Promoting Health Practices of Teenage Mothers Regarding Health Care of Their Infants

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ABSTRACT

Context: The care the infant receives depends a lot on the knowledge, skills of the mother. Teenage mothers are supposed to lack knowledge; practices of infant care need to improve their knowledge and practice for their infants**.**
Aim*:* This study aimed to evaluate promoting health practices of teenage mothers regarding the health care of their infants.
Methods: A quasi-experimental design was applied to achieve the objective of the study. The study was conducted in MCH centers (El Azab Health Center) located in the Cairo governorate**.** A convenience sample of 124 teenage mothers recruited in this study. They are aged between 16-20 years and have an infant from 1 month to 18 months. Three tools were used for data collection. The first tool was a structured interview questionnaire consisting of three parts: Socioeconomic-demographic data of teenage mothers and infants' characteristics. The second part included questions about teenage mothers' knowledge about their infant health care. The third part includes questions about infant medical history. The second tool includes a checklist of teenage mothers' practices related to the care of their infants, and the third tool includes infant physical assessment.
Results**:** The study's main results revealed that near two-thirds (65.3%) of the teenage mothers had good knowledge, and more than three-fifths of them (61.3%) can do practices acceptably toward their infant care post-program. There was a statistically significant relation between teenage mothers' knowledge and practice regarding their infants' care post-program at p=0.89.
Conclusion**:** Most teenage mothers post-program had a higher level of knowledge and practices regarding their infant care compared to the preprogrammed. The study recommended that special attention should be directed to teenage mothers and their infants to promote their knowledge and practices through health education programs for teenage mothers who should be informed about all aspects of infants' care in antenatal clinics, antenatal counseling, and postnatal classes.

Keywords: Health promotion, teenage mothers, infant care

1. Introduction

A teenage mother is an adolescent or teenage female whose age ranges between 13-19 years with a live baby. Teenage mothers are a concern for public health globally, and the occurrence of teenage pregnancy and birth is a problem in many countries *(Barnet, Rapp, De Voe, & Mullins, 2015).* Teenage motherhood is a global phenomenon affecting both developed and developing countries and constrains girls and young women to become pregnant and become teen parents at births to teens ages 15-19. Teenage mothers had difficulty in taking care of their children. These difficulties contribute to inadequate parent-child interactions and diminished infant development *(Stapleton, 2018).*

Teenage mothers are not ready to deal with motherhood. Teenage mothers want specific needs to know regarding the care of their infants and how to become an effective parent. Teenage mothers must devote their entire time and effort to infant care, including feeding, physical care, mental development, and protection from hazards *(Hockenberry & Wilson, 2015).*

EDHS *(2016)* reported that annually 20 million infants are born to women under age 20 worldwide, more than 90% in developing countries. In Egypt, according to *the Egypt Demographic health survey (2016)*, there are 13.971.100 teenagers aged 15-20 years, concerning the total number of population is 84.065.000. Most mortality in adulthood has its roots in a teenager period. In Egypt, approximately 10% of women marry before the age of 20 years.

Infancy is characterized by the need to establish harmony between the self and the world. This harmony is achieved through satisfying the helpless infant's needs, such as food, warmth, comfort, oral satisfaction, environmental stimulation, and chances to explore and express self. These challenges make infancy an exciting yet demanding period for infants and parents so that infants are the most vulnerable and high-risk group who need specialized health care, especially at home *(James, Nelson, & Ashwill, 2017).*

Infant health depends upon factors that include the teenage mother's practice about their health care needs, the infant environment after birth, and the availability of essential services such as physical examination and

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receiving appropriate immunization. It also depends on proper nutrition and other nurturing care *(James & Rebort, 2016).*

Improved infant care substantially improves survival. Evidence suggests that essential infant care practices, for example, feeding, hygiene, and recognition of danger signs and illness, are associated with significant causes of infant mortality. So, improved care practices for infants, postnatal contact with health providers, and increased care seeking for illness have demonstrated a significant reduction in infant mortality *(Jokhio, Winer, & Change, 2016).*

The health promotion notes that each person has unique personal characteristics and experiences that affect subsequent actions. The set of variables for specific knowledge and effect have important motivational significance. These variables can be modified through nursing actions. Health promotion includes health education, identification, and reduction of health risks. Health-promoting practices should result in improved health and a better quality of life at all stages of development *(Nola, 2014).* Health promotion interventions identify healthy people who are engaging in harmful practices or practices that increase susceptibility to risky health outcomes and attempt to motivate them to change their practices by modifying practices, improving skills, changing attitudes, and increasing knowledge and health care practices *(Rebecca, 2018).*

Community health nurses can play a unique role in helping teenage mothers learn about their infant's care and providing proper interventions. Nurses must work to understand the infant's practices better to help mothers interact with their infants. Teenage mothers' confidence is often lacking, and the educational program is therefore particularly important in providing information to enhance the mother knowledge and practices and health promotion to emphasize the community-based practice of health promotion, community participation, and health promotion practice based on social and health policies and implement health promotion in nursing *(Allender & Spradlelg, 2017).*

2. Significance of the Study

In Egypt, early marriage could occur as a child has reached the age of 18-20 years. In Egypt, especially Upper Egypt, females are often married, and their pregnancies are welcomed by family and society, so they had children before the age of 20 *(Abalkhail, 2014). UNICEF (2015)* reported that, annually, 13 million children are born to women aged under 20 worldwide, more than 90% in developing countries. So, it is significant to carry out this study about promoting health practices of teenage mothers regarding their infant care.

3. Aim of the study

The study aimed to evaluate promoting health practices of teenage mothers regarding the health care of their infants**.**

3.1. Research hypothesis

The health promotion program will improve knowledge and practice for teenage mothers about the health care of their infants.

4. Subjects & Methods

4.1. Research Design

A quasi-experimental research design was utilized to achieve the aim of this study.

4.2. Study setting

This study was conducted in Maternal and Child Health Centers ((Health Center El-Azab at El- Sharabia) located in Cairo governorate, where there is a high density of attendance and also serves the mothers with low- socioeconomic status.

4.3. Subjects

A convenience sample of one hundred and twenty-four (124) teenage mothers and their infants recurred to the MCH center to receive periodic vaccination. The mothers' age ranged from16 to ≤20 years. The size of the study samples is 124 teenage mothers selected randomly from MCH, where the number of teenage mothers in the previous year was about 1,240 in the year 2016, and 10% of total mothers were selected in the study.

4.4. Tools of data collection

The following three tools used for data collection

4.4.1. A Structured Interviewing Questionnaire

It was developed in the simple Arabic language by the researcher after reviewing related literature to evaluate health practices of teenage mothers related to health care of their infants and included the following parts.

Part 1 is concerned with assessing the socio-demographic characteristics of the teenage mothers, their husbands as regards mothers', infant fathers' age, occupation, educational level, family income/month, and their infants regarding the age of the infant, gender, and infant rank.

Part 2 is concerned with assessing teenage mothers' knowledge using closed and open-ended questions designed by the investigator based on reviewing the relevant literature *(Kahriman, Topbas, & Can, 2011).* This tool used pre-post application of the training program about the care of their infants as breastfeeding, artificial feeding, vaccinations, weaning, hygiene, sleeping pattern, accidents prevention, and diseases happen.

Scoring system

Each question allotted two points for the correct answer; if the answer is incomplete, it received one point, no points to the wrong answer. The total knowledge score of the questionnaire responses is classified into two score levels. The first was

- Less than 50% considered poor
- From 50-65% considered average
- More than 65% considered good

The second score level was as follow:

- ≥ 60 % considered a satisfactory level of knowledge.
- < 60 % considered the unsatisfactory level of knowledge.

Part 3 is concerned with infant medical history. The researcher developed it to collect vital signs, laboratory investigation (Hemoglobin ratio) from the medical record, and the infant's exposure to accidents and health problems. According to *Akre et al. (2010)*, the investigator adopted it to assess health infant condition regarding vital signs, temperature, pulse, and respiration. Hemoglobin ratio measured by standardized methods.

4.4.2. Mothers' Practice Observational Checklist

It aimed to assess the teenage mothers' practices about the care of their infant**.** A checklist sheet adapted from *El Sharkawi, El Sayed, Amin, Ibrahim, and El Rafea (2015),* was modified by the investigator to assess teenage mother's practices related to infant care. It embraced five care aspects. Breastfeeding includes (breast care before and after breastfeeding, the technique of breastfeeding, position the infant after feeding). It also included artificial feeding (the care of the instrument and the technique of bottle feeding). The third aspect of care was the infant's bath, measuring auxiliary temperature, and diaper care. This tool used the pre-post application of the training program.

Scoring system for the observational checklist

- Zero =not done.
- (1) = done incorrectly
- (2) = done correctly

Each checklist considered satisfactory if the total score (≥ 60%) and unsatisfactory if the total score (< 60 %) as follows.

4.4.3. Physical Assessment Record

It was adopted for *Ricci and Kyle (2016)* to assess infant growth rates from the medical record as regards assessing infant weight, height, head, and chest circumference, which measured in standardized methods. The investigator observed general conditions regard**ing** the eye, ear, nose, mouth, skin, extremities, and body movement and followed the systematized assessment of the total infant health condition stated in the health condition sheet in MCH Centers.

4.5. Procedures

Ethical consideration: Each study subject informed that the nature of the study would be harmless, all data will be confidential and will be used only for research purposes, and each study subject is free to withdraw at any time throughout the study. Each subject informed about the natural process and expected outcome of the study.

Preparatory phase: This phase included reviewing the available literature and different studies related to the research problem and theoretical knowledge of its various aspects of the study, using textbooks, evidence-based articles, and internet periodicals to collect the tools of this study. This period extended from (November 2017to September 2018). The researcher designed an educational program for teenage mothers regarding the health care of their infants over two months. A pilot study was carried out on 10% (12) teenage mothers with their infants, who excluded later from the main study sample. The pilot study was made to ensure clarity, the applicability of the study tool, the time needed for filling each tool and, the feasibility of the study. Then, some modifications did according to the pilot study findings.

Fieldwork started by introducing the investigator and explaining the study's purpose to teenage mothers, and the data ensured to be confidential and would only use for the study. The study consumed eleven months, preparatory about 2months, followed by six months for implementation and three months for data analyses and evaluation. It began on November 1, 2017, until the end of September 2018. The researcher visited the select MCH centers from 9.00 a.m. to 1.00 p.m. for three days weekly (Saturday, Monday, and Thursday). The researcher divided the study group (124), teenage mothers, into 11groups. Each group consisted of (10 to12) teenage mothers then started the educational sessions.

The educational program's total time was 7 hours (four theoretical and three practical). Each session started with a summary of what gave through the previous session and stated the objectives of the new one, taking into consideration using the simple and clear Arabic language. All teenage mothers received different methods of the program as face to face, and interactive program with a laptop. The researchers used effective media to convey information like posters, real objects, and infant care models. A booklet was constructed for teenage mothers as an educational reference after the program. It aimed to provide accurate information about the care of their infants. The handout was distributed to all teenage mothers after explanation.

Approval to carry out this study was granted from the Dean of Faculty of Nursing, Ain Shams University, and the Head of MCH approved it. The researcher visited the setting and conducted an interview with the teenage mothers to explain the objectives and the nature of the study and then carry out the study with minimum resistance.

4.6. Data analysis

The collected data was organized, coded, computerized, tabulated, and analyzed using the statistical package for social science (SPSS) version (20). Data analysis is accomplished using the numbers, percentages distribution, mean, standard deviation, correlation, paired t-test, and multiple linear regression analyses used to test the significance of some variances. No statistically significant difference was considered at $P>0.05$, and statistical significance difference was considered at $P <0.05$. High statistical significance difference considered at $P <0.01$.

5. Results

Table 1 shows that the teenage mother's mean age was 17.8±1.3. Regarding educational level, 38.7% cannot read and write. As regards teenage mothers' jobs, 61.3% were housewives. Also, this table shows that the mean age of fathers was 26.0±7.7. Regarding the educational level of the father, 37.1% cannot read and write. As regards fathers' job,

46.0% were the worker. Also, the family income of teenage mothers, 26.6%, had >1000 EP /month.

Table 2 reports that the infants of the teenage mothers ranged from <4-18 months with the mean age were 7.9±3.9. Regarding infants' gender, the table shows that 54.8% of them were females. As regards infants order, 52.4% were the second infant.

Table 3 presents that the infants of the teenage mothers had a high 10.5% temperature, 2.4% had an irregular pulse and high respiration. Regarding the investigation as hemoglobin level as doctor order, hemoglobin level was decreased at 12.9% of them.

Figure 1 illustrates an improvement in teenage mothers' total knowledge post-program implementation about all aspects of infant care with a statistically significant difference at (p=0.001).

Figure 2 demonstrates an improvement in teenage mothers' total practices post-program implementation toward all aspects of infant care with a statistically significant difference at (p=0.001).

Table 4 demonstrates a highly statistically significant positive correlation between teenage mothers' total knowledge and teenage mothers' total practices preprogram at p=0.001.

Table 5 illustrates a highly statistically significant positive correlation between teenage mothers' knowledge and teenage mothers' practices post-program implementation p=0.001.

Table (1): Frequency and percentage distribution of teenage mothers according to the socio-demographic characteristic (n =124).

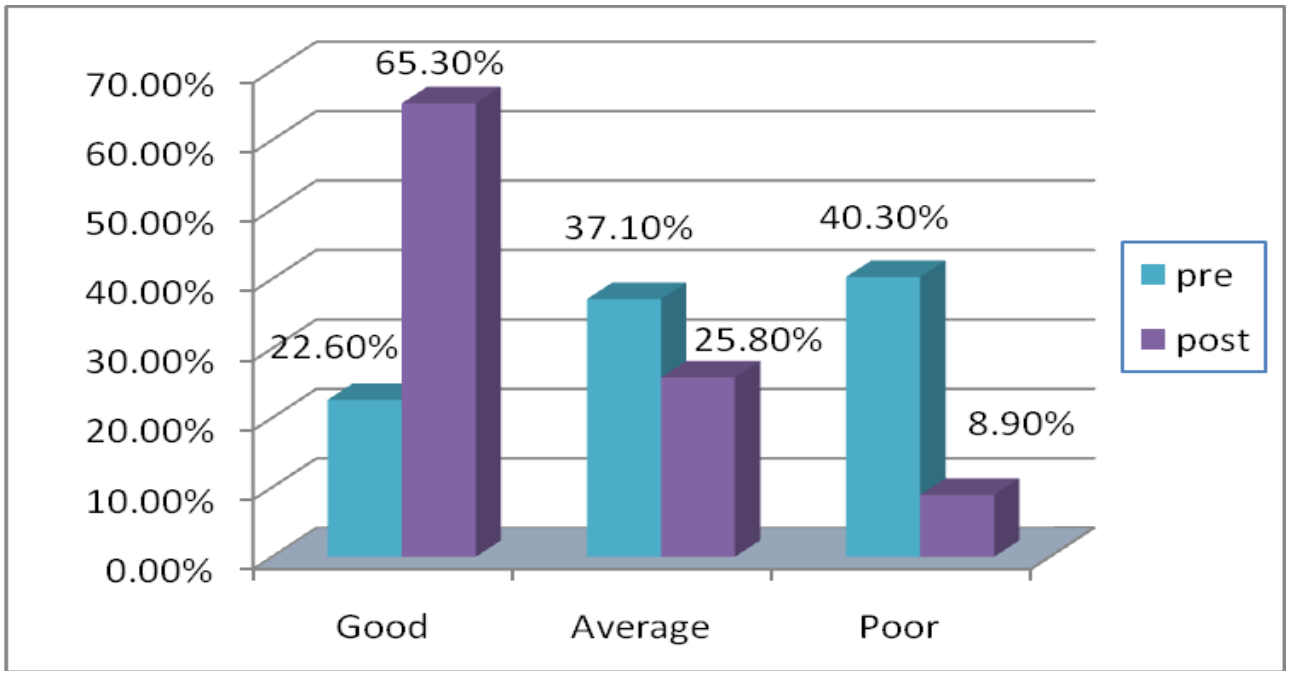
Variables	No	%
Age of mother		
<16	18	14.5
16-<18	45	36.3
18-≤20	61	49.2
Mean±SD	17.8±1.3	
Mothers' education		
Cannot read and write	48	38.7
Reading and writing	45	36.3
Secondary school	31	25.0
Mothers' job		
Worker	48	38.7
Housewife	76	61.3
Age of the infant's father		
Below 20 years	44	44
20-30 years	54	54
35 years and above	26	26
Mean±SD	26.0±7.7	
Fathers' education		
Cannot read and write	46	37.1
Reading and writing	43	34.7
Secondary school	23	18.5
High level	12	9.7
Father s' job		
Worker	57	46.0
Employee	49	39.5
Family income/month		
<500 EP	18	14.5
500<1000 EP	23	18.5
>1000 EP	33	26.6

Table (2): Frequency and percentage distribution of the infants according to their characteristics (n =124).

Variables	No	%
Age of infants		
<4 months	23	18.5
4-<6 months	44	35.5
6-18 months	57	46.0
Mean±SD	7.9±3.9	
Infant gender		
Males	56	45.2
Females	68	54.8
Infant rank		
1st	43	34.7
2nd	65	52.4
3rd	16	12.9

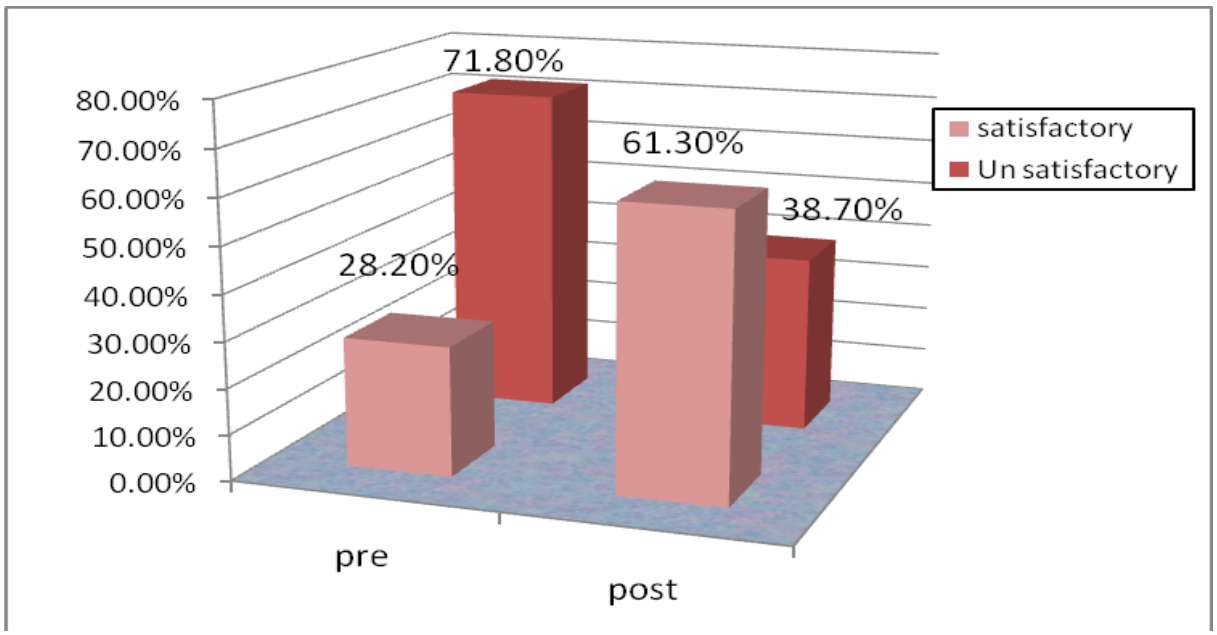
Table (3): Frequency and percentage distribution of infants according to their vital signs and investigation from the medical record (n =124).

Variable	N	%
Vital signs		
Temperature		
Normal	111	89.5
High	13	10.5
Pulse		
Regular	121	97.6
Irregular	3	2.4
Respiration		
Normal	120	96.8
High	3	2.4
Low	1	0.8
Investigation		
Hemoglobin level		
Normal	108	87.1
Low	16	12.9



(X2-Test=35.2, p value,0.001)

Figure (1): Percentage distribution of teenage mother's total knowledge about the care of their infants' pre & post-program (n= 124).



(X2-Test=32.7, p value, 0.001)

Figure (2): Percentage distribution of teenage mothers total practices level regarding infant care pre & post-program (n=124).

Table (4): Correlation between the total level of mother knowledge about infant care and their practice preprogram (n= 124).

The total level of teenage mother practice preprogram	The total level of teenage mother knowledge preprogram						Total No	r	P-value
	Poor n=50		Average n=46		Good n=28				
	N	%	N	%	N	%	124		
Unsatisfactory	42	84.0	21	45.7	2	7.1	65	0.91	0.001
satisfactory	8	16.0	25	54.3	26	92.9	59		

Table (5): Correlation between the total level of mother knowledge about infant care and their practice post-program (n= 124).

The total level of teenage mother practice post-program	The total level of teenage mother knowledge post-program						Total No	r	P-value
	Poor n=11		Average n=32		Good n=81				
	N	%	N	%	N	%	124		
Unsatisfactory	10	90.9	24	75.0	14	17.3	48	0.89	0.001
satisfactory	1	9.1	8	25.0	67	82.7	76		

6. Discussion

Teenage mothers need extra guidance, education, and support, as well as acceptance and reassurance. Teenage mothers had a specific need and want to know how to care for their infants and become effective parents. The educational program is therefore particularly important in providing information to enhance the mothers' knowledge and practices. Health promotion modifies practices, increases skills, changes attitudes, increases knowledge, and improves health care practices *(Mercer, 2017)*.

Community health nurses play essential roles in promoting and maintaining teenage mothers' and their infants' health by understanding the knowledge and care practices related to the infancy period *(Janice& Carolina, 2018)*.

This study aimed to evaluate the health practices of teenage mothers regarding the health care of their infants. The present study shows that the mean age was 17.8±1.3, ranged from sixteen to nineteen years old. This result was in the same line with a study conducted by *Gibbs, Wendt, Peters, and Hogue (2015),* on "The impact of early age at first childbirth on maternal and infant health," who stated that teenage mothers are defined as a teenage woman, usually within the ages of 13-19, becoming pregnant.

According to the characteristics of infants, the present study reveals that more than half of the infants were females, and the mean age was 7.9±3.9 months. The same findings were reported by *Kennell and Klaus (2017)* in the study "Effect of an educational program about newborn care on practice and confidence of pregnant teen mothers in Mansoura."

As related to the total level of teenage mothers' knowledge, findings of the current study illustrate that two-fifths of the studied teenage mothers in the preprogram had a poor knowledge level which improved to about two-thirds have good knowledge post-program implementation related to their infant's care with a statistically significant difference between pre and post-program. This finding was almost similar to findings of a recent study conducted by *Gebril, Shenouda, and Abou Abdou (2017),* on teenage mothers' knowledge and practice about infant care during the first year of life in Ismailia Governorate, which revealed that the majority of the studied sample had unacceptable knowledge level regarding infant's care which was not enough to care for their infant's properly, which significantly improved after implementation of education program. These findings agreed with *Ruffin (2018),* who reported that the majority of the studied mothers have incorrect knowledge preprogram, which improved post-program implementation. Also, these findings were highly supported by *Hockenberry (2015),* who mentioned that teenage mothers need the education to develop caregiving skills and understand the importance of infant care to reduce infant morbidity and mortality.

Concerning teenage mothers' practical skills regarding the care of their infants, the current study findings reveal a statistically significant difference between pre and post-program practice levels. Meanwhile, the highest total score of teenage mothers' practical skills observed among teenage mothers of the study post-program. These findings were following a study conducted by *El-Naggar (2017),* with a title of "discharge guide program for mothers' of infant care," who mentioned in a descriptive study that nearly two-thirds of teenage mothers' practices (62%) have not done while more than one-quarter of them (26.5%) have done incorrectly. Similar findings were reported by *Byenise and Wed (2016),* who studied the effect program on teenage mothers' level of practice regarding infant care.

The current study shows a statistically significant correlation between total practices and total knowledge in pre and post-program implementation for infant care. However, this finding was supported by *Masiha, Khalid, Malik, and Ali (2015),* who studied "teenage mothers' practices and knowledge in a survey of Pakistani" and found a highly statistically significant strong positive correlation between mean scores of knowledge and practices of teenage mothers. This finding showed that teenage mothers with increasing scores of knowledge were associated with increased scores of practices.

Besides, this finding was following *Adamson (2018),* who applied an educational program for infants and found a significant relationship between teenage mothers' knowledge and practices in pre- and post-program implementation.

Maxwell and Hammond (2016) recommended that the nurse help teenage mothers increase their competence in caring for their infant. The observation has widely confirmed that most changes in knowledge and practice result. Improvement in maternal and infant health practices is usually the result of education by a health worker or indirectly from someone a health worker has informed.

Hockenberry, Wilson, and Jakson (2017) mentioned that continuous health education programs targeting all teenage mothers are recommended to sustain the achieved goals and tackle deficiency areas. Public cooperation with health institutions still lacks people understanding, and awareness of health care is below average. The health education program will use the mass media to the general public, which were carefully selected, and a well-targeted mass end. It will make full use of all the possibilities offered by the formal education system.

Finally, by evaluating the effect of the educational program, an improvement was observed among the teenage mothers' practices. So, educational programs significantly contributed to the successful mothering role, and the research hypothesis is supported.

7. Conclusion

Based on the present study results, the following could be concluded: The results of the study show that teenage mothers' had a lack of knowledge & inappropriate practices as regard care of their infants at preprogram implementation. Significant improvement in teenage mothers' knowledge and practices detected in post-program implementation. A statistically significant correlation between teenage mothers' knowledge and teenage mothers' practice regarding their infant care pre & post-program supports the research hypothesis.

8. Recommendations

- Conduct continuous various education programs for teenage mothers, who should be informed about all aspects of infants' care during this phase of life for raising the awareness of teenage mothers and correct their knowledge and their practice toward infants' care.
- Apply for intervention educational programs at an infant clinic or child health service should be made periodically after birth about all aspects of infants' care.

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