Frontiers of Nursing • 10(2) • 2023
DOI: 10.2478/FON-2023-0019

sciendo

Frontiers of **Nursing**

Open visitation in the NICU: nurses' perspectives on barriers and facilitators†

Original Article

Fatemeh Ghorbani*

School of Nursing and Midwifery, Pediatric Health Research Center, Tabriz University of Medical Sciences, Tabriz 5138947977, Iran

Received: 13 September 2022; Accepted: 15 December 2022; Published: 20 June 2023

Abstract: **Objective:** This study aimed to investigate the nurses' perspectives on open family visitation and its barriers and facilitators in neonatal intensive care units (NICUs).

Methods: This is a descriptive, cross-sectional study. A total of 113 nurses employed in 3 main NICUs of Tabriz participated in the study through the census sampling method. Nurses' perspectives on open visitation and its facilitators and barriers were assessed and analyzed using the Beliefs and Attitudes toward Visitation in NICU Questionnaire (BAVNIQ) and descriptive and analytical statistics, respectively.

Results: Approximately 74% of the nurses who participating in the study had a moderate perspective on open visitation. From the nurses' viewpoint, "Parents' low awareness of sensitivity and hygienic principles of the NICU" was the first (90.3%) barrier, and the 2 factors, namely, "physical structure of the ward/lack of sufficient space" and "far distance between family's residence and the hospital/having another child," were the second (86.8%) barrier with an equal percentage. Among the facilitating factors, "Supporting employed parents during the neonate's hospitalization" and "providing facilities for family accommodation in the hospital" were the first (82.3%) and the second (79.6%) facilitators, respectively, for open visitation.

Conclusions: The majority of NICU nurses had a moderate perspective on the family open visitation. This reluctance seems to be originated mainly from the factors inhibiting open visitation, making its implementation challenging for nurses. The perspective of the frontline staff in caring for vulnerable infants on facilitators and barriers to open visitation may help policymakers, managers, and relevant officials in decision-making and implementing new visiting policies in the NICUs.

Keywords: *barriers • facilitators • NICU • nurse • open visitation*

© Shanxi Medical Periodical Press Co., Ltd.

1. Introduction

In 2012, in the United States, 77.9 infants per 1000 live births were admitted to the neonatal intensive care unit (NICU), indicating an increase of approximately 23% compared to that in 2007.[1] Numerous studies show that parents experience high levels of distress during their baby's hospitalization.[2–4] The baby's hospitalization

†This project was supported by Pediatric Health Research Center, Tabriz University of Medical Sciences (Grant number: IR.TBZMED.REC.1398.585).

How to cite this article: Ghorbani F. Open visitation in the NICU: nurses' perspectives on barriers and facilitators. *Front Nurs*. 2023;2:183–192.

**Corresponding author.*
E-mail: f.ghorbani2006@gmail.com (F. Ghorbani).

Open Access. © 2023 Ghorbani, published by Sciendo. This work is licensed under the Creative Commons Attribution 4.0 License.

in the NICU creates specific obstacles in the process of mother–infant attachment.[5] Besides, the separation between mother and baby has permanent effects on the baby's nervous development, self-regulation, and emotional and behavioral health.[6] Therefore, unrestricted parental presence in the NICUs is essential for infants and parents.[7] Today, in developed countries, according to the new NICU guidelines, parents are the main partners of the care team, and their 24-h presence is welcomed,[8] since parents' unrestricted presence in the NICU provides the basis for infant–parent attachment[9] and positively affects the baby's physical, cognitive, and physiological development.[10] Parental involvement in infant care also leads to an earlier discharge of the infant from the hospital,[11] reduced readmission rates,[12] and increased skills and ability to interpret infant behavior.[9] In the study by Altimier, professional staff found that the family had the most significant impact on the infant's health and well-being.[13] The open visitation policy imposes no restrictions on the time and length of visits and/or the number of visitors.[14]

In most studies, strict guidelines on hospital visiting hours, such as interfering factors in infant–parent attachment, have been established.[8,15] These strict rules do not indeed respect the individual needs of families and deprive them of the opportunity to cooperate and participate fully in infant care.[8] Parents reported that when the hospital did not provide a family-friendly environment, they were less likely to be able to visit or care for their baby.[16,17] Cunha's study conducted in Brazil found that visitors, including parents and family members, expected more guidance and information from the staff about their baby's clinical conditions. They also believed that to implement the neonatal care program, more integration of the treatment team members with them was necessary.[18]

In addition to the staff's views, an essential component in the success of open visitation policies is the awareness of the causes and factors facilitating or inhibiting open visitation.[19] Nurses in the NICU are able to apply power; however, they can adjust the unit culture if they are aware of factors that facilitate or impede parental involvement and participation.[20] In general, both system- and visitor-related factors can influence the implementation of an open visitation policy.[19] In various studies, from the perspective of nurses, structural factors such as insufficient space and nurses' inadequate time prevented parents' presence and involvement,[20,21] and linguistic/cultural factors also interfered with parents' emotional support.[22] In addition, family-related factors, such as transportation problems due to the long distance from the hospital and other life responsibilities, are among the primary barriers to open visitation.[23] From the parents' point of view, there were also some environmental factors, including dissimilarity of the NICU to the home environment, the type of equipment used such as incubators, high noise levels,[16] and staff interaction with them, that could affect the number of visits their babies receive.[23] Therefore, the management of a medical center can facilitate open visitation by creating a private environment for family accommodation, modifying in-hospital rules, and providing a counselor in the center.[19]

A review by Khaleghparast et al.[24] at Iran University showed that most of the studies conducted in the field of visiting hours and the attitude of treatment team members, particularly nurses, were related to American and European countries, and most of the studies carried out in this field in Iran were on adults. Therefore, considering the significance of infant–parent attachment, the need for the unrestricted presence of parents in NICUs, and the limited number of studies conducted in Iran, this study was conducted in the educational and medical centers of Tabriz to investigate the NICU nurses' perspectives on open visitation and its facilitators and barriers.

2. Methods

2.1. Study design

This descriptive, cross-sectional study was conducted from October 20th to December 10th, 2019, after obtaining the ethics code (IR.TBZMED.REC.1398.585) from Tabriz University of Medical Sciences. The research setting included the NICUs of 3 educational and medical centers of Al-Zahra, Children, and Taleghani, 3 main referral centers for premature infants in northwest Iran. Due to the limited nature of the research population, all nurses working in the NICUs of the 3 hospitals who met the inclusion criteria and signed the informed consent form were included in the study using the census method. The inclusion criteria were being employed in the NICU, having at least 6 months of work experience, and willingness to participate in the study (by signing the informed consent). The exclusion criteria included failing to answer >20% of the questionnaire.

2.2. Data collection

After the initial and face-to-face meeting with the head nurses of the 3 hospitals, the researcher explained the objectives of the project and the implementation method. Afterward, according to the number of nurses in each ward, the questionnaires were handed over to the head nurses to be delivered to the ward staff. In order to encourage the nurses to complete the questionnaire accurately and to appreciate the time spent completing

it, a small gift was prepared and presented to the nurses participating in the study when the questionnaire was delivered. To ensure the quality of the given answers, the questionnaire statements were placed randomly to avoid "response elicitation" and possible perceptual errors such as "stereotype errors," "providing conservative answers," and "distribution error" (high tendency to agree, disagree, or moderate). The participants were given enough time to complete the questionnaire; they had 72 h to complete and deliver it to the head nurse of the NICU. Moreover, a small gift was presented to them in appreciation for completing the questionnaire.

2.3. Instrument

The data collection tool consisted of 2 sections. The first section was related to the demographic information of the participating nurses, including gender, age, level of education, work experience in NICU, employment status, type of work shift, marital status, and the number of children. The second section was "The Beliefs and Attitudes toward Visitation in NICU Questionnaire" (BAVNIQ). This questionnaire was prepared by modifying the questionnaire "Attitudes towards visitation in adult intensive care units" by Professor Philip Moons, used in 2007 in Berti's study.[25] Therefore, after correspondence and obtaining permission from him, the questionnaire was modified and adapted for NICUs by a group of professors and neonatologists. The modified questionnaire consisted of 2 sections: nurses' attitudes toward open visitation and effective facilitators and barriers to implementing it. The questionnaire's first and second sections consisted of 52 and 12 expressions, respectively. The items were rated according to the 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). In the first section of the questionnaire, items were scored from 0 to 4. A score of 4 and 0 was assigned to the "completely agree" and "completely disagree" options in the positive expressions, respectively. The negative expressions were scored conversely. Thus, a score of 208 indicated the most agreeing view, and a score of zero indicated the most disagreeing view of open visitation. In evaluating the calculated scores, a score of 70 and below was interpreted as "weak," a score of 70–140 as "moderate," and a score above 140 as "good" views. The second section of the questionnaire was likewise rated based on the 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree), and the level of nurses' agreement and disagreement on the factors inhibiting or facilitating open visitation was measured using inferential statistics (frequency, percentage, and cumulative percentage).

2.4. Validity and reliability of the instrument

For the validity of the instrument, first, the main questionnaire was translated into Persian by the translator. Afterward, to determine the content validity and adapt it to the field of neonatal nursing, the questionnaire was provided to 7 experts (including 2 neonatologists, 2 NICU head nurses, and 3 faculty members of the Department of Pediatric Nursing) and their comments on whether to correct or change some items were obtained. After collecting the submitted suggestions and applying the necessary corrections, 10 faculty members of the

Variable	Values N (%)
Marital status	
Single	23 (20.4)
Married	90 (79.6)
Number of children	
No child	45 (39.8)
One child	32 (28.3)
Two children	34 (30.0)
>2 children	1 (0.9)
Level of education	
BS	105 (92.9)
MSc	8 (7.1)
Work experience (years)	
1–5	29 (25.7)
5–10	35 (3.0)
10–15	16 (14.2)
15–20	22 (19.5)
>20	11 (9.7)
Employment status	
Permanent employment	52 (46.0)
Temporary employment	22 (19.5)
Conventional employment	5 (4.4)
Part-time employment	17 (15.0)
Training course	17 (15.0)
Work Shift Types	
Rotating shifts (morning, evening, and night shifts)	100 (88.5)
Fixed shifts (for example only morning shift)	13 (11.5)

Table 1. Demographic characteristics of the participating nurses.

School of Nursing and Midwifery were provided with the modified questionnaire to confirm the face and content validity; Content Validity Ratio (CVR) = 0.93 and Content Validity Index (CVI) = 0.96 were obtained for its items. To evaluate the reliability of the questionnaire, the questionnaires were handed over to 30 nurses at the beginning of the study. The obtained data were analyzed, and a Cronbach's alpha coefficient of 0.8 was obtained, confirming the reliability of the questionnaire. In our study, an effective response rate of about 10% was obtained by dividing the received responses (113 complete questionnaires) by the total number of nurses invited to participate in the study (122 nurses), which can be justified considering the limited number of eligible samples despite the use of the census sampling method.

Demographic characteristics	Nurses' perspectives	
	r	*P* value
Age	–0.004	0.96
Marital status	–0.117	0.21
Child number	0.006	0.95
Educational level	0.02	0.83
Work experience	0.027	0.78
Employment status	–0.007	0.94
Work shifts	–0.181	0.05

Table 2. Correlation between nurses' demographic characteristics and their perspectives on Open Visiting Policy (OVP).

2.5. Statistical analysis

After collection, the data were entered into SPSS software version 19 and analyzed using descriptive statistics (percentage, frequency, and mean) and the Pearson correlation test for predicting variables influential on nurses' perspectives. The level of statistical significance in all tests was considered <0.05.

3. Results

Of the 122 qualified nurses, 119 participated in the study. Three of them were on vacation at the time

Items	Scores (%)				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Barriers					
I think these factors prohibit the family's open visitation:					
1. Hospitals' restrictive policies	23.9	38.9	22.1	6.2	2.7
2. Emergency activities due to the frequent admission of new neonates from the delivery/operating room	29.2	52.2	15	0.9	0
3. Parents' low awareness about sensitivity and hygienic principles of the NICU	41.6	48.7	4.4	1.8	0
4.The physical structure of the ward and insufficient space	46	40.7	3.5	6.2	0
5.Shortage of materials such as gowns, mask, etc.	29.2	44.2	8.8	13.3	0.9
6.Long distance from the family's residence and having another child at home	31.9	54.9	7.1	1.8	0
Facilitators					
I think these factors facilitate the family's open visitation:					
1. Hospital directors' commitment to the implementation of the family-centered care and NIDCAP for neonates	31.9	40.7	15.9	4.4	0
2. Using divider curtains between neonates' warmers and ensuring the family's privacy	38.1	40.7	11.5	4.4	0.9
3. Allocation of a specific nurse for continuous family education and accompanying them during shifts	37.2	37.2	10.6	8	2.7
4. Providing residency facilities for the family	27.4	52.2	11.5	2.7	2.7
5. Supporting employed parents during the neonate's hospitalization	33.6	48.7	8.8	2.7	1.8
6. Personnel's good communication with the family	30.1	48.7	8.8	5.3	0.9

Note: NICU, neonatal intensive care unit; NIDCAP, Newborn Individualized Developmental Care and Assessment Program.

Table 3. Nurses' perspectives toward barriers and facilitators of open visitation in the NICU.

Barriers (%)			Facilitators (%)		
Item	Agreement	Disagreement	Item	Agreement	Disagreement
1	62.8	10.9	1	72.6	4.4
2	81.4	0.9	2	78.8	4.4
3	90.3	1.8	3	74.4	10.7
4	86.7	6.2	4	79.6	5.4
5	73.4	14.2	5	82.3	4.5
6	86.7	1.8	6	78.8	6.2

Note: the cumulative percentage is the sum of the "agree" and "strongly agree" responses to the barriers and facilitators of open visitation.

Table 4. Cumulative percentage of agreement/disagreement with the barriers and facilitators of open visitation.

of the study. Six questionnaires were excluded due to >20% of unanswered questions; ultimately, 113 questionnaires were analyzed. The mean age of the participating nurses was 34.36 ± 6.83. The youngest and the oldest nurses were 22 years and 50 years old, respectively. The majority of the participating nurses (90, 79.6%) were married. The employment status of 52(46%) nurses was permanent, and 35(31%) had 5–10 years of work experience in the NICU. The work shift of 88% of the nurses was rotating shift. Other demographic characteristics of the participating nurses are presented in Table 1.

3.1. Perspective of nurses on open visitation

The mean and standard deviation of the score of nurses' perspectives on open visitation in the NICU was 93.04 ± 23.54, with the highest and the lowest scores being 158 and 38, respectively. In general, the attitude of 84 nurses (74.33%) toward open visitation was at a moderate level (total score 70–140). The opinion of 24 nurses (21.23%) was at the weak level (<70); however, 5 nurses' opinion (4.42%) was at the good level (>140). The Pearson test results showed no significant relationship between nurses' demographic characteristics and their perspectives on open visitation (Table 2).

3.2. Barriers and facilitators of open visitation

The percentage of positive and negative answers given to the expressions related to the barriers and facilitators of open visitation are provided separately in Table 3. The cumulative percentage of the answers of "completely agree" and "agree" to the barriers and facilitators is shown in Table 4.

The results of Table 4 show that from the participating nurses' point of view, the first barrier to open visitation was "parents' limited awareness of the sensitivity of the intensive care unit (ICU) for newborns and its hygiene principles" (90.3%). "Physical structure of the ward/lack of sufficient space" and " long distance from the hospital/having another child" with an equal percentage of 86.8% were determined as the second factor impeding open visitation, by the nurses.

Among the facilitators of open visitation, "supporting employed parents during infant hospitalization" was the first and most important factor from the nurses' point of view (82.3%), and "providing facilities for the family to stay in the hospital" with a percentage of (79.6%) was the second facilitating factor. The 2 factors, "protection of family privacy in the ward" and "good communication between personnel and family," with an equal percentage of 78.8%, were ranked third as facilitators.

4. Discussion

4.1. Principle findings

This study investigated the NICUs nurses' perspectives on open visitation policy and the barriers and facilitators of its implementation. The results showed that more than half of the nurses had a moderate view of open visitation in the NICU. From the nurses' point of view, the first barrier to open visitation was "parents' low awareness of the NICU sensitivity and hygiene principles" (90.3%). The 2 factors of "unit structure and insufficient space" and "long distance of the family's residence from the hospital and having another child" with an equal percentage (86.8%) ranked second among the factors interfering with open visitation. Regarding the facilitators of open visitation, the nurses participating in our study believed that "supporting employed parents during the infant's hospitalization" (82.3%) and "providing facilities for family accommodation in the hospital" (79.6%) were among the most important factors.

4.2. Comparisons with other studies and implications

Despite believing in the effectiveness of open visitation on patients and families, health professionals have a negative attitude toward it.[26] According to them, patients and their families greatly benefit from open visitation; however, it increases nurses' physical and physiological burden and interferes with their duties.[27] Other studies have shown that although nurses have a positive attitude toward visitation,[14] they fail to broadly agree with open visitation since they believe that the policy disrupts direct care and planning for nursing care and reduces care quality.[28–30] However, as Liu and Klawetter's systematic reviews have shown, due to physiological differences between adults and infants, family presence, particularly maternal involvement in infant care, is safe for infants and is accompanied by positive health outcomes,[31] such as neonatal weight gain, reduction in the infant's energy consumption,[32] hospital stay length, and the number of readmissions.[12] Likewise, in the present study, 80% of the nurses admitted the effectiveness of family visits on the infant, and the general view of open visitation was expected to be above average. However, the barriers proposed by nurses that interfered with their care activities and inhibited the implementation of open visitation in the studied units seemed to influence their views.

The first barrier to open visitation from the nurses' point of view indicated that the nurses were highly concerned about the unrestricted family presence due to sensitivity to infection control in the NICU and low family awareness of the need for adherence to the principles of infection control. In Boztepe's study[33], from the perspective of Turkish nurses, parents' level of education and their cultural differences were mentioned as important factors in family participation that led to challenges for nurses and other health personnel. However, a study by Kidszun et al.[34] in 2019 showed that following family-centered care and open family visitation, as well as the presence of infant siblings in the NICU, viral infections affected <3% of infants. The results of the study by Horikoshi in Tokyo were in line with it, indicating that sibling visitation in the NICU has no significant relationship with the incidence of viral infections in hospitalized infants.[35]

Nurses' other concerns about open visitation were due to some issues, including patients' privacy and unit management problems.[36] In some studies, nurses were also concerned about the probability of reducing their decision-making power through family involvement.[22] It should be taken into account that not all visitors meet the environmental conditions and respect the privacy of other parents. Probably the reason for nurses' opposition to open visitation is, in most cases, their distrust of the visitors and the fear of the unit becoming uncontrollable.[36]

Regarding the unit structure and space restriction, the study by Ghorbani et al.[37] in 2017 showed that the lack of sufficient space and necessary facilities for parents to reside in the hospital prevented the continuous presence of parents and the implementation of family-centered care in the NICUs. Similarly, in the study by Foladi, from the perspective of nurses and physicians, environmental and structural factors in the NICU were mentioned as the most significant barriers to the implementation of developmental care and the continuous presence of parents.[38] In other studies, nurses believed there were numerous barriers to open visitation, such as insufficient space and facilities in the unit[21,22,36] and inadequate time available for communication between the nurse and parents.[21] In developed countries, where the problems related to the structure and space of the hospital are usually inconsiderable compared to developing countries, parent-related factors, such as "long distance between residence and the hospital" and "caring for another child at home," have priority and are among the primary barriers to open visitation.[23]

Concerning the first facilitator of open visitation from the nurses' point of view, it should be noted that in the socio-cultural context of Iran, the father is responsible for meeting the family's financial needs; as a result, they are customarily employed. Since the visit times are typically scheduled in the afternoon, they coincide with fathers' work hours; consequently, they fail to visit their babies on consecutive days. As in the qualitative study by Valizadeh et al.[39] restricting parents', especially fathers', visit times to specific hours often interferes with their working hours and prevents them from visiting the baby and participating in care. In other words, restricting parents' entrance to the NICU is one of the factors interfering with the relationship between parents and infants.[8,15] This is particularly true for fathers who, due to issues such as financial problems and working hours, are less likely to visit their babies hospitalized in the NICU unless the fathers' circumstances are understood and they receive supportive behavior.[40] Therefore, it can be concluded that in order to implement humane care, families should be encouraged to be present and participate in the ICUs. To this end, it is necessary to alter the hospital structure and adjust its policies to facilitate the 24-h open-door policy.[41] From the perspective of the nurses participating in the present study, providing facilities for the family to reside in the hospital is as important as supporting the employed parents, which facilitates open parent visits. The results of Khaleghparast's study showed that providing a private environment for the

family and the presence of a counselor could be among the managerial facilitators of open visitation.[19]

4.3. Study strengths and limitations

This study was conducted in 3 important NICUs, the main referral centers for sick infants in northwest Iran. Considering that nurses are at the forefront of caring for infants and communicating with families, their point of view reflected the main barriers and necessary facilities for implementing the open visitation policy in the NICUs. The limitation of our study was that the factors preventing and facilitating open visitation were examined only from the perspective of the nurses working in the NICUs. It is suggested that in further studies, the attitude of families in this field be studied.

5. Conclusions

Our study showed that despite believing in the significance of unrestricted parental presence in infant recovery, nurses in the NICUs do not have a positive attitude toward the open visitation policy. On investigating the barriers and facilitators of open visitation from their point of view, it can be observed that this reluctance is mainly due to obstacles such as "parents' low awareness of the sensitivity and hygiene principles of the NICU," "physical structure and lack of space," and "long distance of family's residence from the hospital and having another child at home." In contrast, "supporting employed parents during the infant's hospitalization," "providing accommodation facilities, and protecting family privacy in the unit," and "good communication between personnel and family" were the most important factors facilitating open visitation from the nurses' point of view. Taking into account the results obtained from this study and the perspective of the frontline staff in caring for vulnerable infants on facilitators and barriers of open visitation may help policymakers, managers, and relevant officials in decision-making and implementing new policies in the NICUs.

Acknowledgment

The author expresses her sincere gratitude to the head nurse and all NICU nurses for their kind cooperation.

Ethical approval

The study protocol was approved by the Ethics Committee of the Tabriz University of Medical Sciences (IRB approval number: IR.TBZMED.REC.1398.585).

Conflicts of interest

There is no conflicts of interest.

References

1. Harrison W, Goodman D. Epidemiologic trends in neonatal intensive care, 2007–2012. *JAMA Pediatr*. 2015;169:855–862.
2. Brandon DH, Tully KP, Silva SG, et al. Emotional responses of mothers of late-preterm and term infants. *J Obstet Gynecol Neonatal Nurs.* 2011;40:719–731.
3. Lefkowitz DS, Baxt C, Evans JR. Prevalence and correlates of posttraumatic stress and postpartum depression in parents of infants in the Neonatal Intensive Care Unit (NICU). *J Clin Psychol Med Settings*. 2010;17:230–237.
4. Mackley AB, Locke RG, Spear ML, Joseph R. Forgotten parent: NICU paternal emotional response. *Adv Neonatal Care*. 2010;10:200–203.
5. Dunham MM, Marin T. NICU maternal-infant bonding: virtual visitation as a bonding enhancement tool. *J Perinat Neonatal Nurs*. 2020;34: 171–177.
6. Head Zauche L, Zauche MS, Dunlop AL, Williams BL. Predictors of parental presence in the neonatal intensive care unit. *Adv Neonatal Care*. 2020;20:251–259.
7. Spreen AE, Schuurmans MJ. Visiting policies in the adult intensive care units: a complete survey of Dutch ICUs. *Intensive Crit Care Nurs.* 2011;27:27–30.
8. Griffin T, Celenza J. *Family-centered Care for the Newborn: The Delivery Room and Beyond.* 1st ed. Chicago: Springer Publishing Company; 2014.
9. Saxton SN, Walker BL, Dukhovny D. Parents matter: examination of family presence in the neonatal intensive care unit. *Am J Perinatol*. 2021;38:1023–1030.
10. Craig JW, Glick C, Phillips R, Hall SL, Smith J, Browne J. Recommendations for involving the family in developmental care of the NICU baby. *J Perinatol*. 2015;35:S5–S8.
11. Ortenstrand A, Westrup B, Brostrom EB, et al. The Stockholm neonatal family centered care study: effects on length of stay and infant morbidity. *Pediatrics*. 2010;125:e278–e285.
12. Aliabadi T, Bastani F, Haghani H. Effect of mothers' participation in preterm infants' care in NICU on readmission rates. *J Hayat.* 2011;17:71–77 (in Persian).

13. Altimier L, Phillips RM. The neonatal integrative developmental care model: seven neuroprotective core measures for family-centered developmental care. *Newborn Infant Nurs Rev*. 2013;13:9–22.
14. Jabeen F. Open visitation in intensive care unit-nurses perspective: a quantitative study. *Health Syst Policy Res*. 2018;5:69.
15. Asai H. Predictors of nurses' family-centered care practices in the neonatal intensive care unit. *Japan J Nurs Sci*. 2011;8:57–65.
16. Feeley N, Waitzer E, Sherrard K, Boisvert L, Zelkowitz P. Fathers' perceptions of the barriers and facilitators to their involvement with their newborn hospitalised in the neonatal intensive care unit. *J Clin Nurs*. 2013;22:521–530.
17. Wigert H, Berg M, Hellström AL. Parental presence when their child is in neonatal intensive care. *Scand J Caring Sci*. 2010;24:139–146.
18. Cunha ALC, Souza NL, Rêgo RMAR, Santos ACBCP, Oliveira COP, Miranda JMA. Open visitation in a neonatal intensive care unit: visitors' perception. *Rev Rene*. 2014;15:45–51.
19. Khaleghparast S, Joolaee S, Maleki M, Peyrovi H, Ghanbari B, Bahrani N. Visiting hour's policies in Intensive Care Units: exploring participants' views. *Int J Med Res Health Sci*. 2016;5:322–328.
20. Brødsgaard A, Pedersen JT, Larsen P, Weis J. Parents' and nurses' experiences of partnership in neonatal intensive care units: a qualitative review and meta-synthesis. *J Clin Nurs.* 2019;28:3117–3139.
21. Turner M, Chur-Hansen A, Winefield H. The neonatal nurses' view of their role in emotional support of parents and its complexities. *J Clin Nurs*. 2014;23:3156–3165.
22. Mirlashari J, Sadeghi T, Sagheb S, Khanmohammadzadeh T. Nurses' and physicians' perspective about barriers to implement family centered care in neonatal intensive care units. *Iran J Neonatol*. 2015;28:140–150 (in Persian).
23. Forrest LS. *Assessing Barriers and Facilitators to Parental Visitation and Parenting Activities during Infant Hospitalization in a Neonatal Intensive Care Unit and a Special Care Nursery*. East Carolina University; 2016.
24. Khaleghparast S, Joolaee S, Ghanbari B, Maleki M, Peyrovi H, Bahrani N. A review of visiting policies in intensive care units. *Glob J Health Sci*. 2015;8:267–276.
25. Berti D, Ferdinande P, Moons P. Beliefs and attitudes of intensive care nurses toward visits and open visiting policy. *Intensive Care Med*. 2007;33:1060–1065.
26. Alonso-Rodríguez A, Martínez-Villamea S, Sánchez-Vallejo A, Gallego-Lorenzo J, Fernández-Menéndez M. Perspectives of intensive care nurses on open visits in an ICU. *Enferm Intensiva (Engl Ed)*. 2021;32:62–72.
27. Athanasiou A, Papathanassoglou ED, Patiraki E, McCarthy MS, Giannakopoulou M. Family visitation in Greek intensive care units: nurses' perspective. *Am J Crit Care*. 2014;23:326–333.
28. Biancofiore G, Bindi LM, Barsotti E, Menichini S, Baldini S. Open intensive care units: a regional survey about the beliefs and attitudes of healthcare professionals. *Minerva Anestesiol*. 2010;76:93–99.
29. Alizadeh R, Pourshaikhian M, Emami-Sigaroodi A, Kazemnejad-Leili E. Visiting in intensive care units and nurses' beliefs. *Iran J Nurs Res*. 2015;10: 11–21 (in Persian).
30. Mahdavi SM, Asadi AA, Zolfaghari M, Haghani H. Nurses viewpoint about visiting in coronary care unit. *J Cardiovasc Nurs*. 2014;2:16–24 (in Persian).
31. Liu TT, Lei MJ, Li YF, Liu YQ, Meng LN, Jin CD. Effects of parental involvement in infant care in neonatal intensive care units: a meta-analysis. *Front Nurs*. 2018;5:207–215.
32. Klawetter S, Greenfield JC, Speer SR, Brown K, Hwang SS. An integrative review: maternal engagement in the neonatal intensive care unit and health outcomes for U.S.-born preterm infants and their parents. *AIMS Public Health*. 2019;6:160–183.
33. Boztepe H. Pediatric nurse views regarding parental presence during a child's painful procedures. *Agri J Turk Soc Algol*. 2012;24:171–179 (in Turkish).
34. Kidszun A, Neurohr A, Gröndahl B, Tippmann S, Schreiner D, Winter J, et al. Low frequency of viral respiratory tract infections during family-centered neonatal intensive care: results of a prospective surveillance study. *Front Pediatr*. 2020;8:606262.
35. Horikoshi Y, Okazaki K, Miyokawa S, Kinoshita K, Higuchi H, Suwa J, et al. Sibling visits and viral infection in the neonatal intensive care unit. *Pediatr Int*. 2018;60:153–156.
36. Shojaeimotlagh V, Valizadeh S, Hasankhani H, Feizi A, Azizi A. Studying the obstacles to establishing a system of free visiting in the ICU of subordinating educational hospitals of Iranian medical sciences university. *Int J Med Res Health Sci*. 2016;5:429–435.
37. Ghorbani F, Mirlashari J, Navab E, Higman W, Valizadeh S. Experiences of the Iranian neonatal intensive care unit nurses in implementing family-centered care: walking on an insecure foundation. *Iran J Neonatol*. 2018;9:42–49.

38. Foladi N, A S Farahani, Nourian M, et al. Barriers to the implementation of “newborn individualized developmental care and assessment program” from the perspectives of nurses and physicians. *Iran J Neonatol*. 2020;11:14–20.
39. Valizadeh S, Mirlashari J, Navab E, Higman W, Ghorbani F. Fathers: The lost ring in the chain of family-centered care: a phenomenological study in neonatal intensive care units of Iran. *Adv Neonatal Care*. 2018;18:E3–E11.
40. Mahon P, Albersheim S, Holsti L. The fathers’ support scale: Neonatal Intensive Care Unit (FSS: NICU): development and initial content validation. *J Neonatal Nurs*. 2015;21:63–71.
41. Gómez-Cantarino S, García-Valdivieso I, Dios-Aguado M, Yáñez-Araque B, Gallego BM, Moncunill-Martínez E. Nursing perspective of the humanized care of the neonate and family: a systematic review. *Children (Basel)*. 2021; 8:35.