

Effect of Reiki as a stress management technique for parents of hospitalized neonates

Abstract

Objective: To determine the effect of Reiki, as nursing care, on parental stress in mothers with hospitalized neonates.

Materials and methods: Explanatory, pre-experimental study, carried out on mothers of hospitalized neonates. Sampling was by availability and a total of thirty-two mothers over 18 years of age participated voluntarily.

Results: 9.4% of the participants had an excessive level of parental stress, with the highest level of stress occurring in the parental role. The pre- and post-intervention parental stress scores had a difference of 12 points ($p < 0.004$).

Conclusions: Because the levels of parental stress following Reiki Therapy decreased, with significant statistical difference, the research hypothesis is accepted. The results of the intervention offer an alternative to be considered as a nursing intervention within the NICU in the management of parental stress.

Key words: nursing, reiki, stress, neonates

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Abbreviations: NICU, neonatal intensive care unit; NB, newborn; NANDA, North American nursing diagnosis association; PSS, parental stress scale; COPE, creating opportunities for parent empowerment

Introduction

Hospitalization of the neonate in the Neonatal Intensive Care Unit (NICU) is an event that causes parental stress in parents, due to the environment and invasive procedures required by their critical health conditions, which alters the family nucleus, due to the condition of vulnerability, interfering in the parent-child bonding.^{1,2} Globally, millions of newborns die every day and 68% of newborn (NB) deaths could be avoided by 2030 through simple measures such as exclusive breastfeeding, skin-to-skin contact, reducing the stressful tensions that affect the mental health and attachment of their parents.^{3,4}

In the NICU, the main caregivers (father and mother of the newborn) are present, who are uncertain about the newborn's health status. This situation has an effect on the adoption of the parental role, influencing the child's development as mentioned by Ramona T. Mercer. Mercer; since the expectations of the newborn were to have him at home and provide him with care, when he is hospitalized this relationship is altered, due to the existing separation, generating parental stress.⁵

Parental stress is a complex process in which parents feel overwhelmed by the demands they face in their role as parents, demands that cannot be met in a timely manner due to separation.⁶ According to Mercer, separation is a given experience within the microsystem, which can manifest itself in response to stimuli such as: environment, personal characteristics and individual perception, nature and course of the child's illness, previous material and personal resources.^{7,8} When the neonate's health status is unstable, mothers experience high levels of parental stress, so nursing should understand the situation in order to offer comprehensive care to the couple, working on strategies for managing parental stress.⁹⁻¹² Various nursing interventions for the management of parental stress in parents whose newborns are admitted to the NICU may have beneficial effects

on their mental health, depending on the severity of the newborn's illness.¹³⁻¹⁵

Reiki is a vibrational therapy that is generally applied by gentle touch and is credited with the ability to balance the biofield and strengthen the body's ability to heal itself; it is increasingly used as a complement to conventional medical care, both in and out of the hospital setting.¹⁶ Integrated and complementary practices provide a possibility of improvement in the quality of life of individuals suffering from various diseases, among which Reiki stands out.¹⁷ Derived from the above, the purpose of the present study was to determine the effect of Reiki, as nursing care, on parental stress in parents with hospitalized neonates in the NICU. Since it is a noninvasive, comforting and relaxing intervention that is within the scope of nursing practice.

The nursing staff should provide holistic care to the patient including the family, as part of the nursing interventions, it is of great importance to offer mental health support to the parents, so that they present a better performance in the adoption of the parental role. As mentioned by the North American Nursing Diagnosis Association (NANDA), ineffective role performance as a diagnostic label is related to stress and can be manifested by role conflict, uncertainty, inadequate motivation, among others.¹⁸ Therefore, Reiki Therapy was implemented to manage parental stress, since it is caused by critical factors such as the hospitalization of the newborn, separation from the family, and the child's state of health. Reiki is useful in decreasing stress levels and sleep disturbances secondary to medical conditions; it is included in the scope of nursing care and addresses problems of stress, fatigue and exhaustion as well as mental health benefits.¹⁹⁻²³ There is sufficient evidence to continue to investigate this therapy as an intervention for mental states, with an effective approach to decrease emotional symptom levels.²⁴⁻²⁸ The objective of this study was to determine the effect of Reiki, as nursing care, on parental stress in mothers with hospitalized neonates.

Therefore, the following research question was posed: What is the effect of Reiki as nursing care on parental stress in parents with hospitalized neonates?

Materials and methods

Explanatory, pre-experimental study, conducted in mothers of neonates hospitalized in a NICU, in the period from March to October 2021. Mothers were included who were older than 18 years, who agreed to voluntarily participate in the research by signing an informed consent form, who agreed to receive Reiki therapy, when they visited their babies at least once a day in the NICU, and whose infants were hospitalized for 3 to 14 days.²⁹ Mothers who had already had a similar clinical situation with another child were excluded. Sampling by availability, a total of thirty-two mothers were recruited.

A sociodemographic background survey, designed specifically by the researchers, was used for data collection. Physiological variables were considered (heart rate, respiratory rate, blood pressure, temperature, pupil diameter and level of pain: pain was considered (physical pain at that moment, such as headache, due to cesarean section). The parental stress variable was measured with the Parental Stress Scale: NICU (PSS: NICU) adapted for Mexican parents,³⁰ with a Cronbach's Alpha 0.945, consisting of three dimensions: 1) visual aspects; 2) appearance and behavior of the baby; and 3) alteration of the parental role; stress is classified as: 1) excessive, 2) moderate, 3) mild and 4) does not cause me stress (with a score of 0-130 points).

Data were collected at two points in time: before (one day before starting the intervention) and after the intervention (the day after the end of the sessions). Three Reiki sessions were applied, lasting 30 minutes each day, in a private space assigned for therapy, after visiting the newborn. The Reiki technique consisted of placing the hands at a distance of 15 to 20 centimeters from the participants' bodies, with a sequence of hand movements in the following order: feet, genitourinary region, abdomen, chest, neck, forehead and crown; during the sessions relaxing music was used and before starting each session the mothers were asked to take three deep breaths with their eyes closed, after which they remained silent during the entire session.

The statistical analysis was performed with SPSS version 25; for the descriptive characteristics of the sample, the mean and standard deviation were obtained, as well as frequencies and percentages. The effect of Reiki was determined with the Wilcoxon signed-rank test, and the Student's t-test this was according to the normality of the data corroborated with the Shapiro-Wilk test. The study was approved by the Bioethics Committee of the Celaya-Salvatierra Campus of the University of Guanajuato (CBCCS-02730092019) and the Local Research Committee of the Health Institution (03 ISSEA-020/03).

Results

Sociodemographic characteristics

The mothers' age was 24.1±5.9 years, 75% had completed high school, 53% were in union, 90.6% worked at home. Regarding the medical diagnosis of the neonate, 69% presented other diseases in addition to the admission diagnosis, for example, they were admitted to the NICU for infection, alterations in the respiratory pattern, prematurity, neonatal jaundice; 59% of them were term neonates.

Physiological variables

Both systolic and diastolic blood pressure had a decrease of 4mmHg, both being statistically significant, as well as the level of pain, the distribution of results was different ($p<0.001$), the other variables did not show statistical differences (Table 1).

Table 1 Pre and post Reiki physiological measurements

Variables	Pre	Post	p
Heart rate (bpm)	88.8±12.5	85.9±12.1	0.163
Respiratory rate (rpm)	20 (12-35)	20 (12-30)	0.903
Systolic blood pressure (mmHg)	115.0±12.4	111.0±11.6	0.010*
Diastolic blood pressure (mmHg)	76.5±10.3	72.5±9.4	0.020*
Temperature (°C)	36.3±0.6	36.1±0.6	0.081
Pupillary diameter (mm)	3 (2-4)	3 (2-4)	0.011*
Analog Pain Scale (VAS)	3.5 (0-10)	0 (0-7)	0.001*
n=32			

* Statistical significance 0.05, mean ± standard deviation or median (range) is indicated, t-test was performed for heart rate, systolic and diastolic blood pressure, temperature, Wilcoxon test for respiratory rate, pupillary diameter and analog pain scale.

Parental stress in the NICU

The level of mild parental stress predominated in 56.3% of the participants, 25% obtained moderate stress and 9.4% excessive stress. In the "Images and Sounds" dimension, parental stress is not very stressful, with almost half of the women reporting no stress (46.9%), only 3% reported excessive stress. According to "Aspects and behavior of the newborn" 12.5% obtained excessive parental stress, moderate level was found in 9.4% and 34.4% mild parental stress. Excessive parental stress is reflected in "Parental role", in which the participants were asked what caused them to be separated from their newborn, not being able to do something to avoid painful procedures, not having time alone with them, among other statements; more than half of them obtained excessive stress (59.4%), 21.9% were found to have moderate parental stress (Table 2).

Table 2 Parental stress in the NICU

Parental stress level	Images and sounds (%)	Aspects and behavior of the neonate (%)	Parental role (%)	Parental stress scale: NICU (%)
Excessive stress	3.1	12.5	59.4	9.4
Moderate stress	12.5	9.4	21.9	25
Mild stress	37.5	34.4	12.5	56.3
It does not cause me stress	46.9	43.8	6.3	9.4
n=32				

NICU, neonatal intensive care unit, Neonatal Intensive Care, Adaptation for Mexican parents.

Comparison of parental stress before vs after Reiki

The highest score obtained in images and sounds prior to the intervention was 19, indicating excessive stress in the participant, which decreased to 15 points. In the aspect and behavior of the newborn, 21.8% of the participants increased their score after the intervention; on the other hand, in 34.3% there was a decrease of up to 30 points. Regarding parental role, 7 (21.8%) participants had the highest score (excessive stress: 27-35), of these, 4 (57.1%) decreased their score, the rest remained with excessive parental stress; this is the dimension with the highest score given the effect that being separated from their children and not performing their role as primary caregivers represents for the parents.

The highest score was 113, indicating an excessive level of parental stress on the overall scale (98-130 points), 9.3% (n=3) of the participants had no parental stress (0-32 points), yet the post-intervention score decreased. Mild stress (33-64 points) predominated in 56.3% (n=18), of which 46.8% (n=15) showed a decrease in post-Reiki score. The distributions of parental stress scores between the pre- and post-intervention groups are different, with these differences being statistically significant ($p < 0.05$) being much lower in the post-intervention, with the exception of parental stress in the pictures and sound dimension (Table 3).

Table 3 Comparison of parental stress in the NICU

	Pre	Post	P
Images and sound	6.0 (4-19)	5.0 (0-19)	0.101
Appearance and behavior of the neonate	20.5 (1-67)	15.5 (1-61)	0.038*
Parental role	28.5 (6-35)	20.5 (8-35)	0.000*
Parental Stress Scale: NICU	54.5 (20-113)	42.5 (15-104)	0.004*

n=32

* Statistical significance < 0.05 , median (range) is indicated, Wilcoxon test was performed for all comparisons. Source: Parental Stress Scale: Intensive Care Unit.

Discussion

Mercer in *Becoming a mother* mentions that the process of becoming mothers is affected by the hospital stay in the NICU and is more evident when the neonate is premature and the health condition is critical.^{29,30} It was found that the predominant marital status was free union and on average they had two children, both factors affect the level of parental stress compared to the way of facing hospitalization in the NICU, multiparous mothers and those who work outside the home are vulnerable to stress, because the way of facing the situation is negative, by worrying about leaving their other children to take care of the newborn in the NICU,³¹ in light of the theory, in the microsystem there is a deficient support system, therefore this makes the woman feel stressed (understood as parental stress derived from the hospitalization) and with a diminished parental role.²⁹

Most of the neonates arrived at term (>36 SDG), their survival was not evaluated, however, the results coincide both with the UN⁴ and with research where the severity of the newborn's illness directly affects the parental stress that parents show when facing hospitalization.^{6-8,13-15,32,33}

According to Ramona T Mercer,³⁴ in her model on the process of becoming a mother, the bond that one has with the newborn when hospitalized is diminished, directly influencing as a factor in the increase of parental stress, many of the women agreed during the collection of information that "the fact of having the newborn hospitalized, that his father does not know him, observing that he has tubes in place, not being with him all day, not having him at home, leaving his other children at home, not being discharged", increase even more the parental stress already perceived.³¹ When detecting biophysiological markers before and after Reiki, which are influenced by parental stress, show a statistically significant decrease after the intervention in systolic and diastolic blood pressure and pain. Several studies that have evaluated the effect of Reiki with patients in health situations report similar results, both blood pressure decreased^{19,31} and the level of pain.^{26,36,37}

Reiki is a therapy that contributes to relaxation,^{24,40} therefore this causes the heart rate to balance at basal values, since it affects the sympathetic nervous system by working with the energy of people and although in the present study a decrease is reported, this does not have statistical significance, having then to continue investigating in this regard; contrary to what was obtained with neonates with withdrawal syndrome where they suggest a benefit in the heart rates of newborns.³⁸

When considering the dimensions of the parental stress scale: NICU,³⁹ prior to the intervention the sample presented excessive stress in the parental role which has been identified in other similar studies with the highest level of stress^{39,40} as explained by Mercer, where stress is defined as a life event perceived in a positive or negative way, where environmental variables influence,^{33,34} having the newborn hospitalized makes parental stress a factor that reduces the bond between parents and child, this is given in the microsystem, in this way given the parental role,⁴¹ there are feelings of disbelief, guilt, frustration, anxiety, anger, fear; due to the inability to share, care for and protect the newborn,^{7,8} these functions are delegated to the health team.

Regarding images and sounds (alarms, monitors, other hospitalized NBs), this dimension in particular is little influenced by parental stress, although it is considered that visually in the NICU the parents are exposed to anguish due to the procedures and therapeutic instruments for the treatment of their children; prior to the intervention, between mild stress and no stress is reported in the participants, as has been found in other studies.^{13-15,40,42} In this way, and no less important, in the appearance and behavior of the newborn, little stress is reported, as observed in similar research.^{40,42-44}

In general, parental stress was found to be excessive and moderate with 9 and 25% respectively, this may be due to the fact that both in images and sounds and in the behavior of the neonate the patients report low levels of stress and only in the parental role the stress is: excessive, as reported in one study,⁴² however, there are others where the mothers obtained severe stress, possibly due to the gestational age of the neonate (premature), the complications of hospitalization.^{24,26}

Various interventions have been developed for the management of parental stress in parents with hospitalized neonates,⁴⁵ such as spiritual care,²⁴ prayer,³⁸ mindfulness,⁴⁶ Creating Opportunities for Parent Empowerment (COPE)⁴⁷ and integrated family care,⁴⁸ among others. On the other hand, Reiki⁴⁹ is a complementary therapy approved by the WHO,⁵⁰ which has been used for various health situations such as stress, anxiety,^{24,37} pain,^{26,36,40} quality of life⁵¹ in various hospital settings.³⁶ In this study, a transformation of care for parental stress through Reiki therapy was performed; it has not yet been reported as a practice for this health situation; however, there are studies that use it to reduce bio-psycho-emotional symptoms.^{24,51}

According to the results reported after the Reiki sessions given to the participants, in general most of them reduced their level of parental stress with statistical significance in aspect and behavior of the newborn, parental role, as well as in the general scale, proving effectiveness in providing tranquility, relaxation and stress reduction. Therefore, these data agree with studies where it is mentioned that it is necessary to design strategies for the management of parental stress^{12, 42,52} given this proposal and that sometimes the conditions of the NICU do not satisfy the needs of the parents who resort to other means,⁵² so nursing should provide the conditions for the care of the binomial in the hospital environment as proposed by the theory of becoming a mother.¹¹

Conclusions

Since the levels of parental stress in the mothers after Reiki Therapy decreased, with a significant statistical difference, the research hypothesis is accepted. The results of the study offer an alternative to be considered as a nursing intervention in the binomial within the NICU, in the management of parental stress, given that having the newborn in the hospital generates parental stress, regardless of the condition of the newborn, due to lack of knowledge.

It is observed in the parental role that being away from the newborn, not holding or caring for it when wanted, are factors that increase the level of perceived parental stress, as described in the process of becoming a mother-father by Mercer.

Therefore, the implementation of Reiki as a nursing care intervention in the NICU was intended to help them manage parental stress, contributing to states of relaxation, tranquility, and it also had an effect on physiological variables such as blood pressure and pain, which also decreased after its application, although the results in the newborn are not reported, it was notable that the acceptance of the process provided support to the mothers to integrate more easily to the infant care, in this way it contributed to the newborn to feel the closeness of his mother, the women transmitted their tranquility and positivity to their children after the therapy.

In addressing parental stress through therapy, it was observed during the intervention that the participants also need to be listened to, instructed in the care of the newborn and to resolve doubts that arise during hospitalization. Nursing in the NICU has an enormous task of caring for the binomial, to be able to develop the role in the mothers; with Reiki, they mentioned feeling calm, peaceful, rested and with greater serenity afterwards, in this way they were able to integrate into the care of the newborn in a better way and conscious of what they were learning in the unit.

To be able to give Reiki, the therapist must have a Reiki master instruction in three levels, in order to discover and use both the positions of the hands and the symbols, this can also be enriched with the use of aromatherapy and music therapy, which were also used at the time of the sessions that were provided to the participants.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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