



Ethical Performance of Neonatal Nurses in Neonatal Intensive Care Units

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DOI: 10.22037/jnm.v31i4.39131

Submitted: 14 May 2022

Accepted: 31 Sep 2022

Published: 15 Oct 2022

Keywords:

Nurses, Neonatal, Intensive Care Units, Neonatal Ethics, Codes of Ethics

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How to cite:

Ezati A, Shakeri F, Shahsafi F, Mahdizadeh Shahri M, Farjami M, Varzeshnejad M. Ethical Performance of Neonatal Nurses in Neonatal Intensive Care Units. *Adv Nurs Midwifery*. 2022;31(4): 38-45. doi: 10.22037/jnm.v31i4.39131

Abstract

Introduction: Lack of adherence to the nursing code of ethics in neonatal wards is usually an issue in hospitals. The present study explored neonatal nurses' adherence to the nursing code of ethics in the neonatal ward, using the Neonatal Nurses' Ethical Performance Self-Report Questionnaire and the Neonatal Nurses' Ethical Performance Observation Checklist.

Methods: In this descriptive study, 132 Nurses from 5 neonatal wards from two pediatric hospitals in Tehran were recruited by census sampling.

Results: The results showed that the mean score of the self-report questionnaire (86.12+10.34) and observational checklist (80.98+10.34) was within the desired performance range. The domain of improving the quality of care had the highest score (94.25+3.40) in the self-report questionnaire, and the domain of justice had the highest score (95.00+0) in the observational checklist. The domain of respect for autonomy had the lowest mean score in the self-report questionnaire (64.31+22.22) and the observational checklist (67.50+6.19). There was no significant relationship between the ethical performance score reported by nurses and nurses' demographic variables ($P>0.05$), and the specific condition of the neonates affected the ethical performance of nurses in neonates' demographic variables (P -value =0.002).

Conclusions: The finding showed that, overall, the performance of neonatal nurses regarding ethical codes is desirable.

INTRODUCTION

The lack of nurses' adherence to the nursing code of ethics has challenged some neonatal wards and neonatal

intensive care units. Ethical codes are the general principles, rules, and standards, including ethical

standards and guidelines for employee performance in their roles [1]. When ethical codes are followed in healthcare service provision, the quality of care will improve [2]. Worldwide, 3.3 million neonates die annually in the first month of life [3] which could be decreased by neonatal nurses' adherence to the nursing code of ethics. One of the successful interventions in reducing neonatal mortality is overcoming ethical challenges in neonates' care and treatment [4]. The Association of Neonatal Nurses also supports and encourages the implementation of ethical codes in neonatal care wards [5]. Advances in technology and the expansion of nursing roles have led to complex ethical challenges in nursing [6].

Although ethical codes are important in professional nursing, it is estimated that only a small number of nurses have sufficient information about these codes; and there is limited information about the extent to which ethical codes are observed among neonatal nurses [7]. Previous studies revealed barriers to ethical performance in nurses' work environments that impacted their ability to provide appropriate ethical care [8].

In recent years, providing high-quality, safe, and efficient services have been required by healthcare organizations [9], and addressing the issues of ethics and developing ethical guidelines have been among the priorities in healthcare in Iran. 'The Nursing code of ethics has been developed in 1999 to provide a guideline for ethical healthcare service provision in Iran [10].

Since the presentation of nursing ethical codes in Iran, various research has been conducted to explore the adherence and implementation of the nursing code of ethics [8, 11], but most of them explored the views of nurses or nursing students [12, 13]. In addition, most studies only used self-report questionnaires in their research [7, 12]. However, exploring the actual ethical performance of nurses is important.

Given that nurses' lack of adherence to professional ethics in the health care system may impact patients' satisfaction and recovery and quality of care, exploring the neonatal nurses' adherence to the nursing code of ethics and rooting out the factors related to lack of compliance with the codes seems necessary. Therefore, this study aimed to explore neonatal nurses' adherence to the nursing code of ethics using self-report and observation tools.

METHODS

A descriptive-comparative study was used to explore nurses' adherence to the nursing code of ethics in Tehran. A census sampling method was used, and 5 neonatal wards and neonatal intensive care units in two pediatric hospitals affiliated with Shahid Beheshti University have been selected in Tehran. The duration of sampling was about 4 months. Participants in this

study included 132 nurses and 398 observations of nurses' care performance. According to the statistics consultant's opinion, each nurse's performance at least in three situations was accessed and recorded by one observer (one of the researchers who was a neonatal nurse).

The study materials included the Nurses and Neonatal Demographic Information Questionnaire, the Neonatal Nurses' Ethical Performance Self-Report Questionnaire, and the Neonatal Nurses' Ethical Performance Observation Checklist.

We used the modified version of the Pediatric Nurses' Ethical Performance Self-Report Questionnaire developed by Beik Mirza et al. [14], which is more appropriate for neonatal wards and neonatal intensive care units. This questionnaire includes 28 items in 8 domains: "Patient Respect" (5 items), "Patient education" (3 items), Respect for autonomy (4 items), "Commitment to honesty" (2 items), "Commitment to justice" (2 items), "Commitment to confidentiality" (2 items), "Conscientiousness" (4 items), and "Improving the quality of patient care" (6 items). It was scored using a 5-point Likert scale, from "0" to "112". A total score of less than or equal to 56 reflected "undesirable", a score of 57 to 84 was "relatively moderate", and a score of 85 to 112 reflected "desirable" performance [14].

In this study, the observational checklist of nurses' ethics performance as a researcher-made checklist was developed according to the Pediatric Nurses' Ethical Performance Questionnaire" was developed and evaluated psychometrically by Beik Mirza et al. This observational checklist was scored as follows: performed correctly=2, not performed correctly=1, not performed=0, and it was not necessary=2. The checklist was then scored using the formula below:

Checklist

score=

$$\frac{(number\ of\ not\ performed\ correctly + 2) \times (number\ of\ performed\ correctly + number\ of\ "it\ was\ not\ necessary")}{(total\ number\ of\ checklist\ items) \times 2}$$

In this formula, a score of 68 to 100 shows desirable care, a score of 34 to 67 suggests moderate care, and a score of 0 to 33 indicates undesirable care [15]. The "Pediatric Nurses' Ethical Performance Questionnaire" was developed and evaluated psychometrically by Beik Mirza et al. [14]. In this study, the face and content validity of the questionnaire was evaluated and established. CVR and CVI were used as two indices of content validity and the results were reported to be 0.80 and 0.90, respectively. The face validity of the instrument was done using the opinions of 10 nurses participating in the study by assessment of the item's appearance, spelling and grammar, clarity, and simplicity of the items, and the proposed changes were applied. The reliability of the "Pediatric Nurses' Ethical Performance Questionnaire" was reported as $\alpha=0.92$ in Iran using Cronbach's alpha. In the test re-test method,

the reliability was $r=0.96$ [15]. In the present study, the reliability of the "Ethical Performance of Neonatal Nurses Questionnaire" was reported as $\alpha=0.90$ using Cronbach's alpha method (internal consistency) and the test re-test method gave a coefficient of $r=0.92$, in a two-week interval and using the opinions of 10 nurses. Moreover, the intra-observer agreement method was used for the reliability of the "Ethical performance of neonatal nurse's checklist" as $r=0.89$, and the correlation coefficient within the categories was calculated as $ICC=0.85$. In this study, participants have been provided with verbal information about the study, the right to participate or withdraw, the confidentiality of the accumulated personal data, and deidentifying names in publications. Participants signed a printed consent form before participation. The inclusion criteria were at least two months of work in the neonatal units and the exclusion criteria were the withdrawal or transfer of the nurse to other units, fortunately, none of the nurses from the study were excluded.

The nursing care positions observed in this study included 8 situations: medication therapy, admission, discharge, patient education, intravenous intervention, monitoring, feeding, and respiratory care. Each nurse was observed in three different situations and the observation checklist was completed by one of the

researchers. On the same day, the demographic characteristics of the neonate who were being cared for by the nurse were completed too. After the observation, a self-report ethical care questionnaire and demographic information questionnaire were provided to the nurses participating in the study.

The data were imported into SPSS version 22 and analyzed with descriptive statistical methods such as determining the frequency and percentage, mean and standard deviation. Also, Spearman correlation tests were used to determine the correlation and an independent t-test was used to compare the means.

RESULTS

Demographic details of the participants are provided in (Tables 1, 2). The results of the Spearman correlation test showed that there was no significant relationship between the ethical performance score reported by nurses and nurses' demographic variables ($P>0.05$) (Table 3). Regarding the relationship between neonatal demographic variables and the mean score of the observation checklist, the independent t-test showed that only the specific condition of the neonates affected the ethical performance of nurses ($P\text{-value}=0.002$) (Table 4).

Table 1. Nurses' demographic variables

Nurses Demographic Variable / Category	Frequency	Percentage
Age(years)		
20 to 30	44	33.3
31 to 40	65	49.2
41 to 50	20	15.2
Unknown	3	2.3
Education		
Bachelor	120	91
Masters	10	7.6
Unknown	2	1.4
Marital Status		
Married	93	70.5
Single	38	28.8
Other	1	0.7
Nursing work experience		
6 months to 5 years	36	27.3
6 years to 10 years	29	22
11 years to 15 years	38	28.8
16 years to 20 years	12	9.1
More than 20 years	12	9.1
Unknown	5	3.7
Neonatal Nursing Experience		
Less than 5 years	60	45.4
6 to 10 years	34	25.7
11 to 15 years	16	12.2
16 to 20 years	16	12.2
More than 20 years	1	0.7
Unknown	5	3.8
Number of children		
0	63	47.7
1	38	28.8
2	23	17.4
3	7	5.4
Unknown	1	0.7
Passing the ethics course		
Yes	72	54.6
No	38	28.8
Unknown	22	16.7

Table 2. Neonatal Demographic Variable

Neonatal Demographic Variable / Category	Frequency	Percentage
Sex		
Boy	225	56.5
Girl	173	43.5
Gestational Age(weeks)		
26 to 30	45	11.3
31 to 34	117	29.4
35 to 38	187	47
39 to 42	48	12.1
Unknown	1	0.2
Neonatal Age(days)		
1 to 10	313	78.6
11 to 20	55	13.8
21 to 30	20	5
More than 30	1	0.2
Unknown	9	2.4
Neonatal Weight (gr)		
500 to 1500	75	18.8
1501 to 2500	129	32.4
2501 to 3500	156	39.2
3501 to 4500	38	9.6
Race		
Iranian	333	83.6
Non-Iranian	56	14
Unknown	9	2.4
The presence of the nanokatal's mother		
Yes	291	73.1
No	93	23.4
Unknown	14	3.5
The special condition of the neonate		
Unknown parents	2	0.8
Multiple Birth	17	4.3
Golden baby	35	8.6
End Stage	11	2.6
Covid 19	5	1.3
Addicted mother	17	4.3
No special conditions	311	78.1

Table 3. Relationship between the Ethical Performance Score Reported by Nurses and Nurses' Demographic Variables

Nurses' Demographic Variables	Spearman Correlation Test	P-Value
Age of nurses	r = 0.01	0.86
Number of children	r = 0.08	0.37
Years of nursing experience	r = 0.08	0.93
Years of neonatal nursing experience	r = 0.04	0.79

Table4. Relationship between Neonatal Demographic Variables and the Mean Score of the Observation Check List

Neonatal Demographic Category	Variables/ Frequency	Mean	Standard Deviation	P-Value	Independent T-Test
Special condition					
Yes	64	107.03	7.59	0.002*	3.09
No	285	110.37	7.86		
Presence of the mother					
YES	254	109.66	7.20	0.72	- 0.35
NO	83	110.09	10.15		
Neonatal sex					
Girl	149	108.91	7.66	0.08	- 1.74
Boy	200	110.40	8.04		
Neonatal Race					
Iranian	296	109.67	7.81	0.25	-1.14
Non-Iranian	47	11.08	7.90		

Table 5. Mean and Standard Deviation of Domains of Ethics Codes in Self-Report Questionnaire and Observation Check List.

Items	Mean and Standard Deviation		
	Self-Report Questioner	Observational Check List	
The Domain of Professional Ethical Codes			
1	Improving the quality of care	94.25+3.40	88.33+8.07
2	Commitment to justice	94.12+2.30	95.00+0
3	Commitment to confidentiality	92.87+0.53	89+0
4	Commitment to honesty	90.50+2.83	85.50+4.95
5	Conscientiousness	88.12+2.42	78.50+2.38
6	Respect for the patient	87.20+5.42	79.20+6.10
7	Education of the patient	77.58+10.75	69.33+4.50
8	Respect for autonomy	64.31+22.22	67.50+6.19
Total		86.12+10.34	80.98+10.34

The average score of the self-report questionnaire was 86.12 ± 10.34 which is within the desired performance range. The domain of improving the quality of care had the highest mean score (94.25 ± 3.40) and the domain of respect for autonomy (64.31 ± 22.22) had the lowest mean score (Table 5).

Among the items of the self-report questionnaire about improving the quality of care, the item: "I pay attention to the patient's safety points to prevent physical injury such as closing the incubator door", obtained the highest average score (97.75 ± 0.30), and item: "I give the neonate's family the right to make decisions and to be present at the place of nursing interventions as much as possible" received the lowest average score (38.75 ± 1.30) in the domain of respect for autonomy.

The total score of the observational checklist in percentage (80.98 ± 10.34) shows the ethical performance of nurses in a desirable situation. In different domains of the observation checklist, the domain of commitment to justice had the highest score (95 ± 0) and the domain of patient education (69.33 ± 4.50) had the lowest score (Table 5).

Among the items of the observational checklist, the item: "The nurse gives the neonate's family the right to make decisions and attend the nursing interventions as much as possible" in the domain of "respect for autonomy", obtained the lowest score with an average score of 67.50 ± 6.19 , and in the domain of "improving the quality of care", the item: "The nurse verifies the name and identity of the neonate before performing any nursing intervention" and the item: "The nurse pays attention to the patient's safety points to prevent physical injury such as closing the incubator doors" obtained the highest score with a score (96 ± 3.36).

There is a difference in ranking of the scores of different domains between the self-report questionnaire and the observational checklist so in the self-report questionnaire, the following domains received the highest mean scores: 1. Improving the quality of care, 2. Commitment to justice, 3. Commitment to confidentiality, 4. Commitment to honesty, 5. Conscientiousness, 6. Respect for the patient, 7. Education of the patient, and 8. Respect for autonomy. Besides, in the observational checklist, the following domains obtained the highest score, respectively: 1. Commitment to justice, 2. Commitment to confidentiality, 3. Improving the quality of care, 4. Commitment to honesty, 5. Respect for the patient, 6. Conscientiousness, 7. Educating the patient and 8. Respect for autonomy (Table 5).

Among the observed condition, the domain of discharge received the highest mean scores, (85.5 ± 4.67), and the domain of respiratory care received the lowest mean score (72 ± 2.89).

DISCUSSION

This study explored neonatal nurses' adherence to the nursing code of ethics in hospitals. The results of the nurses' self-report questionnaire showed the desirable performance of nurses regarding ethical codes. This finding is consistent with similar studies conducted by Beik Mirza et al. (2014), Ghoorchiani et al. (2012), Esmailpoor et al. (2015), and Maarefi et al. (2014) in Iran [13, 14, 16]. However, another study by Saber et al. reported 53.1% of nurses' performance in complying with ethical standards was undesirable [17].

The ethical care performance of neonatal nurses in each domain of the questionnaire showed that the domain of improving the quality of care ranked first in neonatal ethical performance. Hajinejad et al. (2012) pointed out in a consistent result of their research that most nurses consider mostly the physical aspects of care [18]. In contrast, in an inconsistent result, Saber et al. reported that the performance of 52% of nurses was unsatisfactory in the domain of improving the quality of care [17].

The results of the self-report questionnaire in this study showed that nurses, unfortunately, the least attention and focus on the principle of respect for autonomy as an important principle and foundation of ethical care. The results of the evaluation of the observational checklist of nurses' ethical care performance showed that the average score of the checklist was in the category of desirable performance. A review of the literature showed that in most similar studies, ethical practices were evaluated from the perspective of the service provider or the recipient (patient), or the patient's family members (REF). No study was found that evaluated ethical nursing performance from the perspective of an impartial professional outsider with appropriate tools.

Hence, in discussing this section, the views of all non-nurses as outsider observers have been considered, discussed, and compared in this study. As mentioned, the final ethical performance of nurses was in the desired range from the perspective of the observer. This result is consistent with the findings of studies by Abbasi et al. (2018), Maarefi et al. (2013), and Dehghani et al. (2013) [11, 19, 20] because in these studies, patients reported a desirable level of nurses' performance in complying with ethical standards.

Nevertheless, in a study by Beik Mirza et al, performance was reported at a relatively desirable level [14]. Moreover, in the studies by Momen Nasab et al. (2016), Mohajal Aghdam et al. (2013), and Ghoorchiani et al. (2012), the performance of nurses is at a relatively desirable level from the patient's point of view. However, Saber et al. reported an inconsistent result that 53.1% of the nurses' performance was undesirable [16, 21, 22]. In this regard, in the study by Beik Mirza et

al., the lowest averages obtained from the perspective of mothers as outsider observers, are related to the domains of respect for autonomy [14]. Indeed, the domain of respect for autonomy ranked last among the various domains of ethical care both in the present study and in the study by Beik Mirza et al. from the perspective of an outsider observer. In the study by Valizadeh et al [14], parents of premature neonates admitted to the intensive care unit received the least support in the subgroup of emotional support and self-confidence from nurses [23]. The results of other studies on mothers' satisfaction with the provision of care in pediatric wards showed that the least satisfaction was related to issues such as the nurse's rapport with parents and the provision of information while the highest satisfaction was related to clinical nursing services [24, 25]. A comparison of the results of the self-report questionnaire and the observational checklist showed that the average overall score of the self-report questionnaire was higher than the average score of the observational checklist. Yet, in the study by Beik Mirza et al., there was a significant difference between the results of nurses' self-reports and mothers' reports, so mothers reported less ethical performance than the nurses themselves [14]. Also, in the study by Khakhi et al [26], the optimal performance was 91.7% from nurses' perspectives and 48.3% from patients' perspectives.

In addition, the average score of the self-report questionnaire was higher than the observation checklist in 3 domains. At the same time, the average score of the self-report questionnaire was lower than the observational checklist in the domains of respect for autonomy and commitment to justice. In this regard, a review of the literature showed that in the study by Beik Mirza et al [14] despite significant differences between nurses' and mothers' perspectives, nurses agree with mothers in most weak and strong points of their performance concerning the observance of ethical criteria of the domains under study.

Also, observed situations showed the highest ethical performance in the domain of care related to discharge, nutrition, and patient education; and the least attention to ethical care in the domain of respiratory care (e.g., suction and oxygen therapy) and medication. In this regard, literature shows a conflicting result in the studies; for example, parents of children as outsider ethic observers have acknowledged that their needs and children's need are not a priority for nurses and that they come to children's bedside just to fulfill their technical duties and perform therapeutic orders [24, 27, 28]. Better performance in situations related to patient discharge, nutrition, and education, as well as lower scores in situations related to respiratory care and medication therapy, can be worrisome, especially as the results of demographic variables showed that most

neonatal patients have respiratory disease in the present study. This finding is inconsistent with a study by Saber et al (2015) that was conducted to determine nurses' ethical performance in phlebotomy and blood sampling and showed that 53.1% of nurses did not adhere to the ethical principles during phlebotomy and blood sampling [17]. Asghari et al. also reported poor ethical performance of nurses in the medication process [29]. The review of nurses' demographic variables showed that there was no significant relationship between the score of ethical performance reported by nurses and demographic variables and also passing the ethics course. Similar to the current study, a qualitative study by Dehghani et al. (2015) reported personal characteristics and a high level of education as factors influencing the ethical performance of nurses [30]. Also, a study by Aliyu et al. (2014) in Nigeria, reported education and work experience among the three factors affecting nurses' ethical performance [31]. Additionally, in the study by Elemam Hafez et al (2016), the researchers concluded that nurses' ethical knowledge scores were related to nurses' age, work experience, and nurses' place of work, but they were not related to nurses' characteristics [32]. Also, in the study by Zakaria et al. (2016), the results showed that there was a strong relationship between the amount of nurses' ethical knowledge and nurses' ethical care [33]. In the study by Namadi et al. (2019), the nursing ethics training program caused a significant difference in the field of ethical decisions between the control and intervention groups among nursing students [34].

Also, the results about neonatal demographic variables showed that the sex of the neonate, the presence or absence of the mother at the neonate's bedside, and the race of neonates (Iranian or non-Iranian) had no significant effect on the observed ethical performance of nurses. However, in a study by Kadivar et al. (2014), interaction with infant parents was reported as the most important ethical challenging situation by neonatal nurses [35]. In the study by Stranda and Sven, interaction with parents of infants has been proposed as a challenging situation in neonatal wards [36]. In the present study, neonates who had special conditions such as unknown parents, addicted mothers, or Covide-19, received significantly less ethical care than neonates without special conditions. Of course, there are probably several factors that affect this issue, and it seems that more comprehensive research is needed to determine all factors contributing to this issue to help with evidence-based planning to reduce this gap in healthcare.

CONCLUSION

Adherence to a code of ethics in neonatal wards is very important as neonates are unable to communicate their needs verbally. This study showed that the adherence of

nurses to the code of ethics was in desirable condition, both in self-report and observation, however, there are still challenges to ethical performance in neonatal nursing, despite the educational program provided.

An important finding in this study was a discrepancy between what nurses think about their adherence to the code of ethics and what is observed in their performance in practice. More in-depth studies are required to explore different aspects of the issue and the need for training neonatal nurses. In the ranking of domains, the domain of respect for autonomy also needs more serious attention, accurate determination of cases for nurses, and continuous monitoring of performance quality. The impact of neonates' specific conditions on nurses' ethical performance is also an important point that requires more research.

One of the limitations of the research is that nurses do not have enough information about the areas related to the codes of ethics in the neonatal intensive care unit.

ETHICAL CONSIDERATIONS

Ethical clearances were obtained for the Ethics Committee of Shahid Beheshti University of Medical Sciences for this study (IR.SBMU.PHNM. 1399.073).

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FUNDING

The authors received no financial support for the research, authorship, or publication of this article.

AUTHORS' CONTRIBUTIONS

Conceptualization: AE. Data curation: MMSH. Formal analysis MN. Methodology: FSh. Project administration: MVa. Writing-original draft: FSh. Writing-review and editing: AM.

ACKNOWLEDGMENTS

This article was extracted from the thesis written by the first author derived from her MSc thesis in NICU nursing approved by the Research Vice-chancellor of Shahid Beheshti University of Medical Sciences. The researchers are grateful to nurses of the neonatal wards of the studied hospitals.

CONFLICTING INTERESTS

The Authors declare that there is no conflict of interest.

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