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Short Cmmunication: Comparing Neonatal Intensive Care Unit Nursing Support in Mothers With Newborn Abstinence Syndrome (NAS) and Mothers of Healthy Neonates

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ABSTRACT

Background: The experience of having neonates in the Neonatal Intensive Care Unit (NICU) is a psychological crisis. It might cause many emotional problems for parents. Entire parental support is among the duties of the healthcare team. Therefore, this study aimed to compare the nursing support received by the mothers with Newborn Abstinence Syndrome (NAS) and the mothers of other neonates admitted to the NICU.

Methods: The present cross-sectional descriptive-analytic study was conducted in the selected hospitals in Kerman Province, Iran. In total, 62 mothers with NAS and 61 non-addicted mothers with neonates admitted to the NICU were selected through convenience sampling method. The inclusion criteria were neonates under the care of parents, neonate admitted to the NICU for at least 24 hours, opiate dependence in the case group mothers, and no substance dependence in the control group mothers. The amount of nursing support for mothers having neonates with NAS was compared with that of the control mothers. The study groups were homogenized in terms of the study variables (neonate age, gender, and the duration of hospitalization). The required data were collected by the Nurse-Parent Support Tool (NPST) and analyzed in SPSS.

Results: The study results revealed that among the neonates of 123 mothers, 75 (60.97%) were boys, and 58(39.02%) were girls. The majority of neonates in both groups were breastfed. The Mean±SD age of the mothers in the case and control group were 31.93±7.25 and 28.99±4.36 years, respectively. The nursing support level was desirable in both groups, and no significant difference was found in this regard (P>0.05). Furthermore, the level of nursing support in emotional, information-communication, self-esteem, and quality caregiving support dimensions was desirable in both groups.

Conclusion: The obtained results revealed that nurses' support was desirable in both groups. The prevalence of maternal addiction and the impact of this social harm on neonates who were admitted are essential. Furthermore, families having neonates with NAS need more support from the healthcare staff and nurses, in comparison with healthy parents; thus, the importance of this issue should be addressed in training and briefing courses for nurses.

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1. Introduction

Pharmacological effects of opioids, such as pain relief medications, have been recognized for centuries; however, these substances have been abused over the years and caused one of the most significant social harms, called dependence [1]. Opioid dependence is a behavioral state that requires the continuation of opioid use to avoid a series of disgusting complications of opiate withdrawal syndrome [2]. This syndrome includes a series of physiological and behavioral changes along with motivational aversion stimulation following single-dose or repeated doses administration of a morphine-like agent that has been stabilized with an opioid antagonist [3].

Substance abuse potentially threatens various populations, including pregnant women; it results in adverse side effects and consequences for the mother and fetus [4, 5]. The effect of substance abuse on fetus might include premature infant death, low birth weight, preterm delivery, intrauterine growth disturbances, developmental and behavioral disorders, and the Newborn Abstinence Syndrome (NAS) [6, 7].

The experience of having neonates in NICU is a psychological crisis that might cause many emotional problems for parents [8, 9]. One study has reported that most mothers need the help of nurses in satisfying their needs [10]. However, the nurses' performance in the ICU is mainly focused on the neonates' survival and developmental needs [8]. Nursing support of parents with neonates admitted to ICU has increased parents' satisfaction and decreased their stress [10, 11]. The NICU nurses are supposed to provide appropriate care for the neonates and their parents. Nurses should adequately understand the needs of parents and how to meet them [12].

It seems that knowing the nursing support level received by parents and their expectations of nursing care are among the primary required steps to identify these strategies. In our country, data on the received nursing care level, especially the importance of these supports for the parents having neonates with Newborn Abstinence Syndrome are scarce. Therefore, this study aimed to compare the nurses' support for families of neonates with NAS with other neonates' families admitted to the NICU of Ali ibn Abi Talib Hospital in Rafsanjan City, Iran, and Afzalipour Hospital in Kerman City, Iran, in 2017.

2. Materials and Methods

This descriptive-analytical and cross-sectional study was conducted on mothers with neonates admitted to the NICU. After obtaining the ethics code and necessary permissions, the sample was selected through convenience sampling method. As a result, the sample was selected from the mothers who met the study inclusion criteria, whose neonates were admitted to the NICU, and volunteered to participate in the study.

The inclusion criteria were neonates under parental care, neonates admitted to the NICU for at least 24 hours, opiate dependence in the case group mothers, and no substance dependence in the control mothers. The sample size was 123 mothers, estimated at 95% confidence level and 80% test power, and assuming the correlation coefficient of at least r=.25.

First, the parents of neonates with NAS were selected through convenience sampling technique and were homogenized with the control group in terms of age, gender, and hospitalization duration. The study objectives were explained to the subjects, and the informed consent was collected. After obtaining the required permission from the officials, the questionnaire was distributed among the subjects, and they were ensured about the confidentiality of their data. The required data were collected by Nurse-Parent Support Tool (NPST) which included 25 items. This questionnaire was developed by Miles et al. (1999) [13] and included 4 dimensions namely emotional support (3 items), communication-information (9 items), self-esteem (4 items) and quality caregiving (5 items). The higher the score, the higher the nursing support would be.

The validity of the research tools was investigated using qualitative content validity methods in cooperation with 10 professors from a faculty of nursing and midwifery as well as psychologists and pediatricians, and the necessary changes were applied. Moreover, reliability of tools was performed through internal consistency using Cronbach's alpha by 20 mothers (r =0.91). Also, the reliability and validity of the questionnaire was approved by Mehdizadeh et al. in Zanjan [14], and Akbarbegloo in Tabriz [15].

The obtained results were described as Mean±SD in continuous variables. Furthermore, the frequency and percentage of categorical variables were reported. Fisher's exact test was used to evaluate the association between categorical variables. The normality of continuous variables was checked using the Kolmogorov-Smirnov test. Non-parametric statistics were applied for data analysis. The Mann-Whitney U test was used for between-group comparisons. The significance level for

statistical tests was set at 0.05. SPSS was used for statistical analysis.

3. Results

This study compared the nursing support received by mothers having neonates with NAS with the mothers of healthy neonates hospitalized at the NICU. Demographic information of mothers and neonates are presented in tables 1 and 2. The achieved results revealed no significant difference between the two groups in terms of age, birth weight, first Apgar, hospitalization duration, and gestational age (P>0.05); however, mothers' age and the number of children in the family was significantly higher in the case group (P<0.05).

The frequency distribution of mothers' educational level, family economic status, and the neonates' birth order in the two groups is listed in Table 1. The obtained results revealed that the level of mothers' education and family economic status were significantly lower in the case group (P<0.05). Moreover, the birth order of the neonates was significantly higher in the case group (P<0.05). Additionally, the Chi-squared test results with odds ratio revealed that the frequency of breastfeeding was significantly higher in controls than the case group (P<0.05); however, there was no significant group difference in the distribution of neonate gender (P>0.05).

Chi-squared test results revealed that the frequency of vaginal delivery was significantly higher in the case group compared to the control group (P<0.05); however, there was no significant group difference in mother's occupation and place of residence (P>0.05). Moreover, Fisher's exact test revealed no significant difference between the two groups in the frequency distribution of the marital status of mothers (P>0.05) (Table 2).

Table 3 presents that the amount of nursing support for the case and control groups are satisfactory. Normality test suggested non-normality (P<0.05); then, the Mann-Whitney U test results revealed no significant difference between the mean score of the nursing support received by the two groups (P>0.05).

Table 1. Frequency distribution of demographic information of mothers and neonates in study groups

Variable		N (%)		Chi-squared Test	
		Case Group	Control Group	X^2	P
Mothers' educational level	Illiterate	12 (19.7)	1 (1.6)	41.86	<0.001
	High-school	24 (39.3)	6 (9.7)		
	Diploma	22 (36.1)	27 (43.5)		
	Associate degree	3 (4.9)	13 (21)		
	Bachelor's or above	0 (0)	15 (24.2)		
Family economic status	Low	13 (21.3)	8 (12.9)	10.89	0.004
	Middle	44 (72.1)	36 (58.1)		
	High	4 (6.6)	18 (29)		
Birth order	First	15 (24.6)	20 (33.3)	47.44	<0.001
	Second	3 (4.9)	29 (48.3)		
	Third	16 (26.2)	10 (16.7)		
	Fourth	17 (27.9)	1 (1.7)		
	Sixth	10 (16.4)	0 (0)		
Gender	Boy	30 (49.2)	35 (56.5)	0.62	0.42
	Girl	31 (50.8)	27 (43.5)		
Neonate feeding	Breastfeed	40 (67.8)	53 (91.4)	14.39	<0.001
	Infant formula	8 (13.6)	1 (1.7)		
	NPO	4 (6.8)	0 (0)		
	Breastfeed and infant formula	7 (11.8)	4 (6.9)		

Table 2. Frequency distribution of delivery type, occupation, and marital status of mothers and place of residence

Variable		N (%)		Chi-squared test	
		Case	Control	χ^2	P
Delivery type	Cesarean Section	19 (32.2)	35 (57.4)	7.68	0.006
	Vaginal	40 (67.8)	26 (42.6)		
Mother's occupation	Housekeeper	46 (75.4)	52 (83.9)	1.36	0.24
	Employed	15 (24.6)	10 (16.1)		
Mother's marital status	Divorced	2 (3.3)	0 (0)	1.52	0.24
	Married	58 (96.7)	62 (100)		
Place of residence	City	41 (67.2)	41 (66.1)	0.02	0.90
	Village	20 (32.8)	21 (33.9)		

Table 3. The Mean±SD scores of dimensions of nurses' support in both groups

Dimension	Mean±SD		Mann-Whitney U test	
	Case	Control	Z	P
Emotional support	66.87±31.65	62.97±33.45	-0.75	0.45
Communication-information	65.18±23.83	64.90±28.66	-0.179	0.86
Self-esteem	61.22±27.97	62.97±26.22	-0.339	0.73
Quality caregiving	73.28±25.05	72.35±26.89	-0.069	0.94
Nurses' support	66.51±25.43	66.02±26.96	-0.051	0.96

The Mann-Whitney U test results revealed no significant difference between the two groups in the mean scores of the dimensions of nursing support, including emotional support, communication-information, self-esteem, quality of caregiving, and nurses' support (P>0.05).

4. Discussion

The obtained results revealed that the number of studied boys and girls were equal and the majority of the neonates in both groups were breastfed; however, the frequency of breastfed neonates was significantly higher in controls than the case group. Azizmohammadi et al. reported that the neonates of the substance depended mothers had lower weight and Apgar score, compared with those of non-addicted women [16]. Furthermore, less breastfeeding in the case group might be due to the mothers' fear of transmitting narcotics to neonates or that they are less inclined to breastfeeding due to their infrequent presence besides their neonates.

The collected results suggested that the mothers' educational level and the family economic in the case group were significantly lower than those of the control group. In line with this study, the results of Alaee Karhrouy et al. indicated that the majority of mothers had high-school education and were mostly housewives. The majority of the samples had one child; the newborns were approximate of equal gender, and the most frequent type of delivery was cesarean section [17]. The results obtained from Alaee Karhrouy et al.'s study, such as the number of children and delivery type are contrary to the results of the present study. This contradiction might be justified by considering the place and geographic location of these two studies.

Additionally, the present study revealed that the mothers having neonates with NAS received desirable support from the nursing team. Maguire et al. reported deficient nursing support of the families having neonates with NAS, which is inconsistent with the findings of the present study. However, the nurses participating in Maguire et al.'s study were inquired about the reason for low support. They mentioned various reasons, including the aggressive behavior of the substance-dependent mothers towards nurses [18]. To justify the inconsistency in these findings, the different geographic locations and the research site of these two studies must be considered. In other words, the present study and the one conducted by Maguire et al. were conducted in two different countries; therefore, the culture of the patients and nursing staff also varied.

Furthermore, the finding of the desirable nursing support found in the present study was in line with those of Cheraghi et al.; they reported that 76.1% of the communication skills of nurses with mothers and 78.2% of their communication with children were somewhat desirable [19]. The study conducted by Jackson et al. in Sweden revealed that the nurses' support of families with neonates admitted to NICU and the critical information provided for parents were satisfactory from the nurses' point of view, and this support was of crucial importance [20]. Magton et al. investigated how nurses empathy with the families having neonates admitted to NICU in Australia. The results of Maxton et al.'s study was contrary to the findings of the present study which might be becaue the parental support during the treatment course of their neonates might have led to occupational stress for nurses; as a result, they might not have been interested in providing such support [21].

The archived results also revealed no significant difference between the mean scores of nurses' support in the two groups. Similarly, Maguire et al. reported that nurses required additional knowledge for providing care to substance-dependent parents [18].

Crocetti et al. also concluded that nursing care and support, standard guidelines for the assessment and management of neonates with NAS and hospital services provided to these neonates are undesirable; therefore, these neonates are commonly exposed to dangers and complications [22].

Identifying the level of support and supportive strategies help the ICU team to plan more appropriate care [23]. Thus, the awareness about the nursing support level received by parents and their expectations of receiving nursing care is among the primary steps required for identifying these strategies.

In Sheilds' study, parents believed that if they are supported by the personnel and received the required information, they will be able to meet part of their own and their neonates' needs. The development and promotion of neonatal rights are one of the most crucial roles of neonatal nurses [24]. Furthermore, promoting the patients and their family's ability to participate in care programs is among the ethical responsibilities of the care team. Granting parents the right to decide makes them feel like they are part of a care team. Therefore, besides meeting the neonates' needs, the health care system should address the parents' concerns and needs, as well. Additionally, mothers with substance dependence, compared with the non-addicted ones, were less willing to breastfeed their neonates. Thus, they require appropriate training in this regard. In general, all strategies must be considered to help the substance dependent mothers having neonates with NAS to suffer less harm and raise healthy children.

A limitation of this study was the small sample size. In some cases, respondents gave inaccurate information or avoided to impart information. They showed no interest during the interview.

5. Conclusion

The present study results revealed that the nurses' support of the parents having hospitalized neonates with NAS was similar to that of other hospitalized neonates; no significant difference was observed between the two groups. This finding suggested that nurses similarly cared the neonates born by the substance-dependent and healthy mothers. Furthermore, none of the nursing support dimensions, including emotional support, information-communication support, self-esteem, and quality caregiving differed between the two groups of mothers. It is unclear whether mothers having hospitalized neonates with NAS need further support from the medical staff, especially the nursing staff, which necessitates further investigations.

Nonetheless, given that the health status of this group of neonates largely depends on the proper implementation of the care program and raising the support and awareness of their parents, increasing the level of parental performance, and providing specialized support for them in terms of the nature of this syndrome, timely delivery of the neonate, preventing complications, as well

as considering their beliefs and attitudes is of significant importance.

Considering the increased substance abuse rate, including the opioids, the NAS seems to be a prevalent problem for medical staff and nurses managing these neonates. Furthermore, the main treatment principle in this group of patients and their families is the supportive care provided by the organizations and the medical staff. Therefore, considering the points mentioned above and the obtained results, providing training workshops might help to increase the awareness of all those involved in the care process of the neonates with NAS.

Ethical Considerations

Compliance with ethical guidelines

This study has been approved by the Ethics Committee of Islamic Azad University, Isfahan Branch (Khorasgan) with the identification code: IR.IAU.NAJAFABAD.REC.1396.41. Publication of the results is carried out without bias, Informed consent, honestly and by citing the original reliable resources and references.

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Author's contributions

Designing the study: Arash Ghodousi, Seyedeh Najmeh Hosseini, Narges Sadeghi; Supervision: Arash Ghodousi; Methodology: Seyedeh Najmeh Hosseini, Arash Ghodousi, Narges Sadeghi and Somayeh Abbasi; Date acquisition: Seyedeh Najmeh Hosseini, Narges Sadegi and Somayeh Abbasi: Analyzing data: Seyedeh Najmeh Hosseini, Arash Ghodousi and Somayeh Abbasi; Finalizing the manuscript for English style and Language: Arash Ghodousi and Narges Sadegi.

Conflict of interest

The authors declared no conflict of interest.

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