

# Promotion of Family-Centered Care in Neonates Hospitalized in the NICU based on Health Belief Model

Atefeh Estiri<sup>1</sup>, Hamidreza Zendehtalab<sup>2</sup>

1- Bs in Nursing, Qaem Medical Center, NICU ward

2- MSc in Community Health Nursing, Faculty member, School of Nursing and Midwifery, University of Medical Sciences, Mashhad, Iran

## Abstract

### Introduction

The family is in a crisis and a stressful experience when neonate is admitted in NICU ward. In recent decades, role of family in the care of neonates has completely changed. Now, empowerment of families in the care of neonates hospitalized is an important approach in the field of neonatal nursing. Therefore, it is necessary for parents, especially mothers with neonates in NICU ward that be done nursing professional supports.

### Materials and Methods

This quasi-experimental study was conducted in Mashhad, Qaem Medical Center, in 2011, using before and after design. In this study, 34 women aged 19-41 years were participated voluntarily who had hospitalized neonate in the NICU ward, from June to October 2011. In order to find subjects, we interviewed 46 mothers, in a period of 5 months. Mothers were include if they could do the routine care of the newborn, their scores were less than 25 in participation checklist, the ability to read and write, not affected a physical or mental illness. Among the mothers who were interviewed 12 people were excluded from the study because: neonate mortality, discharge from the NICU unit and lack of personal interest. Finally the study was performed with 34 subjects

### Results

paired t-test showed significant difference in the participation score of mothers in the care of neonates after the intervention than before ( $P= 0.000$ ). Also, there is a significant difference among all the health belief model constructs, after the intervention than before. ( $P < 0.05$ ).

### Conclusion

Based on the results of this study, it is suggested; health education models can be used in clinical research nursing and empowerment programs related to individuals, families and other groups.

### Key words

health education models, NICU ward, Neonates, family-centered care

## Introduction

The family is in a crisis and a stressful experience when neonate is admitted in NICU ward (1). Consequences of the crisis are fear, anxiety, anger, fatigue, loss of decision-making power, loss of individual and social relationships (2). In recent decades, role of family in the care of neonates has completely changed. Now, empowerment of families in the care of neonates hospitalized is an important

(3). A study in Tabriz, results showed mothers want more nursing support in comparison with care they receive (1). Therefore, it is necessary for parents, especially mothers with neonates in NICU ward that be done nursing professional supports (1). One way of reducing morbidity and neonatal mortality is enabling mothers to care of neonates hospitalized in the NICU ward (3). Won says that empowerment is: engaging clients and families in decision making for health and

\*Corresponding author Email: [zendehtalabhr@mums.ac.ir](mailto:zendehtalabhr@mums.ac.ir) / Tel: 09155712577

approach in the field of neonatal nursing

welfare. For this, should be able to make a decision (4). Empowerment helps the clients to know their needs and resolve them. Also, it helps to family the ability to change (5). Empowerment, can resolve personal disabilities and leads to self-efficacy (6). Empowerment and participation have interaction and organic relationship together (7). Empowerment provides fields of cooperation and participation will strengthen the empowerment of individuals, groups and communities (8). Empowerment is not only to increase skills and knowledge, but also, is people's participation in greater control over environmental conditions and changing conditions if necessary (9). Empowerment is considered one of the most important aspects of health promotion. In definition of health promotion the words "control" and "enabling" is the emphasis and focus. Health promotion is a process to enabling people to increase control over their health and this will improve individual and community health (8). The goal of nursing interventions in family-centered care is improving the family members in order to overcome the barriers in the health field (9). Study of Masoudi showed empowering caregivers of patients with MS increase knowledge, understanding and skills in them (5).

Health-center interventions, based on health education models can make programs more effective (7). One of the most effective models in this area is Health Belief Model (HBM). Based on HBM, behavior is related to knowledge and attitudes (10). The HBM consists of the following dimensions:

**Perceived susceptibility:** Individuals vary widely in their feelings of personal vulnerability to a condition (in the case of medically-established illness, this dimension has been reformulated to include such questions as estimates of resusceptibility, belief in the diagnosis, and susceptibility to illness in general). Thus, this dimension refers to one's subjective perception of the risk of contracting a condition (8).

**Perceived severity:** Feelings concerning the seriousness of contracting an illness (or of leaving it untreated) also vary from

person to person. This dimension includes evaluations of both medical/clinical consequences (e.g., death, disability, and pain) and possible social consequences (e.g., effects of the conditions on work, family life, and social relations) (8).

**Perceived benefits:** While acceptance of personal susceptibility to a condition also believed to be serious was held to produce a force leading to behavior, it did not define the particular course of action that was likely to be taken; this was hypothesized to depend upon beliefs regarding the effectiveness of the various actions available in reducing the disease threat. Thus, a sufficiently-threatened individual would not be expected to accept the recommended health action unless it was perceived as feasible and efficacious (8).

**Perceived barriers:** The potential negative aspects of a particular health action may act as impediments to undertaking the recommended behavior. A kind of cost benefit analysis is thought to occur where in the individual weighs the action's effectiveness against perceptions that it may be expensive, dangerous (e.g., side effects, iatrogenic outcomes), unpleasant (e.g., painful, difficult, upsetting), inconvenient, time-consuming, and so forth (8).

Due to the stressful nature of the neonates' hospitalization in NICU ward

and its adverse consequences for family (11), This study was conducted based on HBM in order to promote family-centered care in hospitalized neonates in NICU ward.

### Methods

This quasi-experimental study was conducted in Mashhad, Qaem Medical Center, in 2011, using before and after design. In this study, 34 women aged 19-41 years were participated voluntarily who had hospitalized neonate in the NICU ward, from June to October 2011.

In order to find subjects, we interviewed 46 mothers, in a period of 5 months. Mothers were included if they could do the routine care of the newborn, their scores were less than 25 in participation checklist, the ability to read and write, not having physical or mental illness. Among the mothers who were interviewed 12 people were excluded because: neonate mortality, discharge from

the NICU unit and lack of personal interest. Finally the study was performed with 34 subjects. Data collection tools including:

- 20-item checklist to evaluate the participation of mothers the care of neonates that had 3 options: Yes, sometimes, not. This tool was graded 0-2.
- The questionnaire contained 40 questions that were made by the researchers. This was related to the structure of the health belief model, including: Perceived susceptibility (7 questions), Perceived severity (7 questions), Perceived benefits (5 questions), Perceived Barriers (5 questions), cues to action (6 questions), self Efficacy (5 items), Locus of control (5 questions). All dimensions except cues to action was graded based on a 5 points Likert scale from 0 to 5. Cues to action was designed to Yes and No. It was graded from 0 to 1.

Questionnaire and checklist were prepared using scientific references. Validity of tools was evaluated and confirmed by 10 experts in study area. To assess the reliability, was used from test-retest. To this goal achieve, test was performed 2 times, on a group of 7 people from mothers, with 7 day intervals. The correlation between scores was 82%.

In beginning, participation of mothers in the care of neonates, was determined, by checklist. Items on the checklist was observed and completed by the researchers in afternoon shifts. Checklist had 40 points, and the mothers who were less than 25 points, were selected as subject. Then, the research objectives explained to subjects and informed consent was obtained. In the next step, questionnaire of HBM structures was given to subjects. Questionnaire was completed within 45-30 minutes. Response time was in afternoon shift because in this shift, most therapeutic and diagnostic procedures were performed and the environment was more relaxed than the other shifts. After data collection, it was analyzed. based on the content, intervention program was reviewed and designed. Then, intervention program was carried out for

mothers in 4 sessions of 30 minutes daily. Mothers were divided into 6 groups of 4-6 people. The mothers who were in taking care of their babies similar, were placed in the same groups. The content of the intervention program was focusing on: Creating a perceived threat, highlighting perceived benefits and reduce perceived barriers, generate positive self-efficacy and the ability to control the situation. In presenting, methods were: lecture, group discussion, role playing, divided complex behaviors, into small steps and perform use of positive models (women who had taken sufficient care).

Key points of learning content in the form of pamphlets were given the mothers and they could, if necessary, take their questions. 4 days after completion of the intervention program, again, the participation rate of mothers in the care of neonates, measured by checklist and compared with the previous rate. HBM constructs questionnaire was completed by the subjects again. Since Negative viewpoint of the family, especially the husband (father), could damage the training, Therefore, all fathers were arranged with individual counseling sessions, to investigate and, if necessary, be amended their opinions. At these meetings, the benefits of maternal care has been emphasized. All statistical analysis was performed at %95 significance level using statistical software SPSS11.5.

### Results

The mean age of participants was  $28.6 \pm 5.2$  years and (27.4%) were in the age group 25-29 years. 59.8% of the subjects have high school education and less, 75.3% were housewives, 37.2% have other child. According to Table 1, paired t-test showed significant difference in the participation score of mothers in the care of neonates after the intervention than before ( $P=0.000$ ). Also, as shown in table 2, there is a significant difference among all the health belief model constructs, after the intervention ( $P < 0.05$ ).

**Table 1:** Mean and standard deviation participation scores before and after intervention  
N = 34

Variable	Before Intervention	After Intervention	Paired t-test
participation score	19.2 ± 3.8	33.6 ± 4.3	P= 0.000

**Table 2:** Mean and standard deviation HBM constructs scores before and after intervention

HBM constructs	Before Intervention	After Intervention	Paired t-test
Perceived susceptibility	18.3 ± 2.8	28.1 ± 3.2	P = 0.002
Perceived severity	22.7 ± 3.5	31.9 ± 3.8	P = 0.002
Perceived benefits	14.1 ± 2.5	30.4 ± 3.7	P = 0.000
Perceived Barriers	19.7 ± 4.1	11.3 ± 2.2	P = 0.025
Cues to action	4.7 ± 1.1	8.2 ± 2.4	P = 0.003
Self Efficacy	12.3 ± 1.9	20.6 ± 3.4	P = 0.000
Locus of control	13.5 ± 2.4	19.8 ± 3.9	P = 0.001

### Discussion

The aim of this study was to promote family-centered care for neonates hospitalized in the NICU based on Health Belief Model. Results of study showed, after applying the intervention program, scores of mothers' participation in the care of neonates have increased significantly, (Table 1). In addition, after intervention, scores of HBM structures, have increased significantly, than before (Table 2). Therefore, it was concluded that, HBM has had the effect of promote family-centered care in the NICU neonates admitted. The results of this study are consistent with other studies that HBM was the main part of the intervention program. Such as Shojaeizadeh et al study (2011), that was about cervical cancer screening behavior in women of Hamadan based on the health belief model (10). The study Mahmoudi and Ramezani (2009), too (12). Also, reveals family-centered empowerment, in situations such as multiple sclerosis (5), myocardial infarction (6), asthma (9) and depression is effective (4). One of the strategies for effective care of neonates in the NICU is empowerment of mothers (12). According to this, the results of the present study, is consistent with the findings Jafari et al (2013). They were studied empowerment education program effects on mothers with infants in intensive care (11). In this,

parents were familiar about premature neonate and NICU ward by audiotape and booklet illustrated. Results showed that mothers in the intervention group compared with the control group, the participation rate has increased and decreased levels of stress and anxiety (11). One of the most important approaches in this study was increased participation of mothers in the care of neonates hospitalized in NICU. Active participation is one of the most important aspects of the empowerment programs, without that, it will be very difficult achieving the goals of empowerment programs (13). According to stressful nature of the infant's hospitalization in NICU, mother involvement in child care, reduce stress and anxiety, and to accelerate the process of improving infant (14). In this regard, the study of Bastani et al (2012) showed, collaborative care in NICU, is reducing maternal anxiety (13). Aliabadi et al (2013), showed in their study, participation of mothers in the care of preterm infants admitted to the neonatal intensive care unit, reduces readmission frequency and duration of hospitalization as an intervention effectively (3). All of these findings are consistent with the objectives of our study.

### Conclusion

Based on the results of this study, it is suggested; health education models can be

used in clinical research nursing and empowerment programs related to individuals, families and other groups.

### Acknowledgement

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### Conflict of interest

None declared.

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