BARRIERS OF DELIVERING NURSING CARE TO PEDIATRIC PATIENTS AT INTENSIVE CARE UNITS: A QUALITATIVE STUDY DESIGN

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Abstract
Background: Nurses who work at pediatric intensive care unit face several challenges, such as an untidy work environment, outdated equipment, excessive time spent explaining the patient's condition to the attendant, and inefficient morning rounds. Uncertain prescription orders, poor nurse-to-doctor communication, and inadequate nurse-to-patient ratios can all be obstacles in the nursing profession. Aims of the study: To determine barriers that might face delivering the nursing care for pediatric patient at intensive care. Method: a qualitative descriptive approach was used to explore the barriers experienced by ICU nurses throughout the provision of care for pediatric. non-probability (purposive) sampling was applied to select the research sample, which comprised of 15 nurses worked in the three different intensive care units. Data collected using semi-structured face-to-face interviews by a researcher by using thematic analysis Results showed that nurses who work at ICU during were faced several barriers during deliver care for pediatric patients. Conclusion: The study concluded that nurses who work at ICU were faced several barriers to deliver care for pediatric patients, included family related barrier, Technological and tools related barrier, task barriers, organization barrier, in addition to solutions to solve these challenges. Recommendation: The provision of all the resources required to support the functioning of pediatric critical care units should be the primary focus of the Iraqi Ministry of Health.
Keywords: barriers, nurse, pediatric patient, ICU, qualitative study

Introduction

Among all healthcare professionals, nurses perform the most important role in each hospital. Nevertheless, they also face risks, challenges, and issues. They become more prone to confrontations as a result. due to the demands that their line of work places on them such as handling heavy workloads, working overtime, communicating with patients and their companions, and interacting with the institution's managers it is crucial to focus and steer the study of nursing phenomena in order to address the issues that the field is currently facing (Hendee & Qassim, 2021)(Mohammed & Bakey, 2021)

Nurses who work at pediatric intensive care unit face several challenges, such as an untidy work environment, outdated equipment, excessive time spent explaining the patient's condition to the attendant, and inefficient morning rounds. Uncertain prescription orders, poor nurse-to-doctor communication, and inadequate nurse-to-patient ratios can all be obstacles in the nursing profession (Khurshid et al., 2023)

The most frequent challenges in Kashan, Iran, had to do with family members' interruptions. The two most frequent challenges were being overly called by family members (75%) and being sidetracked by them (72.9%), inadequate area for paperwork (52.9%) and a disorganized unit (51.6%) were the most frequently reported challenges (Rajaeian & MasoudiAlavi, 2018). The purpose of this study was to determine barriers that might face delivering the nursing care for pediatric patient at intensive care units. Moreover, literature is lacking in evidence that might assist pediatric healthcare professionals, particularly doctors and nurses, in understanding the problems they may encounter when caring for a diverse patient and how to provide culturally competent care to their patients and family.

Method

Study Design

A qualitative descriptive approach was used to explore the barriers experienced by PICU nurses throughout the provision of care for pediatric patients.

Study Sample

A non-probability (purposive) sampling approach was applied to select the research sample which comprised of 15 nurses worked in the three ICUs at Nasiriyah Heart Hospital, Bent Al-Huda teaching hospital and finally Mohammed Al Mousawi Hospital for pediatric.

Data Collection and Procedures

A researcher used semi-structured face-to-face interviews to gather data. Six open-ended questions about their experiences with the study's central question, "What were the barriers you experienced as an ICU nurse in caring for pediatric patients? Were asked to participants. subsequently, the interviewer probed further with more in depth questions to explore their more profound experiences. The researcher made every effort to ensure the comfort and privacy of the participants. The researcher recorded every conversation that took place during the interviews with the participants' permission. Every

participant was interviewed once, and each interview lasted 30 to 45 minutes. Interviews continued until the data became saturated. Notably, there was data saturation with 15 nurses.

Data Analysis

Qualitative data analysis has been achieved by using qualitative content analysis, similarities among words, phrases, sentences, and concepts to answer the research question: "what are the barriers about delivering nursing care for pediatric patients at ICU" The qualitative content analysis process included preparing the data and transcripts, defining units of analysis, developing categories and themes, determining the clarity of units, coding the data, drawing conclusions, and reporting findings. This process helped achieve saturation of all concepts including ten participants interview to determine their thoughts, intentions, and beliefs such that no new category or themes were found. Five themes were emerged from content analysis, in addition to subthemes about barriers to deliver nursing care at pediatric intensive care unit.

Ethical Considerations

The Scientific Research Ethical Committee at the College of Nursing University of Baghdad provided ethical approval, and prior to data collection. all participants were received informed consent prior to participate in the research process to ensure their right to share or reject sharing in the research process. All participants have the right to withdraw from the research at any time of data collection process. All information and recorded data from the participants were obtained by the researcher and kept for research purpose only with no harm to the participants. Each participant received a numerical number instead of the real name to ensure participant's privacy.

Results

Table (1): The Distribution of the Study Sample according to their Demographic characteristics.

Variable		Results	
Age (year)	**Minimum / Maximum**	**20**	**41**
	Mean ± SD	**27.11 ± 4.4**	
Variable		**F**	**%**
Sex	**Male**	**16**	**26.7**
	Female	**44**	**73.3**
	Total	**60**	**100**
Marital Status	**Single**	**32**	**53.3**
	Married	**25**	**41.7**
	Divorced	**3**	**5**
	Total	**60**	**100**
Educational level	**Preparatory**	**2**	**3.3**
	Diploma	**16**	**26.7**
	Bachelor's	**36**	**60**
	Higher education	**6**	**10**
	Total	**60**	**100**
Year of experience	**Minimum / Maximum**	**1**	**18**
	Mean ± SD	**5.1±4.1**	
Years of experience in ICU	**Minimum / Maximum**	**1**	**14**
	Mean ± SD	**3.03±2.76**	
Economic status	**Week**	**1**	**1.7**
	Middle	**27**	**45**
	Good	**29**	**48.3**
	Excellent	**3**	**5**
	Total	**60**	**100**
Residency	**Urban**	**43**	**71.7**
	Rural	**17**	**28.3**
	Total	**60**	**100**

Freq. = frequency, % = percentages

Results in table 4.1. presented that the mean age of the study sample (nurses) were 27.11 years old with standard deviation 4.4. In addition, the majority of the study sample were female who accounted for 73.3 percent. Moreover, 53.3 percent of the study sample were single and 60 percent have bachelor's degree in nursing. Related to nurses' experience, the mean of their experience was 5.1 years in nursing, and the mean of years of experience in ICU was 3.03 years. Results revealed that 48.3 percent of the study sample have good economic status and 71.7 have lived in urban area.

Table (2): Thematic Analysis Findings of qualitative data.

R	Themes	Subthemes
1	Family related barrier	interfere with drug and intervention
		Lack of awareness about care
		Eating beside pediatric patients
2	Technological and tools related barrier	Lack of appropriate resources and devices
		Lack of drugs
3	Task to barriers	Nursing shortage
		Lack of required knowledge base to deliver care
		Lack of cooperation between nurse and patients.
4	Organization barrier	absence of real management and clear protocol
5	Opportunities and solutions for barriers	Availability of organization protocol
		Increasing number of nurses at PICU.
		Availability of resources and drugs
		Increase knowledge base for nurses

Family Related Barrier: The first theme that surfaced expressed nurses' opinions of the barriers they face when providing care for pediatric patients: barriers related to families. Three connected subthemes were present in this theme:

Interfere with Drug and Intervention: *Interference with drugs and intervention* was the first subtheme under the general heading of family-related barriers**.** participant 1 said:

I had many barriers during my work, like the family who interfere in my work, some parents refuse the cannula. When the child's vein is not clear and the nurse tries several times to insert the cannula, they refuse that, knowing that the most important thing for the child inside the hospital is the cannula.

Lack of Awareness about Care: Under the general heading of family-related obstacles, the second subtheme was *Lack of Awareness about Care.* participant 4 stated: "when giving treatment, they wonder why you stop treatment, why you give it quickly, and this is due to the lack of family culture and knowledge."

Eating beside Pediatric Patients: *Eating beside pediatric patients* was the third subtheme under the family related barriers theme. participant 11 added: "Permanent presence of the parent at the intensive care unit even during meals they bring it to the

PICU and eat beside their patient confuse our work and that is the feedback to their patient become worse."

2.Technological and Tools Related Barrier: Nursing professionals' "responses about barriers facing them during delivering care for pediatric patients" revealed a second key theme: *technological and tool-related barriers.*

Lack of Appropriate Resources and Devices: The first subtheme under the general heading of the barriers related to technology and tools was *lack of appropriate resources and devices*. Participants 9 said: "Some devices are not widely available, for example, the micro drip device is not widely available, which we desperately need in order to control drug doses."

Lack of Drugs: The *lack of drugs* was the second subtheme connected to the technological and tool-related barrier. Participant 3 added: "there is a shortage of drugs especially the expensive drugs, such as vancomycin and other important drugs in addition, some children die due to the lack of a shock drugs." While Participant 13 added: " Some children die due to the lack of a shock drugs"

3.Task Barrier: *Task barriers* appeared as the third theme from nurses' replies regarding the barriers they face when providing care for pediatric patients in the intensive care unit.

Nursing Shortage: A *shortage of nurses* was the first subtheme under the task barriers umbrella. Participant 4 stated: "We have a major shortage of staff, and we have to do double work, which leads to negligence in patient service, so we cannot meet the needs of all patients."

Lack of Required Knowledge Base to Deliver care: The second subtheme inside the *task barriers* umbrella. Participant 5 said: "There are obstacles for the worker in the health institutions, the inexperience of nursing staff about dealing with children, working in this units needs special skills because children weigh a little bit, that is, so any mistake is unacceptable."

Lack of Cooperation between Nurse and Patients: The third subtheme that falls under *task barriers*. Participant 8 reiterated: "The patients themselves not cooperative or hyperactivity and difficulty controlling them so every one patient need more than one nurse to take care of him."

4-Organization Barrier: The fourth major theme that emerged from nurse's responses about barriers facing them to deliver care for pediatric patients at ICU.

Absence of Real Management and Clear Protocol: One of the biggest barriers faced by nurses working in intensive care units was the lack of effective management and well-defined protocols. Participant 6 stated: "There are many barriers we faced, including poor management of work and un continuous renewal of the working Protocol, no genuine intention to change this lead to inflexibility to work."

5.Opportunities and Solutions for the Challenges: The final significant theme to emerge from the replies of the participants was the opportunities and solutions for overcoming the barriers that nurses have when providing care for pediatric patients in intensive care units.

Availability of Organization: The *availability of organizational protocol* was the first subtheme under the general heading of opportunities and solutions for barriers facing nurses in the intensive care unit (ICU) when providing care for pediatric patients**.** Participant 9 said**:** "Protocol organizing work schedules that suit workload through cooperation between officials and staff is the suitable solution to our problem."

Increasing Number of Nurses at PICU: *Increasing the number of nurses in the PICU* was the second subtheme under the general heading of barriers to be solved. Participant 11 said**: "** Increase number of nurses in the unit is one of the best solution to decrease obstacles.**"**

Availability of Resources and Drugs: The *availability of resources and medications* was the third subtheme. Regarding the lack of medications and devices, the majority of the respondents thought that the administration had to cover it. Participant 6 added: "They must provide the devices, and there must be training and qualification on the use of these devices, as well as monitoring of these devices, drugs as well."

Increase Knowledge Base for Nurses: The fourth subtheme was *Increase Nursing Knowledge Base*. Participant 5 stated: "Solutions are to set up training courses for ICU staff to explain how to calculate the drug dose as we deal with a few weights, also how to feed the child and control his psychological anxiety.**"**

Discussion

Results in table 1. presented that the mean age of the study sample (nurses) were 27.11 years old with standard deviation 4.4 This result agrees with study done by (Waheed & Abdulwahhab, 2022) which showed that the mean age of the nurses was (26 + 4.056) years. In regard to the gender , the majority of the study sample were female who accounted for 73.3 percent, the study supported by results of the following studies:(A. Q. Ahmed & Hattab, 2022) the most of nurses' gender above two third in the sample were female .A descriptive study that performed at Mosul Teaching Hospitals to Assessment nurse's knowledge toward care of children treated with ventricular peritoneal shunt, results showed shows that nearly two third participant of the sample was female gender (Raghda Lazem Mahmoud & Shawq, 2022) In regard to marital status, 53.3 percent of the study sample were single. According to (Mirshekari et al., 2017) a descriptive cross-sectional design on 89 nurses in trauma intensive care units to determine Intensive care unit nurses' perceived barriers towards pressure ulcer prevention. Evidence of the present study depicted that most of the nurses (48.7%) were unmarried. on other hand, and 60 percent in the present study have bachelor's degree in nursing, this finding supported by (Rajih, 2020) which appeared that (64%) of the participants graduated from the college of nursing. Related to nurses' experience, in current study, the mean of their experience was 5.1 years in nursing, and the mean of years of experience in ICU was 3.03 years. This finding supported by the results of the following studies, A pre-experimental study design was carried out in the critical care units of Al Ramadi Teaching Hospital and Al Fallujah Teaching Hospital at Al-Anbar Governorate supported this result, (43.8%) of the participant have (1-5) years of experiences, 87.5% of them have experiences in critical care units(A. T. Ahmed & Hassan, 2021) . Also, A descriptive cross-sectional study includes (40) nurses working in children's hospital in Babylon, according to years of service in nursing field, (55%) of the study participant had (1-5) years of service(Awad & Ajil, 2021). Results revealed that 48.3 percent of the study sample have good economic status and 71.7 have lived in urban area, similarly in

a quasi-experimental design held at Medical City Hospitals in Baghdad City consisted of (60), the result showed that 100 percent of the study sample lived in urban area (Hamad & Qassim, 2019).

Results in table 2 provided the analysis of the study's qualitative component. The data analysis produced five themes, each of which had several subthemes. Every subject represented a portion of a barrier, and the final theme represented the obstacles' potential solutions as seen by nurses.

The first theme was *family related barrier*. The first subtheme that surfaced from the family-related barrier was *Interfere with drug and intervention*, which was supported by a study found that receiving care from family members is a "wonderful thing," but they also had unfavorable experiences, such as when family members adjusted ventilator settings, silenced alarms, and repositioned patients. Patient safety was put at risk, which created a barrier (Hetland et al., 2018)

The second subtheme of *family related barrier* was *Lack of awareness about care* which was supported by a study found that having the family by the bedside all day could be "distracting" and "exhausting," the nurses added, particularly when families questioned the nurse while she was giving a critically ill child direct care (Coats et al., 2018)

The third subtheme emerged from *family related barrier* was *Eating beside pediatric patients***,** which was supported by another study found that the PICU's physical environment did not meet the needs of parents to eat and sleep, making it more challenging for nurses to collaborate with parents (Lam et al., 2006)

The second theme was *technological and tools related barrier* and the first subtheme emerge from *technological and tools related barrier* was *Lack of appropriate resources and devices*, which was supported by a study found that the use of personal protective equipment (PPE) is crucial for shielding nurses from nosocomial infections(Bakey, 2016). And another study stated that a lack of medical equipment hinders the ability of the health system to operate by negatively affecting patients, the hospital, and the nursing profession (Moyimane et al., 2017)

The second subtheme emerged from *technological and tools related barrier* was *the lack of drugs,* a study in the same line found that a complex problem that has an international impact. With the emergence of several associations, governmental organizations, platforms, and policies, it has received a lot of attention in the majority of high-income nations (Acosta et al., 2019)

The third theme was *task barriers* and the first subtheme under the umbrella of *task barriers* theme was *Nursing shortage*, in order to support this result another study stated that despite hiring a lot of workers from Central and Eastern Europe, including Poland, Great Britain, which has the greatest nursing shortage, is already having trouble with the issue (Marć et al., 2019)

The second subtheme emerge from *task barrier* theme was *Lack of required knowledge base to deliver care*, results of another study stated that most nurses have a moderate level of knowledge and implementation of the intensive care unit nursing care guide (Arrar & Mohammed, 2020)

The third subtheme emerged from *task barrier* theme was *Lack of cooperation between nurse and patients* which was supported by another study found that many of the children who visit the critical care unit are completely unfamiliar with the surroundings because they have never before interacted with health services. Furthermore, the care that requires to be put into practice may terrify a young child. The nurses say that as a result, it is normal for kids to experience anxiety when considering going to the hospital for medical attention. This anxiety may make it more difficult for the nurse to work with the child and possibly lead to a less fruitful meeting (Grahn et al., 2016)

The fourth theme was *Organization barrier* and the first theme emerged from this theme was *absence of real management and clear protocol* the absence of real management and clear protocol considered as challenges they faced by nurses during their work in ICU by the most of study participant responded.

The fifth theme was *Opportunities and Solutions for the barriers* and the first subtheme emerged from it was *Availability of organization protocol***,** A descriptive study design of (35) nurses found that demonstrated the necessity for clear organizational guidelines and a work plan for nurses in order to keep them safe and on track while providing the necessary care for patients in intensive care units (Khalaf & Bakey, 2022).

The second subtheme from *Opportunities and Solutions for the barriers* theme was *Increasing number of nurses at PICU.* Accordingly, another study stated that adequate and efficient human resources are necessary for delivering high-quality care, according to a qualitative study on the quality of care given by ICU nurses that included 23 participants and purposive sampling with maximum variation (Nobahar, 2014).

The third subtheme emerged from *Opportunities and Solutions for the barriers* theme was *Availability of resources and drugs* which was supported by a study found that lack of facilities and equipment puts nurses under additional stress, which negatively impacts them and wastes their time and energy, which eventually results in fatigue and poor performance. Thus, having enough resources can help nurses have fewer work-related issues and provide higher-quality nursing care (A. T. Ahmed & Hassan, 2021)**.**

The last subtheme emerged from *Opportunities and Solutions for the barriers* theme was *Increase knowledge base for nurses*. This results supported by another study stated that nursing education "must transcend the traditional areas, such as chemistry and anatomy to enable them to gain a deeper understanding of - for example - health promotion, disease prevention, and immunization," according to a Saudi Arabian study (Aboshaiqah, 2016)

Conclusion

pediatric Nurses were experiencing barriers during delivering care to pediatric patients from nurses' a number of themes emerged, the major themes were family related barrier, technological and tools related barrier, task barriers, organization barrier; and opportunities and solutions for barriers, and in spite of the obstacles, the nurses' answers indicated how to overcome them when providing care to pediatric patients. These solutions included having organizational protocols available, having additional nurses in the PICU, having resources and medications available, and enhancing the nurses' knowledge base.

Recommendations

The study recommended:

The provision of the resources required to support the functioning of pediatric critical care units should be the primary focus of the Iraqi Ministry of Health. In order to guarantee higher standards of healthcare services, efforts should be directed at resolving each of the aforementioned obstacles.

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