

SUMMARY

Premature infants represent the highest percentage of high risk group, it account for the largest number of admissions to the NICUs. Fortunately, the majority of premature infants discharged from the NICUs thrives and develop normally, some will experience medical problems and developmental delay, and these include hypothermia, increased susceptibility to infections, difficulties of growth and feeding, apnea, bradycardia, respiratory problems, fine and gross motor abnormalities and other learning problems (*Kenner and Lott, 2004, and Jenkins, 2010*).

Mothers are faced with the problem of learning about the special care needs of premature infants and how they differ from the needs of full term infants. Ideally parents are involved in the physical care of their infants before discharge and developmentally supportive care practiced in the NICUs helps them to adapt to the behavior of premature infants. On the other hand, comprehensive long-term follow-up care is especially important for every premature infant because of the incidence of significant handicaps and appropriate treatment when indicated will improve the outcome (*Littelton and Engebreston, 2005; and Wong et al., 2007*).

Aim of the study:

The aims of this study were to:

- 1- Assess mothers' knowledge and practice about care of their premature infants before discharge from the NICU.
 - 2- Design and implement an educational program based on actual mothers' needs assessment.
 - 3- Evaluate the effect of the program on mothers' knowledge and practice about care of their premature infants post discharge.
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Subjects and Methods:

A) Research Setting:

This study was conducted in the NICUs at Benha Children Specialized Hospital, Benha University Hospital, and Benha Teaching Hospital. Follow up was carried out on pediatric out patient clinics in the previously mentioned settings.

B) Subjects:

Subjects composed of one hundred (100) mothers of premature infants. They were chosen from the previously mentioned settings. In each setting fifty (25) premature infants and their mothers were selected randomly (simple random sample); they were divided into two equal groups (50 as a control group and 50 as a study group).

The criteria for the selected sample include:-

- Any live born infant delivered before 30-37 weeks of gestation.
- Both sexes were included.
- Premature infants were selected during weaning phase from incubator (at least 2 days before discharge from NICU).

The criteria for exclusion include:-

- Premature infants were free from any congenital anomalies.

C) Tools of data collection:-

Data were collected by using the following tools:-

- Interview Questionnaire Sheet.
- Maternal observational checklists.
- Maternal Confidence Scale.
- Bonding Behavioral Scale.

These tools were used twice pre and post program.

- Infants' follow-up monitoring Sheet.
 - Discharge Guide Program.
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I- Interview Questionnaire Sheet:

It was prepared by the researcher after reviewing of related literatures and reviewed by supervisors. It composed of the following items:

- **Biosocial data of premature infant** such as; Gestational age, sex, anthropometric measurements (birth weight, length, head and chest circumference), Apgar score, and birth order.
- **Biosocial data of mother** such as; Age, level of education, and employment.
- **Mother's knowledge regarding reported practice about care of their premature infants** such as; feeding, weaning, hygienic care (as eye, cord, and diaper care, bathing, elimination pattern, safety measures, measuring axillary temperature, sleeping, immunization, protection from infection, hypothermia, high risk signs & symptoms such as; convulsion, cyanosis, respiratory distress, feeding problems, and alteration of activity).

2- Maternal observational checklists about their premature care namely; hygienic care, measuring axillary temperature, breast and bottle feeding technique:

It was used to assess the actual mothers' practices regarding hygienic care of their premature infants which includes; eye, cord, and diaper care, bathing, measuring axillary temperature, breast and bottle feeding techniques, and methods of drugs administration at home (oral, otic, optic, nasal, and rectal).

3- Maternal Confidence Scale:

It was adopted from *Bradly (2008)*, and used to assess the mothers' psychological consequences of intervention towards care of their premature infants.

4- Bonding Behavioral Scale:

It was adopted from *Grant (2006)*, it aimed to assess the mothers' emotional and behavioral interactions with their premature infants.

5- Infants' follow-up monitoring sheet:-

This sheet was designed by the researcher to gather information about premature infants during follow-up visits at pediatric out patient clinics.

6- Discharge Guide Program:

A guiding booklet was prepared by the researcher after reviewing related literatures. It was designed in simple Arabic language according to the actual mothers' needs regarding care of their premature infants after hospital discharge.

Exploratory phase:

A pilot study was carried out including 10% of the total sample size (5 mothers and their premature infants for control group, and 5 mothers and their premature infants for study group), according to the results obtained from this study, modifications of the study tools and contents was done. The pilot sample was excluded from the study.

Results:

The findings of this study can be summarized as the following:

- 58% and 72% of premature infants were males in study and control groups respectively, and the rest of them were females.
 - The mean birth weight for premature infants was 1703.4 ± 429.2 grams, and 1929.6 ± 444.1 grams in study and control groups respectively, while the mean gestational age was 33.14 ± 2.3 weeks, and 34.1 ± 1.9 weeks in study and control groups respectively.
 - The majority (80%) and (82%) of infants were small for gestational age in study and control groups respectively.
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- Exactly half of the infants (50%) in the study and control groups stayed in the hospital for more than 3 weeks.
 - The mean age of mothers in study group was 27.7 ± 7.1 years and 27.5 ± 6.1 years in control group.
 - The minority of mothers (4%) in study group was illiterate and the minority of them was postgraduate education, compared to 6% and 2% in control group respectively.
 - More than two thirds (72% and 68%) of mothers in the study and control group were housewives respectively.
 - Mothers' knowledge about care of their premature infants were incorrect before implementation of the discharge guide program with no statistical significance difference ($P > 0.05$) between study and control groups.
 - Mothers' practices about care of their premature infants were unsatisfactory before implementation of the discharge guide program with no statistical significance difference ($P > 0.05$) between study and control groups.
 - Mothers' total score level for knowledge and practice were improved with a high statistical significant differences ($P < 0.001$) pre and post discharge guide program for the study group.
 - In relation to total score level for knowledge and practice there was a high statistical significant differences ($P < 0.001$) between the study and control groups after implantation of the program.
 - Mothers had a highly confident response toward care of their premature infants after implantation of the post discharge guide program in study group than control groups with a high statistical significant difference ($P < 0.001$).
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- Regarding mothers' bonding behavior there was a high statistical significant difference ($P < 0.001$) after implantation of the discharge guide program between study and control groups.
- Incidence of exclusive and almost exclusive breast feeding were higher among study group than control group at infants' discharge. At the end of second visit exclusive breast feeding was still higher (78%) in study group than control group (32%). At the end of third visit exclusive and almost exclusive breast feeding were still higher (92%) in study group compared to 40% in control group.
- Both groups had breast feeding problems after discharge including drowsy and sleepy infant, easily fatigue, and weak sucking. Whereas inadequate breast milk and nipple problems increased and persist until the end of third visit among control group. Meanwhile, inadequate breast milk was a major problem as reported by 56% of mothers in the control group at the end of the third visit.
- There is an improvement of infants' health condition and anthropometric measurements in study group compared to control group and this reflected a highly statistical significant difference.

Conclusion:

In the light of the study findings it can be concluded that, discharge guide program was effective in improving mothers' knowledge and practices in the study group compared to mothers in the control group regarding care of their premature infants post discharge program. In addition to developing highly maternal confidence and strong mothers' bonding behavior with their premature infants in study group, and also decreasing the incidence of health hazards for the premature infants as well as for their mothers.

Recommendations:

In the light of the findings of the current study, the following recommendations are suggested:

- 1) Special attention should be given to the mothers of high-risk pregnancy during prenatal period to prepare them for caring of their premature infants.
 - 2) Instructions should be given to expectant mothers during antenatal visits and should focus on care of their premature infants, highlighting the care at home after discharge from the NICUs. These instructions could be reinforced and supplemented by posters, booklets, and educational pamphlets.
 - 3) Providing periodical and continuous educational programs for mothers to help them in caring of their premature infants to discuss premature infant's care needed, using up-to-date knowledge to encourage provision of high quality of care, through different educational centers in the hospitals.
 - 4) Nurses should play a key role in health teaching and counseling of mothers both in urban and rural areas about care of their premature infants after discharge from NICUs, guiding the mothers about care of these infants correctly and safely.
 - 5) Written schedules and teaching plans should be given for the mothers and caregivers to use as a reference after discharge of their premature infants. These schedules should illustrate the dates, times, warning signs to seek immediate health care, and settings for follow-up visits.
 - 6) Emphasize the importance of regular medical follow-up after infant discharged in the pediatric follow-up clinics to assess infants' growth
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and development, to help their mothers to overcome any problems faced by them, and change drugs according to infants' health condition.

Further researches:

- 7) Encourage rooming-in for mothers of discharged infants to monitor mothers' practice, promote the well-being of mother-infant bonding, and to evaluate the success of mothers teaching about care of their premature infants.
- 8) Emphasize the importance of periodic in-service training programs for neonatal intensive care nurses to improve and updating their knowledge about care of premature infants, and also to ensure a high quality of care rendered.
- 9) Specialized centers should offer services for prematurely born infants especially after discharged from NICUs. The provision of medical care of the highest quality by the most efficient expertise could eliminate the healthy problems that might face premature infants and ensure their comparability with full-term ones.