



International Connections Column

Coping in Mothers of Premature Newborns After Hospital Discharge[☆]Mayut Delgado Galeano, RN^{*}, Beatriz Villamizar Carvajal, RN, PhD

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ABSTRACT

The objective of the study is to determine the modulatory effect of interventions, specifically regarding the effect on the coping ability of mothers of preterm infants at the time of the infant's discharge from the neonatal intensive care unit (NICU). The design was a prospective, descriptive, correlational study. It was conducted with a sample of 144 mothers in two NICUs in Colombia. The study used the *Coping and Adaptation Processing Scale* Spanish modified version (CAPS). The data were collected from August 2014 to February 2015. The *Coping and Adaptation Processing Scale* (CAPS) was administered to the mothers at the time of the infants' discharges to home. Spearman rho correlation coefficient was calculated to assess a relationship between the levels of coping and transition conditions – personal, community. A multiple linear regression was used to determine if there was an association among personal, community, and societal conditions and levels of coping and the intervention effect. The results of the multiple regression analysis found that variables (such as income, information given at admission, and preparation for parenthood) influenced coping in mothers and showed statistical significance with p values of 0.032, 0.020 and 0.015 respectively. The interventions designed for each of the units of the individual institutions did not modulate the process of coping of mothers of preterm infants at discharge, even when interventions in each of the institutions have a different practice. It is important to start information about the care of children at home on admission and reinforce this information during the hospital stay in order to strengthen maternal coping at discharge. This information should be reviewed and consideration should be given as to the type of information and manner in which it is given to mothers. These actions would potentially improve the education and support program given in the units prior to the infant's discharge.

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The survival of preterm newborns (PTNBs) has increased due to scientific and technological advances.¹ Another key factor impacting PTNE survival is the increased number of health care professionals qualified to provide specialized care. Thus the number of infants going home increased.^{2–7} One of the main causes of neonatal and infant mortality is premature birth. Close to 1 million children die yearly due to complications from premature birth. Many of the infants who survive face a life of disabilities, learning disorders, and auditory and visual problems.^{3–5}

For this reason care for and monitoring of the PTNB during the critical hospitalization stage and follow-up care after hospital discharge, are priorities.

In Colombia, in 2013, the premature birth rate is about 19.44% of all live births.⁶ Therefore, prematurity is of great relevance for the country, due to its social impact, economic costs, and effect on quality of life, as well the health consequences for premature infants such as the

development of the family. Implications of being born prematurely are not only evident in the neonatal period, but also during the various stages of the life cycle. The PTNBs face serious health problems; such as cerebral palsy, intellectual impairment, chronic lung disease, loss of vision and hearing; complications are linked to the gestational age at birth and the conditions of care received.^{1,3–5,7,8} The increased survival of PTNBs and the care practices during the hospital stay leading up to discharge during the last few decades have led to questions regarding the adequacy and quality of post hospital care as related to the high rate⁹ of rehospitalizations of these newborns. Follow-up clinics and community outreach programs have focused on the prevention of complications and the early recognition of possible health and developmental problems.^{1,4} Recent studies have repeatedly shown that the rehospitalization rates of premature infants are worrisome and led to increased health care expenditures.¹⁰ McLaurin et al.,¹¹ showed that the total health care costs and morbidity of the late-preterm infants are greater than term infants, maintaining these differences throughout the first year of life. Late-preterm infants were rehospitalized more often (15.2%) than term infants (7.9%).¹¹

The period immediately following discharge is a time of transition from the hospital to home.^{12–14} It is a critical time for parents, since they move from the hospital environment, which is considered “safe”, to home, where they must assume all the responsibilities and activities

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associated with the care of their child. Many unfortunate events, like death, may occur if parents have not acquired the necessary knowledge and skills to care for their PTNB at home.^{14,15} During this period it is important to consider maternal coping because the health status and quality of life of the premature infant depend on the use of effective strategies in coping at home when caring for their PTNB.¹⁶ The empowerment of parents of premature infants does not occur in the same way as in parents of full-term newborns. Various studies have shown that parents may experience fear, grief, guilt, and anxiety during their stay in the NICU and again during the transition to home after discharge.^{14,17}

Parents of preterm infants experience many different intervention strategies to engage them in acquiring knowledge about the birth process of a preterm infant and caregiver skills, so some were taught strategies before the birth, others during the NICU stay, still others at discharge and in home care programs. Interventions applied to parents of PTNBs have been studied and linked to measureable levels of stress and anxiety during the transition from the hospital to home, but none of these studies has specifically measured coping and adaptation skills in the population included in our present study.¹⁸ This article presents a study conducted in Columbia in two NICUs. The study was approved by the Ethical Review Board of the School of Nursing and Rehabilitation of the University of La Sabana.

Purpose and Study's Setting

The aim of this study was to contribute to nursing knowledge through its analysis of coping as a nursing concept from the Middle Range Transition Theory in mothers of PTNBs upon discharge from neonatal intensive care units (NICUs), using the *Coping and Adaptation Processing Scale modified Spanish version (CAPS)*, and taking into account the interventions currently being applied in two NICUs in the city of Bucaramanga, Colombia. Both units were similar. Institution 1 had 38 beds for critically ill newborns, including premature infants. This is a health facility of reference in the department of Santander, because it is the only public institution level 3. They have an average of 700 deliveries per month. The unit of institution 2 had 45 beds, it was a tertiary unit because it received high risk pregnant women, premature babies and high risk newborns, they have an average of 500 deliveries each month.

The objective of this study was to determine the modulatory effect of interventions applied to mothers of PTNBs regarding their coping ability at discharge from the neonatal unit.

Methods

The design was a prospective, descriptive, correlational study. For comparison purposes of coping among institutions, the sample size was calculated by the following expression:

$$n = 2 \left\{ \sqrt{\chi^2_{1-\alpha}(k-1) - (k-2) + z_{1-\beta}} \right\}^2 \left(\frac{\sigma}{\Delta} \right)^2 + 1$$

where α and β were the probabilities of type I and II errors respectively; k , number of groups; $\chi^2_{1-\alpha}(k-1)$, the upper percentile of a chi-square distribution with $(k-1)$ degrees of freedom. $\chi_{1-\beta}$, the upper percentile of a standard normal distribution; σ , the upper limit to standard deviation; Δ , difference between averages of adherence between groups for determination of β , respectively. The criteria were $\alpha = 0.07$, $\beta = 0.05$, $\sigma = 16.5$, and $\Delta = 10$.

Sample

The convenience sample included 144 mothers of PTNBs with a gestational age of <37 weeks, and a minimum hospital stay of 7 days at the time of discharge. They were identified and referred to the researcher by the nurse coordinator and medical director of one unit and the other unit was the researcher's workplace.

Inclusion Criteria

Inclusion criteria were mothers of PTNB of less than 37 weeks with a hospital stay of at least one week.

Criteria for Exclusion

Exclusion criteria were mothers with mental, cognitive, auditory or language disorders and/or history of abuse of psychoactive substances and PTNB with congenital problems or malformations, and or severe neurological impairments.

Interventions in the Units

In the institution 1 the intervention was based on educating the mothers, which is performed on admission, during the stay and at the time of discharge of PTNB. Nurses deliver information which included a brochure that contained the policies on visitor and parent entry into the NICU and recommendations on the importance of hand washing. During hospitalization, the education is given to the mother about breastfeeding, baby care, and the kangaroo mother care program. At discharge, the mother is educated on the recommendations related to the care of preterm infants at home.

In institution 2 on admission, nurses give mothers education about breastfeeding and the breast milk extraction technique, policies about visitor and parent entry to the unit and a training program to caregivers that includes information about warning signals and breastfeeding. During the hospital stay, mothers received educational sessions about the care and management of their preterm infants, in addition, nurses and doctors provide information on the PTNB's health status, besides the kangaroo mother care technique. Three to five days before discharge, the mothers are included in planning the discharge, the mother received training on how to provide baby care at home. The educational materials included information about bath, massage, hygiene, care of the umbilical cord, and management of drugs like vitamins, inhalers or drugs that must be administered at home by medical order. Finally, nurses assess the mother knowledge using a checklist and if the mother possesses a good working knowledge of the infant care, then the PTNB is discharged. In addition, nurses give the mothers a brochure with recommendations on discharge, related with pediatrician consult, vaccination schedule, warning signals and tips to infant care.

Data Collection

Data were collected in two NICUs in the city of Bucaramanga, Colombia, from August 2014 to February 2015. The information related to the sociodemographic characteristics of the mother and the newborn, as well as personal, community, and social factors that reflect the principles of transition theory were collected. One instrument was used. The instrument was the *Coping and Adaptation Processing Scale Spanish modified version based on Roy Adaptation Model (CAPS)*, this was validated for the Universidad de la Sabana, Colombia, and it contains 33 items, the coping can be assessed in three levels, low (score 33–57), medium (score 58–68) and high (score 69–99). The results of construct validation were that the modified version of the scale showed good face validity (95%), content validity of 0.83 and reliability of 0.70.¹⁹ All mothers identified who met the criteria for inclusion and who had hospital discharge papers were asked to participate and give their informed consent.

Results

The total sample was composed of 144 mothers of PTNBs; 79 mothers were from institution 1 and 65 were from institution 2. These health care facilities were similar with respect to complexity and the population they served. The difference between them lay in the structure of the education provided to the mothers during hospitalization and at discharge.

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