

Effect of an Educational Program about Newborn Care on Practice and Confidence of Pregnant Teen Mothers

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Abstract: This study aimed to evaluate the effect of an educational program about newborn care on practice and confidence of pregnant teen mothers.

Subjects and methods:

Design: Quasi experimental design.

Setting: Antenatal Care Outpatient Clinic of Mansoura University Hospital.

Subjects: Convenience sample of 60 pregnant teen mothers; aged between 15 to 19 years old, primigravida with singleton fetus, and at ≥ 37 weeks of pregnancy.

Tools: A structured questionnaire was used to assess the pregnant mother's demographics, newborn care checklist to assess the practice of newborn care, and maternal confidence scale to assess the mother's confidence degree.

Results: Practice score level after training were significantly higher than the baseline score (19.6 ± 11.2 versus 51.1 ± 12.6 respectively), $p < 0.001$). The majority (96.7%) of teen mothers were highly confident regarding their newborns care while only 3.3% had indifferent confidence score regarding their newborns care after training.

Conclusion and recommendations: The present study concluded that all teen mothers had score level after program was significantly higher than the baseline score about practice and maternal confidence scale regarding their newborns care. Based on the findings of the present study recommended that; teens need programs aimed at preventing pregnancy, regular medical and nursing antenatal care and apply intervention educational programs in maternal and child health center for pregnant teen mothers.

Keywords: Educational program, pregnancy, teen mother, newborn, nursing

I. Introduction

Teenage pregnancy is defined as a teenage girl, usually within the ages of 13-19, becoming pregnant. This term refers to girls who have not reached legal adulthood, which varies across the world, who become pregnant [1]. Also, it is pregnancy in human females under the age of 20 at the time that the pregnancy ends. A pregnancy can take place in a pubertal female before menarche (the first menstrual cycle), which signals the possibility of fertility, but usually occurs after menarche. In addition; menarche usually takes place around the age of 12 or 13 in well-nourished girls [2, 3, 4].

Complications of pregnancy and childbirth are the leading cause of mortality among women aged 15-19 in such areas. Teen childbearing is associated with adverse health and social outcomes for teen mothers and their children, although these outcomes often reflect preexisting social deficits. Compared with women who delay childbearing until their 20s, teen mothers are more likely to drop out of school and have low educational attainment; to face unemployment, poverty, and welfare dependency; to experience more rapid repeat pregnancy; to become single mothers; and to experience divorce. Infants of teen mothers are more likely to be premature and experience infant mortality. The children of teenage mothers do less well on indicators of health and social wellbeing than do children of older mothers [5, 6, 7].

Early motherhood can affect the psychosocial development of the infant. The children of teen mothers are more likely to be born prematurely with a low birth weight, predisposing them to many other lifelong conditions. Children of teen mothers are at higher risk of intellectual, language, and socio-emotional delays. Developmental disabilities and behavioral issues are increased in children born to teen mothers. In addition; teen mothers are less likely to stimulate their infant through affectionate behaviors such as touch, smiling, and verbal communication, or to be sensitive and accepting toward his or her needs. In convert; those who had more social support were less likely to show anger toward their children or to rely upon punishment. Poor academic performance in the children of teen mothers has also been noted, with many of them being more likely than average to fail to graduate from secondary school, be held back a grade level, or score lower on standardized tests. Daughters born to adolescent parents are more likely to become teen mothers themselves [8].

Fortunately; successful mothering has a major impact on the emotional well-being and cognitive development of children. Infants gain their sense of self at an early age through their interactions with their mothers. Nurses can therefore play a unique role in helping mothers learn about their infant's behavior and in

providing interventions to foster positive mother infant interactions [9, 10, 11, 12, 13]. Additionally; nurses must work to understand infant's behavior better, so they can help mothers interact with their infants. Obstetrics and Neonatal nurses can learn to interpret infant behavior if they take into account not only the behavior but also the situation in which it occurs, including the maturity and health of the infant [14]. Adolescent pregnancy and parenting remain a major public concern because of their impact on maternal-child health and on the social and economic well-being of the nation. So nursing intervention program applied to improve mother and child health and social outcomes for disadvantaged adolescent mothers to promote their self-sufficiency especially during their infant care and can significantly contribute to successful mothering role & positive feeling towards motherhood. Adolescent mothers confidence are often lacking and the educational program is therefore particularly important in providing information to enhance the mothers self-esteem and confidence in their abilities[15].

Significant of the study

Teen births were accounted for 7.8% of all births in 2012 by United State. The birth rate for U.S. teenagers (ages 15 through 19) increased in 2006 and 2007 after a steady decline since 1991. However; in each of 2008 through 2012, the teen birth rate dropped below the 2006 teen birth rate, reversing the two-year upward trend. Although the birth rate for U.S. teens has dropped in 21 of the past 23 years, it remains higher than the teen birth rate of most industrialized nations. Preventing teen pregnancy is generally considered a priority among policy makers and the public because of its high economic, social, and health costs for teen parents and their families [3].

Adolescent parenthood can have substantial negative consequences for both the parents and their children. Teenagers who give birth are less likely to receive a high school diploma or postsecondary degree than women who delay childbearing. In turn, children of teenage mothers are more likely to become teen parents themselves and are incarcerated at higher rates than children of mothers who postponed childbearing until after age 20. All told, the impacts of teenage parenting accumulate throughout generations, imposing an estimated \$27.8 billion in social costs in the U.S. each year [4, 5].

Pregnant teenagers' face many of the same obstetrics issues as other women. There are additional medical concerns for mothers aged fewer than 15 [6]. For mothers aged 15–19, risks are associated more with socioeconomic factors than with the biological effects of age. However, research has shown risks of low birth weight, premature labor, anemia, and pre-eclampsia are connected to the biological age itself, as it was observed in teen births even after controlling for other risk factors (such as utilization of antenatal care etc.) [9,10]. Teenage pregnancy in developed countries is usually outside of marriage, and carries a social stigma in many communities and cultures. By contrast, teenage parents in developing countries; as in Egypt especially upper Egypt; are often married, and their pregnancies welcomed by family and society. However, in these societies, early pregnancy may combine with malnutrition and poor health care to cause medical problems [11]. So, it is significant to carry out this study about nursing intervention educational program for pregnant teen mothers regarding to their newborns care.

Study hypotheses

To achieve the aim of this study, two hypotheses were tested:

Hypothesis I: "Teen mothers who participate in the educational program exhibit higher scores for practice of newborn care than those who do not participate".

Hypothesis II: "Teen mothers who participate in the educational program exhibit higher scores for self-confidence of newborn care than those who do not participate".

II. Subjects And Methods

2.1 Aim of the study

The aim of this study was to evaluate the effect of an educational program about newborn care on practice and confidence of pregnant teen mothers.

2.2 Study design

A Quasi-experimental research design was used to conduct this study.

2.3 Study setting

The present study was conducted at the Antenatal Care Outpatient Clinic of Mansoura University Hospital, Mansoura city, Egypt.

2.4 Sampling

A convenience sample of 60 teen mothers; who attended the study setting between of July to December 2015, was enrolled in this study when they fulfilled the following inclusion criteria:

- Aged between 15 to 19 years old
- Primigravida with singleton fetus

- At gestational age ≥ 37 weeks
Multiple births, premature newborns and newborns with any health problems or congenital anomalies were excluded from the study.

2.5 Tools of data collection

The data were collected using the following tools:

Tool I: Structured questionnaire

This tool was developed by the researchers after reviewing the relevant literature. It was written in simple Arabic language and entailed the mother's demographic data (i.e., age, educational level, types of family, residence and mother order), and current pregnancy data like number of gravidity, antenatal care visits attendance, and gestational age at enrolment. Additionally, neonatal outcomes of the current pregnancy; in terms of gender, birth weight, and Apgar score at the first and fifth minutes were also included. This tool was filled by the researchers

Tool II: Newborn care checklist

It was adopted from Wong et al (2005) and Pak Med Assoc (2009) [16, 17] and used to assess the practice of newborn care. Seven procedures were evaluated to express collectively the newborn care (i.e., eye care, cord care, diaper care, bathing, measuring axillary temperature, and breast and bottle feeding techniques). Each procedure scored of 10 points to make a total score of 70 (100%). Each teen mother was observed during the actual care of her newborn. Using the newborn care checklist the score of each procedure was obtained by the researchers, and then the newborn care total score was calculated and classified either as satisfactory score ($\geq 50\%$), or unsatisfactory ($< 50\%$).

Tool III: Maternal confidence scale

It was adopted from Bradly (1983) to assess the teen mother's psychological consequences & intervention toward care of their newborns. It was comprised of eight statements, in which five statements (2, 4, 5, 6 and 8) were worded as a positive or highly-confident response and the other three statements (1, 3 and 7) as a negative or poorly confident response. All statements were scored on a scale from 1 to 3, where highly confident scored 3, indifferent confident scored 2 and poorly confident scored 1. For analysis, all negative statements were reverse scored. So, a higher score would indicate a highly confident mother. Thus, a total score from 17 – 24 indicates highly confident state, score from 8 - < 17 means indifferent confident, while score of less than 8 means poorly confident [18].

Validity and reliability of tools

Tool I was reviewed by a panel of three expertises in the maternity nursing specialty before introducing them to the participants to ensure its validity and their comments were considered. While the second and third tools were standardized; thus their reliability were tested giving Cronbach's α of 0.98 for the second and 0.88 for the third tool.

2.6 Administrative design

Official permission was obtained from the Director of Mansoura University Hospital. As will as the head of the Outpatient Clinics of Mansoura University Hospital.

2.7 Ethical considerations

Informed consent was obtained from each participant after clarifying the study nature and aim and women were assured about the confidentiality of the collected data as will they were informed that they have the right to withdraw during the study period.

2.8 Pilot study

The purpose of the pilot study was to test clarity and applicability of the study tools and time required to fill each tool. The pilot study was done on 10% of the study sample (n= 6 mothers and their newborns). The pilot group was excluded from the study sample.

2.9 Research procedure

2.9.1 Preparation

Review of the literature covering various aspects of the newborn care was done using available books, articles, periodicals and magazines, in order to develop the study tools of data collection and prepare the educational program. Before starting the program, the researchers introduced themselves to the teen mothers,

gave them a brief idea about the study aim and nature to obtain their written consents. The interview took from 15 to 20 minutes.

2.9.2 Program implementation

The researcher visited the study setting three days weekly during the study period to collect the required sample. The educational program was carried out at the antenatal outpatient clinic, Mansoura University Hospital, Mansoura city, Egypt. It was provided through two sessions; the first session was theoretical and was concerned with the importance, items, and risks associated with improper eye care, cord care, diaper care, bathing, measuring axillary temperature, and breast and bottle feeding techniques; while the second session was practical; firstly by the researchers and then by each participant to redemonstrate each procedure of the seven procedures.

Sessions provided to the participants on small groups (n= 5 pregnant mothers/group), giving a total number of 12 groups. Each session took about 60-120 minutes excluding the time of the pretest assessment and time of discussion. Information was provided using simple words in Arabic language to suite the pregnant mother's level of understanding. At the end of each session, participants' questions were answered to correct any miss understanding.

Different teaching strategies were used to conduct the program such as modified lectures, small group discussion, demonstration and redemonstration using real suitable teaching aids like dolls. The researcher told the participants that each one will be visited at one week postpartum to assess their practice and confidence of newborn care and collect the required data.

2.9.3 Evaluation of the study outcomes

Two outcomes were assessed in this study; the teen mother's practice and confidence on care of their newborns; at baseline immediately before receiving the educational program in the outpatient clinic and one week postpartum at the participant's home.

2.9.4 Limitation of the study

Limitation of current study was that the small sample size.

Statistical analysis

Data were collected, coded, organized, categorized, and then transferred into especially designed formats. The statistical analysis of data was done by using SPSS program (statistical package for social science) version 20.0. The data was tabulated and presented. The description of the data was done in form of mean and standard deviation for quantitative data, frequency and proportion for qualitative data. For quantitative data t- Test was used to compare between two groups. For qualitative data (frequency and proportion), Chi- square test was used. The correlations between the quantitative variables were tested using the Pearson correlation test. Statistical significant difference was considered at $P < 0.05$, and highly significant difference at $P < 0.001$.

III. Results

The teen mothers had an average age of 18.4 ± 0.9 (range = 16 – 19 years) at time of delivery. The residence of 53.3% and 46.7% of these teen mothers was rural and urban respectively. As regards the educational level and 53.3% and 46.7% of these teen mothers were in secondary school and university respectively. The majority (61.7%) of these teen mothers lived in an extended family while 38.3% lived in a single family. As regards the birth order of the mother in her family, 36.7% were born first, 33.3% were born somewhere in the middle and 30% were born last (Table 1).

In the present study 60 teen mothers was enrolled. The average gestational age at delivery was 37.5 ± 0.7 weeks. The newborn babies (56.7% females and 43.3% male) had an average birth weight was 3009.2 ± 106.4 grams. Gravida 2 was 35%. Apgar score mean at 5 min was 9.35 ± 0.97 and only 40% of the mothers reported that they received antenatal care (Table 2).

In the current study, the total practice score level was (10-70). As regards the previous score level after the period of training was significantly higher than the baseline score ($p < 0.001$). The teen mothers had 5% of practice score level before the period of training while 96.7% had practice score level after the period of training at satisfactory score $\geq 50\%$ (Table 3).

Figure 1 showed that (19.6 ± 11.2 versus 51.1 ± 12.6 respectively) was the mean total score of teen mothers' practice at baseline and post intervention ($p < 0.001$).

Before training, 30% and 70% respectively of the teen mothers had poor and indifferent confidence score regarding their newborns care while after training, the majority (96.7%) of the teen mothers was highly confident regarding their newborns care while only 3.3% had indifferent confidence score regarding their newborns care. The teen mothers had confidence score after the period of training significantly higher than the baseline score ($p < 0.001$) (Table 4).

Figure 2 reported that total score mean of teen mothers' confidence regarding their newborns care was 9.5 ± 4.4 at baseline and 19.9 ± 2.8 post intervention. The teen mothers had confidence score after the period of training significantly higher than the baseline score ($p < 0.001$).

Table 1. Demographic characteristics of the participants n=60

Parameters	Frequency		Descriptive	
	N	%	Range	Mean \pm SD
Age/year			16 – 19	18.4 \pm 0.9
Residence	Rural	32 53.3		
	Urban	28 46.7		
Educational level	Secondary school	32 53.3		
	University	28 46.7		
Family type	Single	23 38.3		
	Extended	37 61.7		
Mother order	First	22 36.7		
	Middle	20 33.3		
	Last	18 30		

Table 2. Current pregnancy data and neonatal outcomes (n=60)

Parameters	Frequency		Descriptive	
	N	%	Range	Mean \pm SD
A. Current pregnancy data				
Gestational age/week			37 – 40	37.5 \pm 0.7
Gravida	1	39 65		
	2	21 35		
Antenatal care	Yes	24 40		
	No	36 60		
B. Neonatal outcome of current pregnancy				
Apgar score				
At first minute			6-8	6.90 \pm 0.450
At fifth minute			9-10	9.35 \pm 0.97
Birth weight (gms)			2850 – 3200	3009.2 \pm 106.4
Sex of newborn	Female	34 56.7		
	Male	26 43.3		

Table 3. Comparison of the frequency of the teen mothers' practice score of newborn care at baseline and post intervention (n=60)

Parameters	Total practice score (10-70)				Chi square test	
	Pre		Post		X ²	P
	N	%	N	%		
Score level of teen mothers' practice at satisfactory score \geq 50%	3	5	58	96.7	9.751	<0.001
Score level of teen mothers' practice at unsatisfactory score < 50%	57	95	2	3.3		

Figure 1. Comparison between mean total score of teen mothers' practice at baseline and post intervention n=60

Total practice score (10-70)

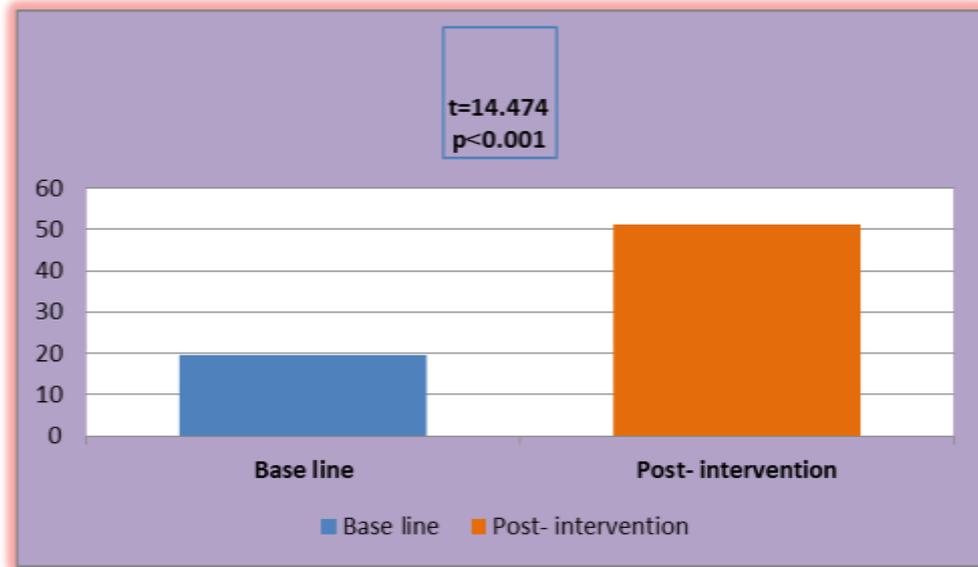
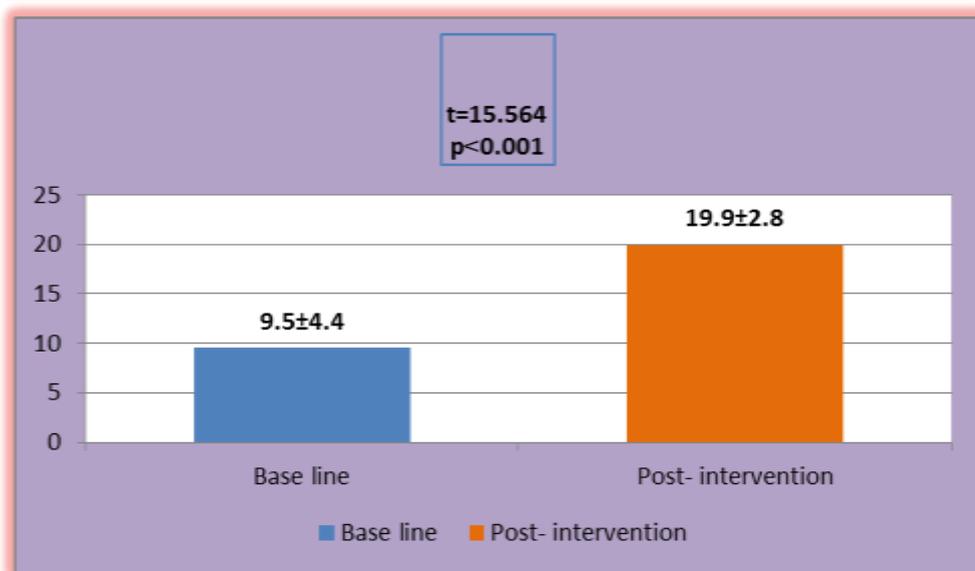


Table 4. Comparison between teen mothers' confidence total score at baseline and post intervention n=60

Degree of confidence	Baseline		Post intervention		Chi square test	
	N	%	N	%	X ²	P
Poor confidence score from 1-< 8	18	30	0	0	112.364	<0.001
Indifferent confidence score from 8-< 17	42	70	2	3.3		
Highly confident score from 17-24	0	0	58	96.7		

Figure 2. Comparison of mean total score of teen mothers' confidence regarding their newborns care at baseline and post intervention n=60



IV. Discussion

This study aimed to evaluate the effect of an educational program about newborn care on practice and confidence of pregnant teen mothers. The present study findings revealed that the teen mother's skills and confidence on care of their newborns were statistically significantly developed. Accordingly, the study hypotheses were accepted

Hypothesis I: "Teen mothers who participate in the educational program exhibit higher scores for practice of newborn care than those who do not participate".

Hypothesis II: "Teen mothers who participate in the educational program exhibit higher scores for self-confidence of newborn care than those who do not participate".

The results of this study discussed within the frame of the references that study the effect of an educational program about newborn care on practice and confidence of pregnant teen mothers. According to the characteristics of newborns, the present study revealed that more than half of newborn were females and mean gestational age at delivery was 37.5 ± 0.7 weeks. The same conclusion was supported by Kennell and Klaus (2009) who stated that the newborn sex has no effect on gestational age [19, 20]. As regard the characteristics of the teen mothers, the present study showed that mean age was 18.4 ± 0.9 ranged from sixteen to nineteen years

old at time of delivery. This result was in the same line with Gibbs et al (2012) who stated that the teenage pregnancy is defined as a teenage woman, usually within the ages of 13-19, becoming pregnant [2].

Regarding the residence of the teen mothers, the present study revealed that more than half of them were lived in rural area. In the same context; Santhya (2011) stated that growing up in economic or social disadvantage was found to be a strong predictor of early childbearing countries. Also; a greater proportion of teens live in rural area where a higher pregnancy and birth rates are present [21]. As regards the educational level; the present study revealed that more than half of teen mothers were in secondary school and more than half of them are still in education. This result was supported by Hofferth et al (2002) who stated that teen mothers are more likely not complete of high school and found that women who gave birth during their teens completed schooling while 43.3% had completed their education over his or her sexual behavior [22]. The previous result was in contrast with Lawlor and Shaw (2004) who stated that teen mothers are more likely to complete of high school [23]. This discrepancy between the finding of current study and the previous study might be related to differences in sample size and nature culture. In Many aspects of family life effect on a teen's decision making to become sexually active, teen pregnancy, use contraception, or continue with a pregnancy.

The present study revealed that less than half of teen mothers were had antenatal care. Kenner et al (2008) who was at the same line stated that antenatal care refers to the regular medical and nursing care recommended for women during pregnancy. Prenatal care is a type of preventative care with the goal of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child and added that prenatal care generally consists of: Monthly visits during the first two trimesters (from week 1–28), fortnightly visits from 28th week to 36th week of pregnancy, weekly visits after 36th week until delivery (delivery at week 38–42) and assessment of parental needs and family dynamic and concluded that the availability of routine prenatal care has played a part in reducing maternal death rates and miscarriages as well as birth defects, low birth weight, Apgar score, other preventable health problems and has no effect on newborn sex. Recommendations on management and healthy lifestyle changes are also made during regular check-ups [24] that were in accordance with the current study results.

The result of the present study revealed that the practice score level after training was significantly higher than the baseline score. This finding was in disagreement with Kenner et al (2008) who stated that an educational program for newborn's parents can't improve their practice [24]. The discrepancy between the findings of current study and the previous study might be related to differences in the care provided to the teenage woman. Additionally; in the same line of current study; El-Wardany (2006) reported that the mother who received health education program about care of their child can enhance continuity of care and improved child care [25].

Regarding to mother confidence during their newborns care, the present study demonstrated that there was a high statistically significant difference between pre and post program for teen mother. Whereas; nearly three fourth of mothers had indifferent confidence score preprogram compared to the great majority of teen mothers were highly confident regarding their newborn care post program. This may be attributed to the actual support during newborn care for teen mothers by researcher that helping the teen mothers to feel satisfied during their newborn care is consider very important factor for increase sense of teen mothers confidence during their newborn care. This result was in accordance with Brooten et al (2008) and Watson (2003) who stated that maternal confidence are often lacking and the health program is therefore particularly important in providing information and advice to inexperienced mothers to enhance the mothers self-esteem and confidence in their abilities [26, 27]. These findings were in disagreement with Prenatal Care. U.S. National Library of Medicine (2015) who stated that the health program is not always affects the mother's confidence [28]. This discrepancy between the findings of current study and the previous study might be related to differences in sample size and nature culture.

Finally, by evaluating the effect of nursing interventions educational program, an improvement was observed among the mothers' practices. So, intervention educational programs significantly contributed to successful mothering role.

IV. Conclusion

The present study concluded that all teen mothers had score level after program that was significantly higher than the baseline score about practice and maternal confidence scale regarding their newborns care.

V. Recommendations

Based on the findings of the present study recommended that; poor and high-risk teens need programs aimed at preventing pregnancy, regular medical and nursing antenatal care and apply intervention educational programs in maternal and child health center for pregnant teen mothers.

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