

Spiritual Well-Being, Parental Stress, and Coping strategies: A cross-sectional study of Iranian Mothers with Preterm neonates

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ABSTRACT

Background: The present study aimed to assess the correlation of spiritual well-being with parental stress and coping strategies in mothers with preterm neonates hospitalized in neonatal intensive care units (NICUs).

Methods: This prospective cross-sectional study assessed Spiritual Well-Being (SWB), parental stress, and coping strategies in mothers (n=200) of preterm infants admitted to NICUs. Mothers were further divided based on socio-demographic characteristics, such as mother's age, gestational age, average scores at school, mothers' literacy level, the birth rank, cesarean or vaginal delivery, number of children, job, and duration of hospital stay.

Results: The results pointed out that 46.6% and 53.4% of mothers had moderate and high levels of SWB, respectively. Moreover, the religion domain (53.30±7.33) had a higher score, in comparison with the existence domain (46.03±7.15). The planful problem-solving was the most frequently used (46.02±11.46) strategy. Religion domain had a significant positive and negative correlation with planful problem-solving strategy ($r=0.439^{**}$; $P\leq 0/000$) and emotional-driven coping strategy ($r=-0.420^{**}$; $P\leq 0/000$), respectively. There was a significant negative correlation ($r=-0.322^{**}$; $P\leq 0/000$) between the existence domain and the emotional-driven coping strategy.

Conclusion: Regarding the close interrelationship between mothers and NICU nursing staff, it is clear that nurses can help mothers to cope with stress more quickly and efficiently using accurate assessment and appropriate intervention in terms of their spiritual and religious beliefs.

Keywords: Coping, Mothers, Parents, Religion, Spiritual

Introduction

The advances in perinatology, fetal, and neonatal care have resulted in an increased survival rate of very low birth weight neonates (1, 2). As reported by the World Health Organization in 2010, more than 1,200,000 preterm neonates are born annually. Moreover, one of every 10 live births is preterm (3), and more than 85% (n=11) of them take place in Asia and Africa (4). The prevalence rates of preterm birth in the world and Iran have been reported as 10.6% and 6.4%, respectively (5). Parents often do not think about

the possibility of preterm labor; accordingly, they get disappointed when facing the unexpected results of pregnancy (6-8).

Most parents who had experienced child hospitalization show physical and mental reactions (9-11). In general, parents describe the Neonatal Intensive Care Unit (NICU) admission process (12). The hospitalization of preterm neonates in NICUs is associated with severe stress and anxiety for both parents. Numerous studies have indicated that mothers experience higher

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levels of stress and anxiety, compared to fathers (13-15). In most cases, nurses notice the signs and symptoms of anxiety, fear, and disabilities in mothers with preterm neonates. These nurses can play an effective and supportive role for parents in coping with stress owing to their close contact with their neonates (16).

Coping refers to a behavioral or cognitive process that is used to reduce, tolerate, or control internal and external stresses that are unbearable or out of balance. Individual coping strategies are related to physical and mental health (17). North American Nursing Diagnosis Association (NANDA) provided a standardized language for evaluating the coping process. The NANDA defines ineffective coping, as a nursing diagnosis, inability to/from a valid appraisal of internal or external stressors, inadequate choices of practical responses, and/or to access or use available resources. Therefore, instructing parents on problem-solving, decision-making, as well as childrearing and parenting skills, or referring them to programs where these skills can be obtained is strongly suggested (18,19). Mothers with preterm neonates use two strategies of coping, including positive stress reassessment and seeking social support from the eight sub-scales of stress strategies (20, 21).

In addition to their families, mothers expect support from NICU staff, especially nurses. Therefore, all caregivers involved in the care need to be aware of the psychological status of mothers and their parenting strategies and should be skilled in relieving stress and maintaining balance (22,23). In this regard, several interventions might be useful, including instilling hope in parents, reducing unpleasant feelings caused by preterm labor, providing useful information, familiarizing parents with the NICU staff and its physical environment, family-centered care, and preparing mothers for neonatal care at home before discharge (24).

Spiritual well-being, mentioned as a life principle in NANDA, is the ability to experience and integrate the meaning and purpose of life through incorporation with oneself, others, art, music, literature, nature, or a power greater than oneself (18,19). Many personality and environmental factors might be effective; moreover, spiritual and religious beliefs may influence the domain and type of coping with stressful situations (25,26). Several factors, such as physiological mechanisms, social supports, social networks, coping strategies, and the environment, have been implicated in how spirituality and religion are effective in reducing

and coping with stress (27,28).

Nurses need to understand mothers' coping strategies and the factors affecting them so that they can understand mothers' conditions and help them to cope effectively (29). Among these mechanisms, coping strategies have been less assessed. Therefore, investigating the correlation between spiritual well-being and the type of coping strategy during stress can lead to a better understanding of the impact of spirituality and coping strategies on stress. In light of the aforementioned issues, the present study aimed to assess the correlation of spiritual well-being with parental stress and coping strategies in mothers with preterm neonates in NICUs.

Methods

Design

This prospective cross-sectional study was carried out during 2017-2019. The participants consisted of all literate mothers with their first experience of child hospitalization in NICUs.

Sampling

Sample size was estimated based on the following parameters ($\beta=0.20$, $\alpha = 0.05$, and $d=0.05$). A total of 200 mothers were selected via the convenience sampling method. Considering the sampling ratio, two hospitals affiliated with Tehran University of Medical Sciences (n1: 50 and n2: 50) and one hospital affiliated with Iran University of Medical Sciences (n3:100) were selected. The inclusion criteria were as follows: age above 18 years, ability to read and write in Persian, Iranian nationality, non-use of anxiolytic drugs over the past 12 months, the absence of stressful events, such as having another child with a serious illness or the death of a first-degree relative in the family, in the past six months, as well as the NICU hospitalization for at least five days. On the other hand, an incomplete questionnaire was regarded as the exclusion criterion. Out of the total participants (n=200), nine subjects were excluded from the study due to incomplete answers to the items of the questionnaires.

Ethical considerations

All ethical considerations of the study were approved by the Institutional Review Board and the Research Ethics Committee at Tehran University of Medical Sciences, Tehran, Iran (92/D/130/667). All participants in the study were informed of the study objectives, signed a written informed consent form, and were assured

of the confidentiality of their personal information and the voluntary nature of participation.

Measurement

After explaining the study goals, mothers answered the questionnaire. The research instruments included a socio-demographic questionnaire, Spiritual Well-being (SWB) Scale, Parental Stressor Scale: Neonatal Intensive Care, and ways of coping scale. Total sampling was conducted in 23 months. The socio-demographic questionnaire had two parts. Maternal items assessed age, average scores at school, literacy level, birth rank, cesarean or vaginal delivery, number of children, and job. Neonatal items investigated gestational age, duration of hospital stay, reason of hospitalization, and maternal stay with her neonate.

Spiritual Well-being Scale

The spiritual well-being (SWBS) scale which was designed by Palutzian and Ellison in 1982 consists of 20 items that measure spiritual well-being in both religious and existential dimensions (30). All items of the scale are rated on a six-point Likert scale, ranging from '1 = exactly agree' to '6 = exactly disagree'. Summing the responses yields a score ranging from 20-120, and higher scores indicate greater SWB. Spiritual health is divided into three levels: low (20-40), moderate (41-99), and high (120-100). The test-retest reliability of the SWBS was assessed by Palutzian and Ellison (30). The Cronbach's alpha of the items in total, as well as religious and existential dimensions, were obtained at 0.93, 0.91, and 0.91 respectively. Soleimani et al. have validated the Persian version of the SWBS through the content validity method and reported a total variance of 50.65% and the Cronbach's alpha of 0.70 for the total scale(30,31). In the present study, Cronbach's alpha of the SWB scale was calculated at 0.88.

Parental Stress Scale

The Parental Stress Scale (PSS), which was designed by Miles & Funk & Carlson 1993(32), has 22 items that measure the parental perception of stressors arising from the physical and psychosocial environment of NICUs. All items of the scale are answered on a six-point Likert scale, ranging from '0 = no stress' to '5 = extremely stressful'. Summing the responses yields a score ranging from 22-110, with higher scores signifying more stress. The Parental Stress Scale is divided into three levels: low (22-54), moderate (55-82), and high levels (83-110). The Cronbach's

alpha was 0.81 and the Content Validity Index was 0.93(32,33). The Cronbach's alpha of the PSS was 0.90.

Ways of Coping Scale

The ways of coping scale which was developed by Folkman and Lazarus in 1988 contains 66 items that assess ways of coping. All items of the scale are rated on a four-point Likert scale, ranging from '0=never' to '3=always'. Summing the responses yields a score ranging from 0-198. The questionnaire measures eight coping strategies that are divided into two categories: planful problem solving (Seeking social support, accepting responsibility, planful problem solving, and positive reappraisal) and emotional-oriented strategies (confronting coping, distancing, escape-avoidance, and self-controlling). Aghayousefi et al. have validated the Persian version of this scale and the Cronbach's alpha of the scale was 0.80 for the total scale (34,35). In this study, the Cronbach's alpha of this scale was calculated at 0.80.

Data Analysis

Data analysis was performed in SPSS software (version 22). Descriptive statistics (mean, frequency, and percentage) were calculated. The Kolmogorov-Smirnov test was used to determine the normal distribution of variables. Pearson correlation coefficient was used to examine the correlation between the variables. A p-value of less than 0.05 was considered significant in all tests.

Results

A total of 200 mothers with preterm neonates participated in this correlational study. Nonetheless, 191 questionnaires were completed and returned (participation rate of 95.5%). Based on the findings, the minimum, maximum, and mean ages of mothers were 18, 40, and 27.64

Table 1. Demographic Descriptive Statistics across Participants

| Variable | Mean±SD |
|-----------------------|---------------------------------|
| Maternal Age(year) | 27.64±5.02 |
| Gestational Age(week) | 35.22±3.62 |
| | N (%) |
| Job | Housewife 149 (78%) |
| | Others 42 (22%) |
| | Total 191 (100%) |
| Level of Education | Primary school 12 (6.3%) |
| | Diploma 29 (15.2%) |
| | High school diploma 92 (48.2%) |
| | College 27 (14.1%) |
| | Postgraduate college 37 (16.2%) |
| | Total 191 (100%) |

(SD =5.02) years, respectively. The majority of them (49.9%) were within the age range of 25-30 years, and 83.77% of the participants had no history of infertility. The majority of neonates (57.86%) stayed at the hospital between 5-10 days. Participants' characteristics are presented in Table 1.

The results demonstrated that 46.6% and 53.4% of mothers had moderate and high levels of SWB, respectively. The SWB scale data analysis revealed that the mean scores of existence and religion domains were 46.03±7.15 and 53.30±7.33, respectively. As displayed in Table 2, seeking social support and the scale of positive reappraisal were used more frequently by mothers, as compared to other subscales. In addition, the planful problem-solving strategy (46.02±11.46) was utilized more frequently, in comparison with the emotional-driven coping strategy (30.138±11.17).

The results also revealed that the religion domain correlated positively with planful

problem-solving strategies and negatively with emotional-driven coping strategies ($r=0.439^{**}$; $P\leq 0/000$ and $r=-0.420^{**}$; $P\leq 0/000$). Moreover, the existence domain had a significant negative correlation with emotional-driven coping strategies ($r=-0.322^{**}$; $P\leq 0/000$). Furthermore, SWB and planful problem-solving had a significant positive correlation ($r =0.280^{**}$; $P\leq 0.000$). The SWB also had a significant positive correlation with seeking social support ($r =.523^{**}$; $P<.000$) (tables 3 and 4).

Table 2. Way of Coping Descriptive Statistics

| Coping strategies | Mean ± SD |
|--------------------------|--------------|
| Confrontive coping | 1.05±0.43 |
| Distancing | 1.348±0.44 |
| Self-controlling | 1.589±0.46 |
| Escape avoidance | 0.892±0.39 |
| Accepting responsibility | 1.73±0.5 |
| Planful problem solving | 1.816±0.47 |
| Positive reappraisal | 2.131±0.47 |
| Seeking social support | 2.276±0.51 |
| Total | 76.158±20.84 |

Table 3. Correlation of spiritual well-being with parental stress and way of coping strategy

| | Parental Stress | emotional-driven coping strategy | Planful problem-solving strategy |
|----------------------|----------------------------|-----------------------------------|----------------------------------|
| Spiritual Well-Being | $r =0.050$ $P\leq.491$ | $r =-0.41$ $P\leq 0/000$ | $r =0.280^{**}$ $P\leq 0.000$ |
| Existence domain | $r=0.060$ $P\leq 0.409$ | $r =-0.322^{**}$ $P\leq 0.000$ | $r=0.069$ $P\leq 0.343$ |
| Religion domain | $r=0.032$ $P\leq 0.662$ | $r =-0.420^{**}$ $P\leq 0.000$ | $r=0.439^{**}$ $P\leq 0.000$ |
| Parental Stress | | $r=0.138$ $P\leq 0.058$ | $r=0.145^*$ $P\leq 0.045$ |

* $P<0.05$ ** $P<0.01$

Table 4. Correlation of spiritual well-being with parental stress and way of coping strategy subscales

| | Self-controlling | Escape avoidance | Distancing | Confrontive coping | Positive reappraisal | Planful problem solving | Accepting responsibility | Seeking social support |
|----------------------|------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|--------------------------|----------------------------|
| Spiritual Well-Being | $r =-.031$ $P<.670$ | $r=-.521^{**}$ $P<.000$ | $r =-.130$ $P<.073$ | $r =-.281^{**}$ $P<.000$ | $r =.318^{**}$ $P<.000$ | $r =.080$ $P<.271$ | $r =-.040$ $P<.581$ | $r =.423^{**}$ $P<.000$ |
| Existence domain | $r =-.134$ $P<.066$ | $r =-.403^{**}$ $P<.000$ | $r =-.083$ $P<.253$ | $r =-.139$ $P<.055$ | $r =.152^*$ $P<.036$ | $r =-.039$ $P<.596$ | $r =-.171^*$ $P<.018$ | $r =.247^{**}$ $P<.001$ |
| Religion domain | $r =.077$ $P<.295$ | $r =-.546^{**}$ $P<.000$ | $r =-.154^*$ $P<.033$ | $r =-.372^{**}$ $P<.000$ | $r =.426^{**}$ $P<.000$ | $r =.182^*$ $P<.012$ | $r =.094$ $P<.194$ | $r =.523^{**}$ $P<.000$ |
| Parental Stress | $r =-.061$ $P<.403$ | $r =.027$ $P<.707$ | $r =.224^{**}$ $P<.002$ | $r =.151^*$ $P<.037$ | $r =-.023$ $P<.748$ | $r =.253^{**}$ $P<.000$ | $r =.154^*$ $P<.034$ | $r =.027$ $P<.716$ |

* $P<0.05$ ** $P<0.01$

Discussion

The present study assessed the correlation of spiritual well-being with parental stress and coping strategies in Iranian mothers with preterm newborns hospitalized in NICUs. The obtained results indicated that mothers' level of SWB was high and the religion domain had a higher score,

compared to the existence domain. The two items of "feeling connected to God" and "feeling the future unknown" had the highest and lowest scores on the SWB scale, respectively. This research supported the previously conducted studies (36,37). Seyed Fatemi et al. presented that the statement: "I believe God loves me and is always watching me" had been used more

frequently by Iranian adults with cancer. They concluded that the religion domain was more effective than the existence domain in SWB (38,39).

Spiritual health is one of the important basic aspects of health; therefore, the health care team should have a clear and common understanding of this concept (40). Spiritual and cultural diversities should be considered during holistic care and educational sessions on spirituality should be included in the training programs of registered nurses (41,42). Nevertheless, Brelsford and Doheny concluded that parents without religious or spiritual views are capable of effective care of their neonates and reported no change in their religious or spiritual beliefs (43).

Brelsford and Doheny mentioned that the parents who do not engage in spiritual and religious practices may not necessarily cope better but might consider their challenges in life as a result of not engaging in such practices (43). Taking spiritual values much into consideration by Iranians might be justified by the country's religious context. In this regard, 98% percent of the Iranian population are Muslim, 90% of whom are Shia. In Iran, religion is merged into the culture and it is believed to have a critical role in their everyday lives (44). In the current study, mothers demonstrated moderate and high levels of stress. Mothers felt stressed while observing their neonates undergoing painful procedures. Jabraeili et al. and Woodward et al. demonstrated that neonatal painful procedures are the greatest stressors for mothers (45,46).

The results of this study pointed out that mothers used a planful problem-solving approach more frequently, as compared to other ways of coping. This result supports previous findings (47-49). Sorato et al. concluded that positive reappraisal, seeking social support, accepting responsibility, and planful problem-solving strategies of coping were employed more frequently (50). Moreover, Harbitz et al. revealed that patients used planful problem-solving in situations they assumed hazardous (51).

Folkman and Lazarus indicated that if a person believes in the controllability of stress, he/she will use a planful problem-solving strategy; otherwise, he/she will use an emotional-driven coping strategy. Furthermore, in case of stress and social interaction, he/she often uses the planful problem-solving strategy, and the emotional-driven coping strategy is often utilized in dealing with health-related stress (17). When faced with the hospitalization of their

neonates, people with different personalities may choose similar coping strategies. Based on the results of the current study, seeking social support is a more frequently utilized planful problem-solving strategy. This strategy reflects individual efforts to obtain informational, emotional, and concrete support. Furthermore, mothers expect information and social support from the caring staff; otherwise, one of the most important ways of coping will fail. Therefore, this result may improve professionals' understanding of parents' needs for information and support. The assessment of religious and spiritual experiences in parents' lives is a salient aspect in NICUs.

Safavi et al. indicated that there was an inverse significant correlation between spiritual intelligence and stress in patients with cancer undergoing chemotherapy (52). Wood et al. pointed to the fact that there was a negative correlation between SWB and post-traumatic stress disorder symptoms in United State (53). Moreover, Mihaljevic et al. suggested that there was a significant difference in the level of cortisol in participants with lower SWB, as compared to those with higher SWB in Croatia (54). In the current study, the inverse correlation between SWB and stress might be due to high levels of mothers' stress caused by their neonates' hospitalization. Furthermore, this can be related to different scales used to measure stress. In the present study, there was an adverse correlation between SWB and emotional-driven coping strategies.

Nevertheless, no significant correlation was observed between SWB and planful problem-solving strategy. A significant negative correlation was found between SWB and escape avoidance strategy. This result is in agreement with those reported by Roux et al. (55); nonetheless, Shah et al. and Das et al. concluded that there was no relationship between "escape avoidance" and SWB (56,57). The present study indicated that mothers with higher SWB could successfully manage their stress probably due to their hope and patience. The SWB has been directly associated with coping strategies.

Finally, there was no correlation between stress and the type of strategy being used. This is an adverse Folkman and Lazarus coping model. They reported that people with high levels of stress utilize an emotional-driven coping strategy, whereas those with low levels of stress make use of the planful problem-solving coping strategy (34).

Implications for Practice

It is believed that the selection of a specific coping strategy is related to one's cultural context and past personal experiences and might be experienced in some societies where individuals are exposed to multiple stressors. In such societies, the planful problem-solving coping strategy should be used to improve the chance of survival.

Limitations and Recommendations

The present study was conducted by a multidisciplinary team consisting of nurses and physicians. All participants were Muslim. Other religions can be different in their point of view. Therefore, it is recommended to perform correlational research on "religious affiliated" and "non-religious affiliated" groups. Moreover, the use of SWBS, parental stress, and ways of coping scales pose some limitations due to their probable bias while self-reporting. Furthermore, although mothers were reassured that their information would be kept confidential, some of them seemed to answer the questions incorrectly out of their fear of being considered irreligious.

Conclusion

Mothers with different spiritual health levels tolerate higher levels of stress and use the planful problem-solving coping strategy more frequently. Regarding the close interrelationship between mothers and the NICU staff, it is clear that the main source of social support for mothers is the NICU staff, especially nurses. Nurses can help mothers to cope with stress more quickly and efficiently by evaluating their parenting skills, as well as providing parents with useful and accurate information about their parental role in order to improve their neonate's condition. In addition, informational, instrumental, emotional, and social support can be effective. Moreover, regarding the significant correlation between the religious dimension of SWB and the planful problem-solving strategy, parents' spiritual and religious beliefs should be respected while their neonates are hospitalized at NICUs.

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Conflicts of interest

The authors declare that they have no conflict of interest.

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Authors' contributions

Design study: Maliheh Kadivar and Mohammad Ali Cheraghi, Data Gathering: Soraya Shojaee Jeshvaghaneh and Saleheh Tajalli, Data Analysis: Marjan Kouhnavard, Preparation Manuscript: Maliheh Kadivar, Saleheh Tajalli, Marjan Kouhnavard, Critical Review Manuscript: Mohammad Ali Cheraghi and Naima Syed Fatemi.

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