy Hospital (10 nurses).
- Nurses who were working at EL-Mabara Hospital (8 nurses).

iii. Tools of data collection:

Tools of data collection were developed by the researcher based on relevant literature and used to collect data about the study subjects as follows:-

Tool (I): Structured Questionnaire socio-demographic data and knowledge assessment. It comprised the following parts:

Part I: Socio-demographic characteristics of nurses such as name, age, workplace, educational qualification, years of experience and previous training and courses regarding the immediate

postpartum care and **Part II: Structured Questionnaire of nurses' knowledge assessment about immediate postpartum care.** It included (The general physiological changes, psychological changes, local physiological changes, nurses' knowledge regarding postpartum care and instructional guidelines given to mothers before discharge from the hospital as well as care of their newborns).

Tool (II): It was developed by the researcher to assess nurses' performance of immediate postpartum care. It comprised the following parts:

Part I: Immediate Postpartum Care Nurses' Observation Checklist (for women): It included the immediate postpartum nursing care and procedures provided by nurses to women during the immediate postpartum period (the first 2 hours after delivery) and **Part II: Immediate Postpartum Care Nurses' Observation Checklist (for newborn):** It included the immediate newborn care as (maintenance of clear airway and body temperature, assessment of Apgar score at 1 and 5 minutes after delivery, care of umbilical cord stump, detection of any abnormalities as well as identification and prevention of hemorrhage through administration of vitamin K).

Method

The study was conducted according to the following steps:-

- 1) Official permissions were obtained to conduct the study from the responsible authorities at the faculty of Nursing and the studied hospitals.
- 2) Ethical and legal considerations:
 - The nurses have been met prior to their participation in order to explain the purpose of the study.
 - An informed consent for participation in the study was obtained from the entire sample.
 - The study subjects were notified that the nature of the study will not cause any harm or pain.
 - Confidentiality and privacy was considered regarding the data collected and nurses rights to withdraw from the study at any time.
- 3) Review of the relevant recent literature using available local and international books, magazines was done to plan for the development of the study tools and the contents of the educational program.
- 4) Tool I was developed in Arabic and Tool II was developed in English after reviewing recent literature and they were tested for content and construct

validity by a jury of 3 experts in the Obstetric and Gynecological Nursing.

- 5) Tool I and Tool II were applied three times, the first one pre-test and the second post-test immediately after implementation of the program and the third after 3 months post program implementation.
- 6) A pilot study was carried out on 10% (4 nurses) of the proposed sample after taking their approval in order to test the feasibility, and applicability of the developed tools and to determine the obstacles that may be encountered during the period of data collection. Accordingly, some statements of tool I and II were rephrasing.
- 7) Data collection was conducted in four months period from the 1st of December 2017 to the 1st of April 2018, 2-3 days per week during the morning, afternoon and evening shifts. Data collection started at Tanta University Hospitals, then EL-Mabara Hospital and finally EL-Menshawy Hospital.
- 8) **The study was conducted into 4 phases:**

Assessment phase:

- This phase was done before giving sessions. The researcher met with nurses at morning, afternoon and evening shifts at postpartum ward or on the counter shifted between the three hospitals. Nurses were asked to participate after explaining the aim of the study. **Tool I Part I** was used to assess socio-demographic characteristics of nurses and fulfilled by them.
- Nurses' pre-test was conducted at the beginning of the session by using **Tool I Part II** to assess nurses' knowledge regarding immediate postpartum period during the first 2 hours after delivery in the presence of the researcher for necessary clarification. **Tool II part I** and the observational checklist for the mother and the newborn were used to assess nurses' performance immediately postpartum (during the first 2 hours after delivery) used before, immediately and 3 months later after implementation of the program.
- Nurses' knowledge was assessed individually for each nurse by an interview lasted 15 minutes for each nurse. In the first and second day 16 nurses were assessed and 8 nurses in the third day (the last day). Totally the researcher took 4 hours daily for the first 2 days and 2 hours in the last day.
- Nurses' performance was assessed by the researcher. At least six procedures were assessed individually for each

nurse at a rate of 4 nurses every day for 10-13 days.

Planning phase:

- The educational program was developed by the researcher based on data from the assessment phase and literature review. Priorities of goals and expected outcome criteria were formulated. The researcher prepared the instructional materials (posters, videos, pictures and power point presentation) to be used in the educational program. Colored booklet was also developed and distributed to every nurse for enforcement and as a reference.

Implementation phase:

- The educational program was implemented by the researcher after reviewing of related literatures.

First Session:

- The researcher explained the definition of immediate postpartum period, physiological (general, local) and psychological changes during immediate postpartum period during the first 2 hours after delivery, importance of postpartum care, rest, position, postpartum exercises, breast care, breast feeding, bladder care, episiotomy and vaginal care, prevention of postpartum hemorrhage and prevention of infection, followed

by break time for 30 minutes, then the researcher explained instructional guidelines given to mothers before discharge from the hospital that included breast feeding, maternal nutrition, postpartum exercises, family Planning methods, sexual intercourse, postpartum follow up visits and postpartum danger signs.

Second Session:

- This session included the implementation of immediate postpartum nursing care during the first two hours after delivery through demonstration and re-demonstration of procedures that included: **assessment of vital signs, uterus and lochia (uterine height, location, consistency and lochia flow) and perineal care.**

Third Session:

- This session included the implementation of immediate postpartum nursing care during the first two hours after delivery through demonstration and re-demonstration of **breast care, bladder care, bowel care, episiotomy care and infection control measures** before, during and after performing procedures that included **(Use aseptic technique, hand washing, wear sterile gloves, discard disposable equipment and**

sterilization of the reusable equipment).

Fourth Session:

- The researcher explained demonstrated and re-demonstrated **immediate newborn care which included** maintenance of clear airway and body temperature, Apgar score assessment at 1 and 5 minutes after delivery, assessment of vital signs, umbilical cord stump care, and detection of any abnormalities and prevention of hemorrhage through administration of vitamin K followed by break time for 30 minutes. Then the researcher explained **health education** given to mothers before the hospital discharge **regarding newborn care which included:** eyes care, cord care, baby Bath, immunization, anthropometric measurements, circumcision care and newborn danger signs.
- The educational program was implemented on small group basis. Each sub group was encompassing 5 nurses. Each sub group was attending a total of 4 sessions. These sessions were scheduled as 2 sessions per week for each hospital. Totally the numbers of sessions were 4 sessions for 4 weeks. The duration of each session

was 1.5 to 2 hours. This phase took 12 days.

- The educational program was presented through open discussion, demonstration and re-demonstration between the researcher and nurses, visual aids, power point presentation, video presentation, self-learning module, and actual situation.
- In each session a theoretical part was given at first then demonstration of postpartum procedures by the researcher of the above mentioned practices and the re-demonstration by nurses.

Evaluation phase:

The evaluation of the implemented program was done by:

- Assessment of nurses' knowledge and performance was done (three times), before implementation of nursing intervention and teaching sessions by using **Tool I part II and Tool II part I and II** then immediately and after three months post sessions using the same tools (pre, posttests techniques).
- Nurses were distributed (individually) for self-filling to assess their knowledge using **Tool I part II (knowledge assessment)**.
- Each nurse was observed individually three times to assess their performance

while conducting immediate postpartum care (during the first 2 hours after delivery) for the mother and her newborn using **Tool II part I and II (observation checklist)**.

- Comparison was done regarding nurses' knowledge and performance before, immediately and 3 months after implementation of program to identify the effect of the teaching program on their knowledge and performance regarding immediate postpartum care

9) Data analysis:

Data was collected, coded and analyzed and then organized into tables using the statistical package for social science (SPSS 22)

III. Results:

Table (I): Shows that nurses' age ranged from 20-55 years, with a mean age of 33.72 ± 9.894 . Regarding their educational level, more than one third (40%) of nurses had completed 3 years nursing diplome. The table also shows that, 37.5% of the studied nurses had 10-20 years of experience. In relation to training courses, it was observed that three quarters (75%) of nurses didn't take any training courses. Regarding time of the last training courses, 20% of the studied nurses have taken the last training courses since less than 5 years duration. As regards to the place of the

previous training courses, 20% of the studied nurses have taken training courses at Ministry of Health.

Figure (I): Shows that about (10%) of nurses had good level of knowledge regarding immediate care of the newborn preprogram. While immediately after program, the percentage increased to (97.5%) then became (90%) 3 months post program implementation.

Figure (II): Represents that about (15%) of nurses had good level of knowledge regarding immediate postpartum care preprogram. While it increased to (92.5%) immediately after program, and decreased to (80%) 3 months post program implementation.

Figure (III): Demonstrates that about (32.2%) of nurses had satisfactory practice regarding immediate postpartum newborn care preprogram implementation. While the percentage increased to (69.7%) immediately after program, and (63.4%) 3 months post program implementation.

Figure (IV): Illustrates that (37.5%) of the nurses had satisfactory practice regarding immediate postpartum care of the mother preprogram implementation. While the percentage increased to (95%) immediately after program implementation and (80%) 3 months post program implementation.

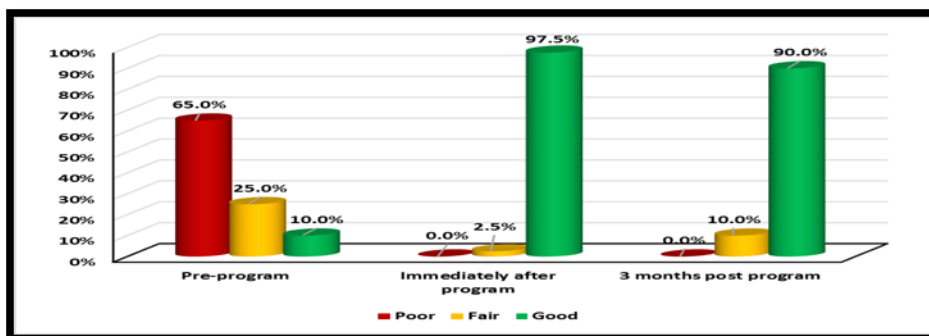
Table (II): Shows a significant correlation was found between the total score of

knowledge and nurses' age immediately after program and 3 months post program where $r=0.541$ and $P=0.010^*$ and $r=0.623$ and $P=0.020^*$ respectively. There was also a significant correlation between the total score of knowledge and educational level immediately after program and 3 months post program where $r=0.611$ and $P=0.001^*$ and $r=0.451$ and $P=0.001^*$ respectively. Moreover, a significant correlation was noticed between the total score of performance and nurses' age immediately after program and 3 months post program in where $r=0.643$ and $P=0.001^*$ and $r=0.587$ and $P=0.001^*$ respectively. There was also a significant correlation between the nurses' educational level immediately after program and 3 months later where $r=0.589$ and $P=0.021^*$ and $r=0.487$ and $P=0.011^*$ respectively.

Table (1): Distribution of the studied nurses according to their socio-demographic characteristics.

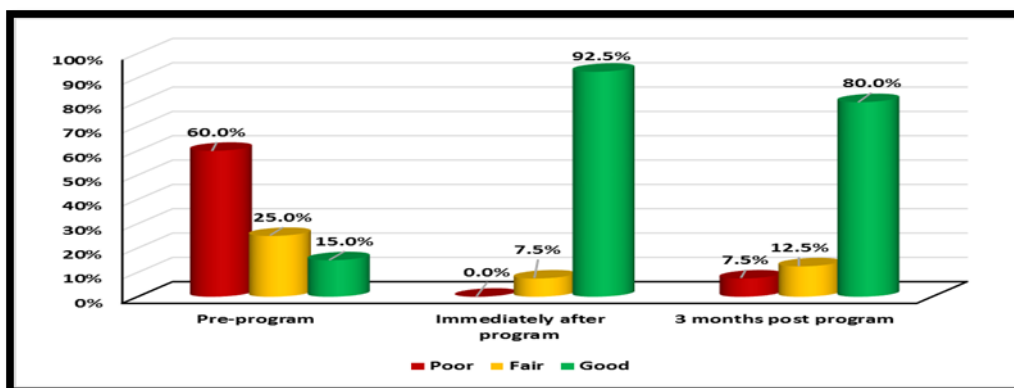
Socio-demographic Characteristics	The studied nurses (n=40)	
	N	%
Age (years)		
≤ 30 years	16	40.0
31-40 years	14	35.0
41-50 years	8	20.0
> 50 years	2	5.0
Range	20-55	
Mean±SD	33.72±9.894	
Educational level		
3 years nursing diplome	16	40.0
3 years diplome & Obstetric diplome	11	27.5
Technical institute	9	22.5
Nursing bachelor	4	10.0
Experience (years)		
<5 years	10	25.0
5-10 years	5	12.5
10-20 years	15	37.5
>20 years	10	25.0
Range	3-36	
Mean±SD	14.906±10.46	
Training courses		
None	30	75%
< 5 courses.	9	22.5%
≥ 5 courses.	1	2.5%
Time of the last training courses		
None	30	75%
< 5 years	8	20%
≥ 5 years	2	5%
Place of the previous training courses		
None	30	75%
Ministry of Health	8	20%
University	1	2.5%
Other	1	2.5%

Fig (1): Total score level of overall knowledge among studied nurses regarding immediate care of the newborn pre, immediately and 3 months post program



*Significant or $P < 0.05$

Fig (2): Total score level of the studied nurses' overall knowledge regarding immediate postpartum care pre, immediately and 3 months post program



*Significant or $P < 0.05$

Fig (3): Total score level of the studied nurses' overall performance regarding immediate newborn care pre, immediately and 3 months post program

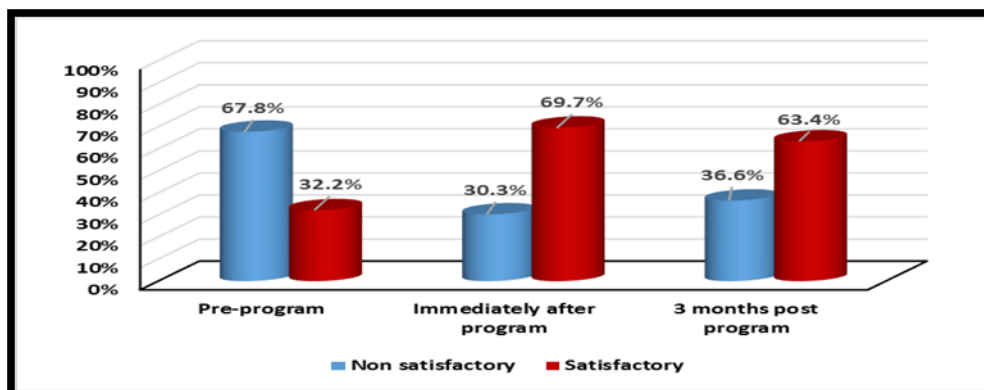
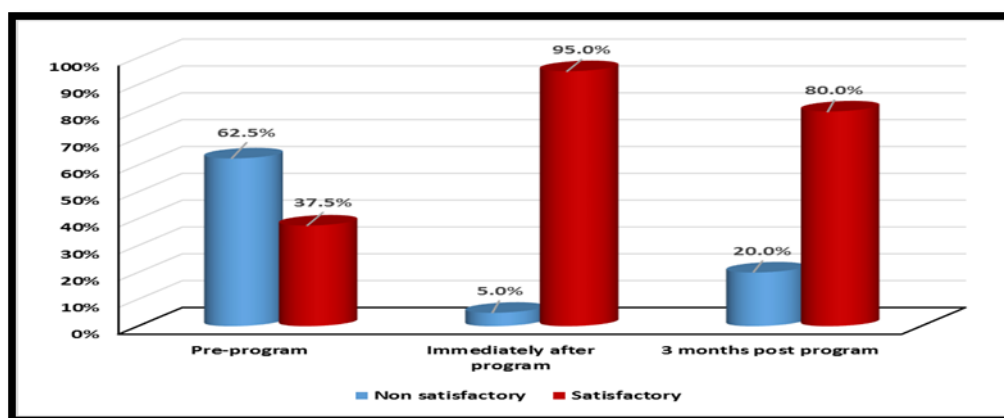


Fig (4): Total score level of the studied nurses' overall performance regarding immediate postpartum care of the mother pre, immediately and 3 months post program



*Significant or $P < 0.05$

Table (2): Correlation between the total score level of knowledge and total score level of performance among studied nurses regarding immediate postpartum care and their socio demographic characteristics.

Socio demographic characteristics	Total knowledge score			Total performance score		
	Pre-program	Immediately after program	3 months post program	Pre-program	Immediately after program	3 months post program
	r P	r P	R P	r P	R P	r P
Age	-0.059 0.716	0.541 0.010*	0.623 0.020*	-0.113 0.487	0.643 0.001*	0.587 0.001*
Educational level	0.124 0.574	0.611 0.001*	0.451 0.001*	-0.213 0.671	0.589 0.021*	0.487 0.011*
Experience	-0.117 0.471	-0.146 0.369	-0.080 0.622	-0.109 0.505	0.108 0.506	0.143 0.378
Training course number	0.084 0.608	0.029 0.861	0.204 0.207	0.222 0.168	0.260 0.106	0.183 0.258

* Significant at $P < 0.05$.

r = correlation coefficient.

IV. Discussion:

Immediate postpartum period refers to the first 2 hours after delivery. These hours are the initial or acute phase of the postpartum period. The World Health Organization (WHO) describes the immediate postnatal period as the most critical and yet the most neglected phase in the lives of the mothers and their babies; most maternal and/or newborn deaths occur during the postnatal period. The fourth stage of labor is a crucial period of labor process, because many life threatening complications can accompany this stage of labor. So, it is vital to provide the nurses with a full-fledged knowledge and training for the management of the fourth stage of labor^(2, 12, 13, 14).

As regards to the socio-demographic characteristics of the studied nurses, the findings of the present study revealed that more than one third of the studied nurses were equal or less than 30 years old, had 3 years nursing diploma and more than one third had worked between 10 to 20 years of experience. This finding is similar to **Kaur et al., (2014)**⁽¹⁵⁾ who found that the majority of the subjects were in the age group of 26-30 years.

On the other hand, they found that **Hashem (2012)**⁽¹⁶⁾ and **Hassan et al., (2016)**⁽¹⁷⁾ findings also disagreed with this study. They found that less than two thirds

had Bachelor science of nursing and forty percent of the subjects had experience of 6-10 years. **Hashem (2012)**⁽¹⁶⁾ found that the majority of the studied nurses were more than 40 years old and all of them had diploma degree with more than ten years of experience. Again **Hassan et al., (2016)**⁽¹⁷⁾ found that more than half of the studied nurses also aged between 25 and 29 years old.

Moreover, the results of the present study revealed that three quarters of the studied nurses didn't attend any training courses about the immediate post-partum nursing care, likewise **Hashem (2012)**⁽¹⁶⁾, mentioned that, almost all the studied nurses didn't attend any in-service training program about the quality of immediate postpartum nursing care. This finding was dissimilar to **Hassan et al., (2016)**⁽¹⁷⁾ who found that more than half of the studied nurses attended training courses about immediate postpartum nursing care this may be related to the different characteristics of the study subjects.

With regard to nurses' knowledge regarding immediate care of the newborn, the study results revealed a good score level of knowledge immediately after and 3 months post program implementation compared to only (10%) of them pre program. This finding is in accordance with **Aschalew (2016)**⁽¹⁸⁾ who illustrated

that about (55.3%) of the study participants had good knowledge about immediate newborn care. This finding also is in congruent with **Shinde (2015)** ⁽¹⁹⁾ who found that less than half of the staff nurses had knowledge regarding immediate newborn care.

Therefore, the present study revealed improvement in the total knowledge score level immediately and 3 months post program implementation compared by pre implementation of the educational program. This result may probably be due to the immediate effect of the educational program sessions supported by the provided booklet about immediate postpartum care which was helpful as ongoing reference. However, 3 months later, the nurses' scores were somewhat reduced but still significant which may probably be due to the absence of the continuing training and education and work overload. By meaning of that improvement of knowledge post program in the current study may be attributed to the ability and interest of the nurses to gain and update their knowledge.

As well concerning overall performance regarding immediate newborn care, there was a significant improvement immediately and 3 months post program compared to preprogram (Fig 3). This finding is consistent with the study of

Berhe et al., (2017) ⁽²⁰⁾ who found that (76%) of health care providers carried it out regularly. Meanwhile inconsistent with **Chaudhary et al., (2015)** ⁽²¹⁾ who stated that the majority of staff nurses had good practice about overall immediate newborn care.

After implementation of the educational program most of the studied items of care were obviously and significantly improved in comparison with the findings before implementation of the educational sessions. This might be due to lack of knowledge, the neglecting part of nurses, and shortage in the number of nurses, shortage of necessary equipment and supplies and also poor documentation system. On the other hand, the finding is dissimilar to **Simbar et al., (2017)** ⁽²²⁾ whom their study demonstrated that the quality of care was weak among (12.95%) of nurses regarding many of domains of postpartum care.

Moreover, working nurses didn't have the privilege of continuing educational program which can highly increase their knowledge and improve their skills. Lack of continuous supervision and annual evaluation of their performance, lack of motivation, absence of job specification plus shortage in staffing all lead to overlapping when it comes to providing some items of care and neglecting the

others. In addition, early discharge after delivery decreases the time needed to provide the instructions and advices necessary for parturient women. Last but not least, it cannot be ignored that working nurses are overloaded with administrative duties beside their duties as health care providers.

The correlation between the total knowledge, total performance scores and socio demographic data among the studied nurses regarding immediate postpartum care in the present study revealed that, there was a positive statistically significant correlation between nurses' total knowledge score and between their age and educational level immediately and 3 months post program implementation. This study finding is compatible with the finding of **Ibrahim & Abdel-Menim (2016)** ⁽²³⁾, **Abd El-Fattah and Zein El-Dein (2012)** ⁽²⁴⁾ who disclosed a positive statistically significant correlation between nurses' total knowledge score and their educational level.

In relation to correlation between the total knowledge, total performance scores and socio demographic data among the studied nurses regarding immediate postpartum care, the present study revealed that, there was also a positive statistically significant correlation between nurses' total performance score and between their age

and educational level immediately and 3 months post program implementation than preprogram.

Furthermore, the present finding is in harmony with the study of **Jaber and Abbas (2011)** ⁽²⁵⁾. They reported positive statistically significant correlation between the studied nurses knowledge score and their educational level. This means that nurses' level of knowledge and practices is better with young ages and years of experience. Obvious improvements of total nurses' knowledge as well as performance scores were documented with significant statistically differences regarding immediate postpartum care immediately and 3 months post program compared to preprogram. From the researcher point of view, this improvement might be related to the fact that the majority of the nurses were young ages (less than or equal 30 years), more than one third of them had 10 to 20 years of experience and nearly one quarter of them had received training courses about immediate postpartum care. This might be due to that the older nurses delegated nursing activities to the younger nurses and have a little role of assigned clients beside their administrative roles.

V. Conclusion:

Based on the findings of the present study, it can be concluded that before implementation of the teaching program

regarding the effect of immediate postpartum care on nurses' knowledge and performance. There was an obvious lack of nurses' knowledge regarding the importance of the first 2 hours after delivery of the baby as well as unsatisfactory performance of the immediate postpartum care provided for the mothers and the baby before implementation of the teaching program. The findings of present study also revealed that after implementation of the teaching program immediately and 3 months later post program, there was a significant improvement of knowledge as well as performance among the studied nurses compared to preprogram.

VI. Recommendations

This study recommended conduction of planned in-service training programs for all nurses working in the postpartum wards regarding the importance of the first 2 hour immediately postpartum in order to improve their knowledge and performance and ultimately improving the quality of health care. In addition, further research studies are needed regarding the immediate as well as the general postpartum care to identify and overcome the gaps in the knowledge and performance among different health care providers.

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