

Effect of Instructional Program on Primipara Mothers' Knowledge Regarding Neonatal Care

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Abstract Care of newborn depends on a lot of knowledge, skills and attitude of the mother. The ideal basic needs for any newborn include warmth, cleanliness and breast feeding. The neonatal period is the most vulnerable time for a child's survival, in which face the highest risk of dying in their first month of life, so it can be prevented by proper and timely care of the newborn. **Aim of the study:** Evaluate the effect of instructional program on primipara mothers' knowledge regarding neonatal care. **Research design:** Quasi-experimental research design was used. **Setting:** The study was conducted at Maternal and Child Health Centers (Kebly & Bahary) at Shebin El-Kom-Menoufia Governorate, Egypt. **Subjects and methods:** A purposive sample of 100 primipara mothers who attended to maternal and child health center from June 2017 to September 2017. **Results:** The study was revealed statistical significant improvement of mothers' knowledge regarding to the neonatal care that were noticed at the post and follow-up test. **Conclusion:** Based on the findings of the present study, the primipara mothers' knowledge were increased after the instructional program and also the mother's had a good knowledge regarding neonatal care with statistical significant difference regarding the aspects of neonatal care knowledge in the post-test compared with the pre-test. **Recommendations:** Increasing the information and education regarding neonatal care at MCH centers for pregnant women especially primipara is required. Further researches recommended for increasing primipara mothers' awareness and enhancing their level of knowledge related to essential neonatal care which helps to reduce neonatal mortality rate.

Keywords: instructional teaching program, primipara mothers' knowledge and neonatal care

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1. Introduction

The first four weeks of neonatal life constitute the "neonatal period". Which considered one of the most sensitive life stages which requires a lot of care. While the mothers were the basic caregivers of the infants, so that the mothers' knowledge about care of the neonate during neonatal period need to be raised to increase mothers' confidence regarding infant care, reduce traditional false beliefs about neonatal care, and reduce neonatal morbidity and mortality rates [1,2].

Therefore, being aware of mother's knowledge about the neonatal care which is important in the promotion of society health. In fact, the fastest way to improve the public health can be achieved by promoting awareness through education [3]. World Health Organization [4] also emphasis on the importance of maternal and child health promotion that can be achieved through increasing knowledge and education.

Antenatal care coverage is good, but knowledge regarding newborn care is poor. With regards to the promotion of quality of newborns care, health education can improve the mothers' knowledge regarding care of the neonates. Essential newborn care practices were outlined to decrease the neonatal morbidity and mortalities. All new born babies require essential care to minimize the illness and maximize their growth and development [2,5,6].

Obimbo et al., [7] mentioned that, the ideal basic needs for any new born includes cord care, warmth, cleanliness, and breast feeding, which they are essential to minimize the illness and maximize their growth and development. Clearly, essential care of new born will help to prevent many newborn emergencies e.g. umbilical cord may be the most common source of neonatal sepsis and also of tetanus infection. Cord care could dramatically reduce the risks of these serious conditions. Shrestha et al. [8] added that, early breast feeding and keeping the baby close to the mother help to reduce the risk of hypothermia, as well hypoglycemia. Breast feeding also has a significant protective effect against infections.

One of the most significant contributions of the medical fraternity to mankind is the advent of vaccines. Parental decisions regarding immunization are very important for increasing the immunization rate, compliance and for decreasing any possible immunization errors. Parents' knowledge and practices regarding immunization are the major factors that contribute to their vaccination decisions. There are many barriers against immunization, including misinformation about vaccines. Improving parents' awareness, good knowledge regarding vaccination is required. Therefore, physicians, pharmacists, nurses, and others health care providers should provide parents with correct information about vaccines [9].

New born babies are at risk of infection if hygiene is not adequate. Good hygiene would reduce the likelihood of dermatitis and skin diseases being spread. The daily cleaning of the infant affords an excellent opportunity for making the observations that are necessary during the immediate post-natal period [10,11].

1.1. Significance of the Study

Recent researches are concerned with topics that are related to the care given to the newborn because it helps to protect the neonates against infection. Harmful practices regarding neonatal care were prevalent among mothers especially primipara, so educating those mothers is important, to create awareness about the essential obstetric and neonatal care which they are the key steps in achieving the goals of reproductive and child health care.

The mother is the key person in maintaining health status of her neonates. The care received to newborn from her mother, depends on the mother's knowledge and skills. Therefore, the current study was conducted to improve the knowledge of primipara mothers regarding the neonatal care.

1.2. Aim

To evaluate the effect of instructional program on primipara mothers knowledge regarding neonatal care.

1.3. Hypothesis of the Study

The following research hypotheses were formulated to achieve the aim of the study:

H1-The primipara mothers who will be subjected to instructional program about neonatal care will get higher neonatal care knowledge score.

H2 – Mothers' knowledge score of the post-test would be significantly higher than the pre-test regarding to the neonatal care at the level of $p < 0.05$.

H3- There is significant relation between pre and post - test knowledge score of the primipara mothers regarding neonatal care with their demographic variables at the level of $p < 0.05$.

2. Subjects and Methods

2.1. Research Design

Quasi-experimental research design was used in the study.

2.2. Setting

The study was conducted at Maternal and Child Health Centers (Kebly & Bahary) at Shebin El-Kom-Menoufia Governorate, Egypt

2.3. Sample

Purposive sample of 100 primipara mothers who had attended to the study settings from June 2017 to September 2017

Sample size: A purposive sample of 100 primipara mothers was recruited for the study, based on the Maternal and Child Health Center (Kebly & Bahary) statistics (2016) which revealed that the centers received approximately 8200 primipara mothers during this year.

The sample size was calculated by the following formula:

Yamanes formula: $n = N / 1 + N(e)^2$

$n = 8200 / 1 + 8200(0,10)^2$

n = sample size & N = Population size & e = Margin of errors which is 0,10 % & Confidence level = 90%.

2.4. Inclusion Criteria

Inclusion Criteria includes all primipara mothers that are pregnant at 24 weeks of gestation, who are available at the time of data collection and willing to participate in the study.

2.5. Data Collection Tool

It was included two parts as the following:-

Part (1): A Structured interview questionnaire: It was developed by the researchers to collect the necessary data after using extensive review of literature. it includes demographic data such as mother's age, education, occupation, residence, sources of neonatal care knowledge, and telephone number (for continues follow up if needed).

Part (2): Neonatal care questionnaire (pre- post and follow-up test): This tool was designed by the researcher through an extensive review of recent literatures. It was including data to determine the level of mothers' knowledge about newborn care, the tool included (7) items of neonatal care which included in the present study as maintenance of hygiene, maintenance of body temperature, umbilical cord care, eye care, establishment of breast feeding, burping and immunization. The tool includes 20 questions. The questions given to the mothers to be answered informs of "Yes" or "No". Knowledge scoring was done depending on the responses to the questions given by mothers and represented as follows, Score '1' for correct response and 'Zero' for wrong response and then the level of knowledge classified into poor from (0-5), average from (6-15) and good knowledge from (16-20).

3. Methods of Data Collection

3.1. Ethical Consideration

An official permission was granted from the director of the maternal and child health centers. The researcher

introduced themselves to the women who met the inclusion criteria and informed them about the purpose of the study in order to obtain their acceptance to share in this study. The researcher ensured that, the study posed no risk or hazards on their health and their participation in the study is voluntary. Pregnant women whose were willing to participate in the study and met the inclusion criteria were approached by the researcher and asked for verbal consent to confirm their acceptance, and all events that occurred during data collection were considered confidential.

3.2. Operational Design

The operational design includes preparatory phase, content validity, reliability, pilot study and fieldwork.

3.3. Preparatory Phase

It includes reviewing of literature, different studies and theoretical knowledge of various aspect of the problems using books, articles, internet, periodicals and magazines.

3.4. Validity and Reliability

Tool were submitted to a panel of four experts in the field of maternity nursing, obstetric medicine, family and community health nursing to test the content validity. Modification were carried out according to the panel judgment on a clarity of the sentences and appropriateness of the content. The reliability test was assessed by using Cronbach's alpha test and pilot study by using test-retest.

3.5. Pilot Study

It was conducted to test feasibility and applicability of the instrument and maneuver of interventions; it was also used to estimate the time needed to collect the data. It was conducted on a sample of 10% of total sample (10 primipara mothers). They were excluded from the main sample. The results of piloting were used to finalize the instrument and schedule the field work time needed. Some changes were made to the data collection tool according to the opinion of professors and the findings of piloting.

3.6. Field Work

The pregnant women at 24 weeks of pregnancy were asked by the researcher to participate in the study during their first visit to the MCH center, or at the visits for follow-up and vaccination. After obtaining ethical approval from the pregnant women and explained the purpose of the study, the address and telephone number of each participant was taken for follow-up. The time consumed in this phase was about 15 minutes to 20 minutes.

3.7. Procedures

The study was conducted through 3 phases: -

1. **Preparatory Phase:** An official permission to conduct the proposed study was obtained from the centers administrators. As well as, all participants

and healthcare providers were informed orally about the purpose, importance and benefits of the study.

2. **Interviewing phase:** The researcher met the primipara mothers at the center and introducing herself to the mothers also obtained their acceptance to be recruited in the study, as well as to gain their cooperation. The researcher explained the aim of the study, its importance, and its benefits to them. Interviewing phase was implemented in 2 steps: A) History taking and B) Knowledge assessment.

A. History taking: the mothers were interviewed to collect data related to personal and demographical data such as mother's age, education, occupation, residence, sources of neonatal care knowledge and telephone number (for continues follow up if needed).

B. Knowledge assessment: The researcher obtained the base line assessment to neonatal care knowledge of the mother using neonatal care questionnaire (pre-test). Pre -test for each mother take about 10–15 min.

3. **Implementation phase:** The researcher was providing instructional program regarding neonatal care through educational session in a group for all available mothers having the inclusion criteria and accept to participate in the study. The session was taken 30 min, they given in a simple Arabic language and a guided colored booklets given to each mother, at the end of the session, the researcher start to do the post-test for each mother which has taken 10–15 min.

4. **Follow-up Phase:** Follow up of the neonatal care mothers' knowledge done during the routine visits of the mother's to the MCH center (three months of the post -test). The mother's were asked to complete the questionnaire of the follow-up test (part 2).

4. Statistical Analysis

The data collected were tabulated and analyzed by using SPSS (statistical package for social sciences) statistical package version 20 on IBM compatible computer. Qualitative data were expressed as number and percentage (No & %) and analyzed by applying chi-square test.

5. Results

Table 1 showed that, (53 %) of the mothers in the studied sample had a secondary education, while (30%) had a university education. The family members are the main source of neonatal care knowledge of the mothers (34%). The mean age of the mothers are (20.51±1.64).

Table 2: indicated that, low mean score of the mothers' neonatal care knowledge regarding maintaining thermal protection, umbilical cord care, eye care and burping (1.28±0.88, 1.56±1.13, 0.90±0.69, 1.99±1.04) respectively.

Table 1. Distribution of Sociodemographic Characteristics of the Primipara Mothers in the Studied Sample (N=100)

Sociodemographic Data	(N = 100)	
	No.	%
Educational level:		
-illiterate	5	5
-Basic	12	12
-Secondary	53	53
-university	30	30
Occupations:		
House wife	31	31
Working	69	69
Residence:		
Urban	47	47
Rural	53	53
Sources of neonatal care knowledge:		
- Family members	34	34
- Friends	23	23
-Mass media and social media	26	26
-Reading	17	17
Age :	Mean ±SD 20.51±1.64	

Table 2. Pre-test Mean Score of the Primipara Mothers Regarding Neonatal Care Knowledge (N= 100).

Aspect of neonatal care	(N= 100)
	Mean ±SD
Maintaining Cleanliness and hygiene	3.18±1.10
Maintaining Thermal protection	1.28±0.88
Umbilical cord care	1.56±1.13
Eye care	0.90±0.69
Breastfeeding	2.17±1.15
Burping	1.99±1.04
Immunization	2.21±1.32

Table 3. Comparison between Pre and Post-test Neonatal Care Knowledge Scores among the Primipara Mothers (N=100).

Aspect of neonatal care	(N= 100)			t-value	P-value
	Pre-test	Post-test	Follow-up test		
	Mean ±SD	Mean ±SD	Mean ±SD		
Maintaining cleanliness and hygiene	3.18±1.10	4.99±0.98	5.01±0.78	8.01	<0.05
Maintaining thermal protection	1.28±0.88	2.54±0.85	2.94±0.74	10.99	<0.05
Umbilical cord care	1.56±1.13	2.73±0.60	2.88±0.78	11.23	<0.05
Eye care	0.90±0.69	1.96±0.65	1.88±0.76	10.13	<0.05
Breastfeeding	2.17±1.15	4.76±1.19	4.66±1.23	15.56	<0.05
Burping	1.99±1.04	2.62±1.12	2.76±1.45	12.55	<0.05
Immunization	2.21±1.32	4.45±0.98	4.48±0.96	15.87	<0.05

Table 3 indicated that, there were statistical significant difference between the primipara mothers regarding aspect of neonatal care knowledge in the post-test compared with the pre-test. The mean knowledge score in the post-test was higher regarding the cleanliness and hygiene, thermal protection, umbilical cord care, eye care, breastfeeding, burping and immunization which was (4.99±0.98, 2.54±0.85, 2.73±0.60, 1.96±0.65, 4.76±1.19, 2.62±1.12 and 4.45±0.98) respectively especially after the instructional program.

Figure 1 showed that, the (70 %) of the primipara mothers had a poor knowledge in the pre-test compared with (5%) in the post-test. While only (10%) of them had a good knowledge in the pre-test compared with 86% of them in the post-test.

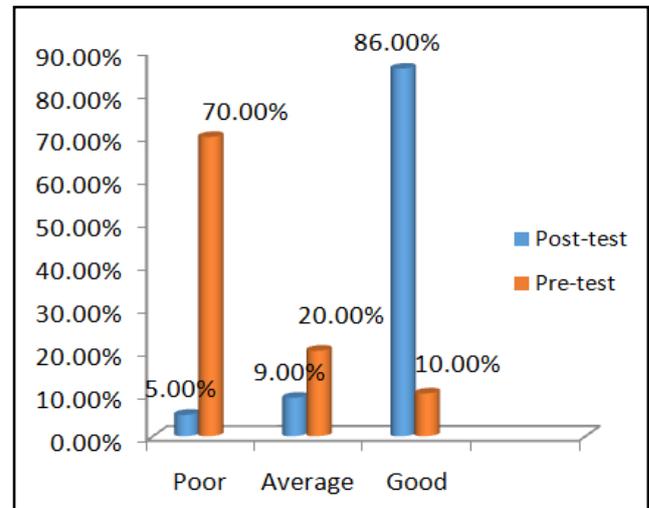


Figure 1. Pre and Post- Test Percentage Distribution of the Total Neonatal Care Knowledge Level among the Primipara mothers (N=100).

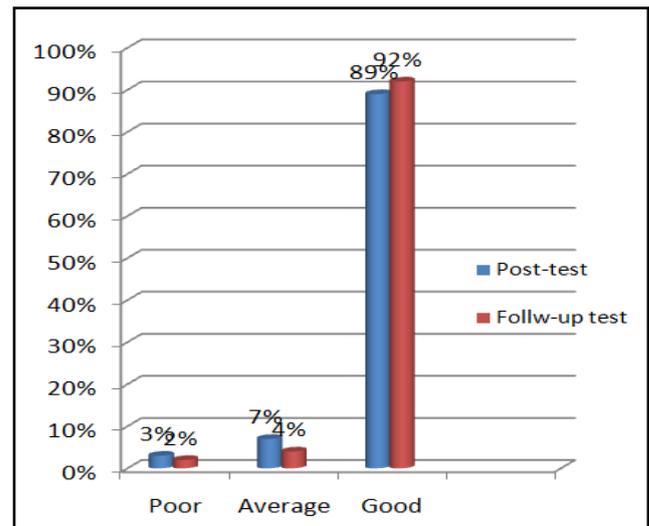


Figure 2. Post Test and Follow-up Test Percentage Distribution of the Neonatal Care Knowledge Level of the primipara mothers (N=100)

Figure 2 presented that (89%) of primipara mothers had a good neonatal care knowledge in the post test and (92%) of them had also a good neonatal care knowledge in the follow-up test

6. Discussion

The first step of any educational program is the recognition and prioritization of the educational requirements. Educational needs reflect the gap between what an individual knows and what he or she must know and do. The gap may be due to lack of knowledge [5,6]. Awareness of the mothers towards neonatal care has a lots of lacunae, so there is scope for improvement by providing better care and health education for antenatal mothers at primary care. Therefore, through this study, researchers

tried to highlight the effect of instructional program on primipara mothers' knowledge regarding neonatal care.

The current study revealed that half of the primipara mothers had a secondary education and the mean age of them were 20.51 ± 1.64 for this reason their knowledge was markedly changed regarding the neonatal care from pretest to the posttest & the follow-up test and this change showed a statistically significant difference. In the same line Klein [12] reported in their study "which conducted in Emirates" that there was a significant association between the level of neonatal care knowledge and selected demographic variables as educational level ($\chi^2 = 48.75$ & $p\text{-value} = .00$) and age ($\chi^2 = 5.008$ & $p\text{-value} = .024$). Mohamed et al., [3] reported that the mothers who had a secondary school education and increased maternal age were found to be a positively associated with at least one or more of maternal neonatal care knowledge.

Regarding the sources of neonatal care knowledge, the current study revealed that, about one third of the primipara mothers in the study receive their knowledge from the family members. This finding in accordance with Bowman [13] who showed that, there are a significant association between neonatal care knowledge and practice with demographic variables like age, educational level of the mothers and type of family knowledge, in which most of the newborn knowledge are received from the family.

Concerning maintaining thermal protection of the neonates, the results of this study showed that highest mean score of knowledge among the primipara in posttest compared with the pretest. This could be attributed to the sufficient basic information gained from the instructional program. This result in agreement with Huang et al., [14] reported in their study "which conducted in rural India" that thermal care is the component of essential newborn care by the mother's. Also Baqui et al., [15] added that, maintaining the normal body temperature is extremely important in newborn because of their larger body surface area.

The present study assessed the knowledge of primipara mothers about the maintenance of the cord care, the findings of the present study shows that, low mean knowledge score in the pretest compared with highest means score in the posttest. The results revealed that the instructional program had a significant effect on increasing the mothers level of knowledge, because lack of knowledge about the cord care affects the mothers' ability to make independent decision on cord care especially among the primipara. This finding in accordance with a study of Obimbo et al., [7,16] which has shown that the least knowledge score found in the pretest regarding the aspect of prevention of cord infection of the newborn. This finding congruent with study findings of Amy and John [17] who reported that, lack of knowledge of standard cord care is an important factor underlying unhygienic umbilical cord management among the mothers.

As regards to breast feeding there was statistical significant improving in primipara knowledge regarding the breast feeding in the posttest. This result could be due to the effect of program that given to primipara mothers. Similarly, [14,18] reported that the structured teaching was effective in improving the level of knowledge to all mothers which become knowledgeable about breast feeding and its advantages. The difference between the pre and post test scores was highly significant at $p\text{-value} < .05$

level. There was statistical significant relation between improving the mothers' knowledge and the educational program.

Concerning maintaining thermal protection of the neonates, the results of this study showed that highest mean score of knowledge among the primipara in posttest and follow-up test. In the line with Borrás et al., [19] who reported that, most of the previous studies found a strong relationship between pediatric immunization coverage and parental knowledge. This relationship showed a positive correlation between these factors. In other words, any increase in parental knowledge and practice will lead to increases in vaccination rates. Davis et al., [20,21] also revealed that although immunizations does not come under the essential newborn care practices, it is crucial that the mothers are imparted the elementary lessons regarding immunization. Although all the mothers in the present study were of the opinion that vaccines are essential, majority of them did not know which all disease can be prevented with vaccines. In addition, St-Amour et al., [22] showed that better knowledge of the mother especially the primipara about the vaccines would improve the vaccine coverage.

The current study revealed that there was statistically significant improvement on all aspect of neonatal care such as maintaining cleanliness and hygiene, maintaining thermal protection, umbilical cord care, eye care, breast feeding, burping and immunization in posttest compared with the pretest. Also World Health Organization [4] stated that integrated approach, like good feeding practice, immunization, good hygiene and healthy development of the neonates will help to reduce the neonatal mortality rates. Therefore, the investigator strongly feels the need to impart structure as teaching program on prevention of the new born hypothermia, initiation of breast feeding and prevention of the neonatal sepsis, that will help the mothers for better newborn care practice at home after discharge, hence the education place plays a vital role in reducing the newborn mortality rate.

The present study findings revealed that, about two thirds of primipara mothers in the pre test have a poor knowledge regarding total neonatal care knowledge. This finding was in agreement with Kadam and Tata, [23] who found that the majority of the participants mother's in the pre test had a poor neonatal care knowledge in Malawi. Also, Kuo et al., [24] who conducted a pre test study on primipara mothers' regarding neonatal care knowledge "reported that seventy percent of the mothers had inadequate knowledge while thirty percent had moderately adequate knowledge and no one had adequate knowledge".

The current study revealed that, there were improvement of the mother's level of neonatal care knowledge in the posttest compared with the pretest. From the researcher point of view the instructional program had a significant effect on studied mothers by increasing their level of neonatal care knowledge. This is because the mother is the most important person who looks after to meets the physiological and psychological needs of the newborn. The findings are supported by Mozafari et al., [25] who done a survey study conducted in 2016 which revealed that, the mothers' knowledge and practices were within good and satisfactory average scores in most of the studied items related to newborn care giving at home.

7. Conclusion

Based on the findings of the present study, it was concluded to:

The primipara mothers whose subjected to instructional program about neonatal care had improved in their knowledge at the post intervention program than pre intervention. Most of mother's had very good knowledge regarding newborn care after implementation of instructional teaching programme with statistical significant difference between the primipara mothers regarding aspect of neonatal care knowledge in the post-test compared with the pre-test.

8. Recommendations

Based on the findings of the present study was recommended that:

Integrate antenatal evidence based instructional program for pregnant women especially primipara about neonatal care at MCH centers. Further researches recommended for increasing primipara mothers' awareness and enhancing their level of knowledge related to essential neonatal care which helps to reduce the neonatal mortality rate.

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