



## Challenges of Inter professional Collaboration in Iranian NICUs (Neonatal Intensive care Units): An ethnographic study

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### ABSTRACT

Having Inter professional perspective is very important in healthcare programs. Healthcare team members face different challenges in complex systems such as neonatal intensive care unit (NICU). Inter professional collaboration is a way of dealing with challenges in the process of practicing and improving the care. The aim of this study is to explore the challenges of inter professional collaboration which can be observed by the healthcare providers in the neonatal intensive care unit in Isfahan. This was a focused ethnographic study conducted in two neonatal intensive care units in Isfahan (Shahid Beheshti and Al-Zahra hospitals). The data was collected through a 14-month period from November 2012 to January 2014. Observations and interviews were used for data collection and content analysis was used to explore the data. Three main challenges were found in this study from the data analysis. They were: "organization challenges", "environment challenges" and "being honest in crisis". This study investigates the challenges of inter professional collaboration among healthcare providers in NICUs in Iran. In this study an ethnographic approach focused on healthcare provider's interactions in every day was used in the NICU environment. The results of this study can help us to create new inter professional collaboration cultures in different wards of hospitals particularly NICUs.

**Keywords:** inter professional, collaboration, culture, Challenge, NICU, Iran

### INTRODUCTION

Having Inter professional perspective is very important in healthcare programs [1]. Inter professional Collaboration includes open communication, respect to different opinions and the ability to make decisions and solve problems together among healthcare providers [2]. Now days, an appropriate opportunity for presence of families in neonatal intensive care unit (NICU) is provided to collaborate in taking care of their infants. Results of studies have shown that cares such as Kangaroo mother care (KMC) along with healthcare providers care's, could lead to reducing of mortality in NICU [3,4]. Another care related to collaboration between families and healthcare providers are developmental cares such as "Newborn Individualized Developmental Care and Assessment Program" (NIDCAP). This program provides care for mental health and future growth of infants [5]. It is necessary to pay attention to the concept of inter professional collaboration in NICU. So healthcare providers should have collaborative skills in addition of professional knowledge for having effective collaboration [6] Healthcare team members face different challenges in complex systems such as neonatal intensive care unit (NICU). There are many critical situations in NICU that need inter professional collaboration and collaborative skills [7, 8]. Inter professional collaboration is a way of dealing with challenges in the process of practicing and improving the care [9]. There are some differences in biological, psychological and spiritual perspectives of healthcare providers. These differences can create challenges for healthcare providers to collaborate. Also they effect the ways in which they speak and interact to each other. Furthermore, culture consists of beliefs, norms and attitudes of team members which they can share with each other [10, 11]. In the process of collaborative care, the professional knowledge and expertise in practice of

healthcare providers will be combined to achieve comprehensive care and better outcomes. This combination is originated from different perspectives of healthcare providers. As a result, inter professional collaboration faces many challenges in practice [12]. Therefore, better recognition of barriers of inter professional collaboration culture in the NICU environment by the healthcare providers can help to create an effective collaboration among them and improve the quality of care [10, 13, 14]. The purpose of this study is to explore the challenges of inter professional collaboration that can be observed by the healthcare providers in NICUs in Iran.

## MATERIALS AND METHODS

This was a focused ethnographic study conducted in two neonatal intensive care units in Isfahan (shahid Beheshti and Al-Zahra hospitals). The data was collected through a 14-month period from November 2012 to January 2014. The purpose of this ethnographic research is to find out the challenges of collaboration between healthcare providers in the NICU. Observations and interviews were used for data collection. At first, Observations were carried out, then based on presented question during observation, interview was scheduled. Observations were carried out with the participation of the researcher in ward rounds, meetings, and different activities of healthcare providers in the NICU. The first researcher was a participant observer; she was present during the three shifts over a 24-hour period in NICU, post NICU, tea room, corridors and mother's room. Access to the NICUs was facilitated by the head nurse who was a specialist nurse and a physician in the health team. Participants in the key informant interviews were chosen based on observations. 34 in-depth interviews were conducted with different healthcare providers as key informants. The participants included 12 nurses, 2 head nurses, 3 physicians (attending), 2 secretaries, 10 mothers, 3 senior medical specialists (residents) and 2 post graduated nursing and midwifery students. A digital voice recorder was used to record interviews. The study was based on two NICUs in two major teaching hospitals in Isfahan, Iran. All participants were informed about the study both verbally and in writing. Researcher initiated interviews with general questions about the experiences of collaboration such as: "What is inter professional collaboration in your opinion?" And "what's your experiences about inter professional collaboration?" after obtaining informed consent from them. Manifest, latent and content analysis were used to explore components of inter professional collaboration challenges and challenges themes emerged from it. Qualitative data analysis and data collection were conducted simultaneously. We used a purposive sampling technique for this study. In purposive sampling method researcher has a conscious selection from subjects and elements of study context [15]. Content analysis used in this study was based on the methods described by Graneheim and Lundman (2004). Manifest and latent analyses were used; in manifest content analysis the codes and subcategories are very close to the text and it was used to describe obvious and visible perspectives. Furthermore, latent content analysis was used for interpretation of the under lying meanings of the text [16]. The analysis of data was started by reading the meaning units several times and comparing them to the context, and then the codes were grouped to subcategories, and categories. We attended weekly sessions to compare the codes and resolve disagreements. During content analysis 350 meaning units, 240 codes, 8 subthemes and 3 themes were obtained. Several sessions were held for reflective discussion between the researchers to ensure the objectivity, impartiality and maintaining an inspection trial. Reflectivity included consideration of emic(insider) and etic(outsider) issues [17]. In order to check for dependability, we asked an outsider researcher familiar with both clinical environments and qualitative research to conduct observations and two other external researchers to review codes and data, and there was an agreement on the findings. To establish credibility we choose a different participant from the health team in NICU and used peer checking. To check for transferability, we clearly explained the context and the process of research. To ensure participant anonymity, names mentioned in the transcription were pseudonym and data were stored in a locked location. Research ethical approval was obtained from Isfahan University of medical sciences. Participants were asked to sign consent form for observations and interviews and they could withdraw from the study at any point in time.

## RESULTS

After 14 months of ethnographic research, 3 main themes were emerged from data and they were: "Organization challenges", "Environment challenges" and "being honest in crisis", in the NICU. The themes and their subthemes are shown in Table (1).

**Table1. Themes and subthemes of challenges of inter professional collaboration in NICU**

Subtheme	Them
time limitation	Organization challenges
overload work	
Inadequate and inefficient resources	
Physical characteristics	Environment challenges
social characteristics	
physiological characteristics	
critical situations	Being honest in crisis
critical infants	

**Organization challenges**

Organization challenges were one of the three themes obtained from data analysis as a cultural factor of collaboration in NICU. This theme included three subtheme: time limitation, overload work, inadequate and inefficient resources.

Observation in the field: After the specialist physician's arrival, round started. This round consisted of junior doctors and specialist doctor and medical students, it was an opportunity for discussion, review and teaching for healthcare providers. Researcher's observations showed that when team members were standing for a long time by the patient's bed and were having a discussion with each other, nurses were still working in the ward. The researcher asked for one of her key informants about non-attendance in rounds and she replied:

"Nurses cannot participate in the longed medical round because of their usually carrying more than 3 patients in the NICU and they are constantly busy to infants. In this condition they have not break and do not drink tea. "

One participant said: "I cannot attend the rounds. When I am in rounds, I lose my time to do job for patients. My workload is too much and I have to care 4-5 infants. If one of the infants gets apnea or cardiac arrest, I will lose all of my time and I have to work under much more pressure."

In environments such as NICU the workload is too high. In observations: Nurses and residents were too busy and the researcher did not find a nurse or resident just standing and doing nothing; and tea breaks were very short. They were constantly working with babies and there was little communication with each other. When the researcher asked one of the residents about the lack of communication, she answered: "In this hospital human resources are limited and we must work hard. Sometimes supervisors don't pay attention to the amount of work in the ward".

The next subtheme was shortage of resources. When the researcher observed the mother's room and communicated with them, the sanitary condition of their room was bad. The room was untidy and did not provide the necessary condition for a comfortable rest. The cost of some drugs and laboratory tests were very expensive in Iran. Due to international sanctions and prohibiting some drugs to be sent to Iran the prices has gone up and mothers are really concerned about drug prices and laboratory costs.

**Environment challenges**

Physical characteristics, social characteristics and physiological characteristics in the NICU environment were subthemes of this theme. Almost all of the observations in this study suggested that NICU environment is an important factor that affects interaction and communication between healthcare providers and mothers.

Part of observation: (9: 30 AM), Hospital B NICU

"A mother was looking at her baby, the nurse came to her and said: the doctor is coming now and he will pick a fight with you, please go out. Mother was wiping away her tears and left the ward."

This observation showed that in the mornings when the specialist physician comes to the ward and for the duration of the round mothers are not allowed to enter the ward, which causes anxiety in mothers. The specialist physician, nurses and other healthcare providers were referring to the special condition of the ward by focusing and insisting on the fact that NICU stands for Neonatal Intensive Care Unit which shows a challenging environment.

A large number of observation episodes showed that:

When one of infants gets apnea or cardiac arrest, all of team members gather around infant at the moment. Four of mothers' in the NICU were anxious and crying. They asked from healthcare providers: what happened? Please see my baby? But healthcare providers were busy with critical infant and could not respond. These observations in the NICU ward showed changes in infant's conditions. These situations have an impact on social interactions and collaborations between healthcare providers and families. Therefore as a condition related to open environment of NICU ward that can lead to stressful situation.

In part of observation: In the first session after the nursing students entered the ward, the instructor told to student: There are many issues here at NICU that may put babies at risk; the healthcare providers are so busy and do not pay attention to the babies when they are standing by the incubator and having a discussion, especially when infants are sleep as babies tend to nurture and gain weight when are sleeping For instance, now I touch the baby, then the nursing student will touch the baby, then medical students will touch the baby, then midwifery students will touch the baby and finally the instructor will touch the baby.

When the researcher observed student behaviors in the NICU, she observed: Many of the students do not even follow the principal of washing their hands and they just want touch the infants. These observations in the NICU ward showed that medical team and nurses prefer to work separately and they have no interest in collaborating with others, especially students.

### **Being honest in crisis**

Being honest in crisis is the third theme in this study. It has two subthemes: critical situations and critical infants. Critical situations, are one of the conditions that are the basic reason of inter professional collaboration in the health team. Observations showed that highest level of interactions and communications occurred when there was a crisis.

### **Part of observation**

Mother: I do not know it. When I am in the NICU, everything is fine, okay and when I leave every falls apart.

Nurse: Here is the NICU; condition may change at any moment.

Complexity and changes in the infant's conditions create challenges for healthcare providers and parents in NICU.

Part of observation:

It was 9:00 AM and the physician was checking on infants, suddenly one of the infants got apnea and cardiac arrest. Devices' sounds and alarms could be heard. The nurse immediately called the physician. Physician started CPR and was shouting for drug injection. All of the team members were next to the incubator and the alarm sound attracted the mother's attention. There was a stressful situation going on. Resuscitation was successful, the physician went toward other infants and nurses and the resident were still working with devices. Alarms were turned off and the condition became normal. At this moment I saw all of the team member and student gathered around of this infant and collaborate with each other thus we can say that changes in infant's conditions and crisis condition have an impact on social interaction and collaboration between healthcare providers in NICU.

## **DISCUSSION**

This study identified challenges of collaboration in Iranian NICUs. These findings provide an understanding of the challenges of inter professional collaborations among the healthcare providers in the NICU based on the healthcare provider's experiences. This qualitative research shows that there are challenges among the health team in Iranian NICU that can have an impact on the effective collaboration. The ward's rounds were so long and the time limitation and the workload was so high for healthcare providers, therefore these can effect communications and collaborations among healthcare providers. Reported findings from the context of emergency and infection ward rounds were similar to our findings [18, 19].

NICU healthcare providers face many challenges. These challenges are caused by a wide range of factors. Institutional barriers have a major role in creating challenges for inter professional collaboration. When the physicians and nurses do not have enough time and resources, they have insufficient communication with each other and collaboration is broken down. These findings are consistent with those reported by Stein-Par Bury and Liaschenko [20]. In this research lack of time for communication between nurses and physician was as reason of lack of effective collaboration. Some findings such as insufficient human resources and equipment's and time limitation are similar to a study in Turkey [21]. This finding was a reason of communication problem in NICU, because health team does not have enough time for discussing and transporting information. Perhaps similarity of culture and religion in Iran and Turkey is the reason for such common themes.

According to Irajpour's research that investigates the use of inter professional collaboration in health education from an educational perspective, this study offers some insight to the bedside clinical teaching and find that sharing information among healthcare providers can improve inter professional collaboration among them [22, 23]. Therefore, identification of barriers of education and reasons of challenges that can effect on inter professional collaboration in culture of the NICU environment by the healthcare providers can help creating an effective collaboration among healthcare providers and improve the quality of care [10, 13, 14].

The physical environment of NICU created some challenges for the mothers and the healthcare providers. It can impact the team's collaboration culture. The physical layout of the ward, the location of all infant's beds in NICU and the location of mothers' room outside of the ward can cause difficulties for collaboration. This finding is confirmed by ecological theory. Based on the ecological system theory (Compton & Galaway), individuals' behaviours are dependednt on their surrounding environment and environmental factors that affect individual's behaviours [24, 25].

In this study, health team conducted care and neonatal crisis management when the crisis occurred. This could lead to collaboration and communication between the healthcare providers. But in some cases lack of information lead to professional gap in the health team. In many studies increased workload was recognized as a common stressor during crisis when patient condition goes bad or when resources were unavailable. Therefor there should be a crisis management plan for planning strategies to prevent these stressors in the health team [26, 27]. This management will be conducted only by effective communication and inter professional collaboration in practice [28].

Future studies may help to explore more concepts for analysis of culture of inter professional collaboration in the health team in NICU and other parts of health system.

## CONCLUSION

This study investigates the challenges of inter professional collaboration among healthcare providers in NICUs in Iran. In this study an ethnographic approach focused on healthcare provider's interactions in every day was used in the NICU environment. The results of this study can help us to create new inter professional collaboration cultures in different wards of hospitals particularly NICUs. As a result this culture lead to the development of the care and quality of care in NICU. Most of the themes that emerged in this study were similar to other relevant studies. However, the analysis of the NICU culture provides an opportunity for health managers to examine the elements of cultural and social contexts to achieve improvements in patient safety and care quality. These findings may assist the healthcare providers to focus more directly on goals of inter professional collaboration and reduce the barriers between professional groups.

## Limitations

This study has several limitations. It was conducted in two specialized units, therefore findings cannot be generalized to the population. Our findings are based on teaching hospitals and may not be applicable to non-teaching hospitals. We suggest that such qualitative research should be done in other units, non-teaching hospitals, and with other healthcare professionals in Iran.

## Conflict of interest

The authors declare that there is no conflict of interest.

## Authors contributions

This study is a part of a nursing doctoral dissertation. The first author was a participant observer in NICU. She conducted all of interviews with healthcare providers. Corresponding Author was supervisor of this dissertation and his guide about observation and interviews. He has reviewed all of codes, subcategories and themes and gave comments. The third authors participate in process of content analysis and writing article.

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