



The contextual factors influencing intuition formation in pediatric nursing settings: A qualitative content analysis

Shilan Azizi ^{1,2}, Ali Fakhr-Movahedi ^{3,4*}, Abbasali Ebrahimian ⁵

¹ Student Research Committee, Semnan University of Medical Sciences, Semnan, Iran

² Nursing School, Semnan University of Medical Sciences, Semnan, Iran

³ Nursing Care Research Center, Semnan University of Medical Sciences, Semnan, Iran

⁴ Pediatric and Neonatal Nursing Department, Nursing School, Semnan University of Medical Sciences, Semnan, Iran

⁵ Health in Emergencies and Disasters Group, Faculty of Paramedical, Qom University of Medical Sciences, Qom, Iran

* **Corresponding author:** Ali Fakhr-Movahedi, Nursing Care Research Center, Semnan University of Medical Sciences, Semnan, Iran
Pediatric and Neonatal Nursing Department, Nursing School, Semnan University of Medical Sciences, Semnan, Iran

Email: Alimovi49@semums.ac.ir

Received: 15 July 2023 **Revised:** 12 September 2023 **Accepted:** 12 September 2023 **e-Published:** 2 December 2023

Abstract

Background: Intuition plays an essential role in caring for children with high-risk diseases and making appropriate decisions in critical situations. Understanding the context of intuition will lead to a more appropriate use of intuition.

Objectives: This study was proposed to explore pediatric nurses' experiences of contextual factors influencing intuition formation in pediatric nursing.

Methods: This qualitative content analysis was conducted on 16 nurses and 2 pediatricians in pediatric settings of Bandar Abbas hospitals, Iran, in 2020. Participants were purposefully selected with maximum variation in job position, age, and work experience. Data were collected through semi-structured interviews that focused on the occurrence of their intuition experiences and influencing factors. The interviews were transcribed and analyzed using the Graneheim and Lundman method of content analysis. To increase the trustworthiness of the data, the codes extracted were peer-checked, member-checked, and external-checked.

Results: The theme of "competence in the shadow of limitation and uncertainty" represented the context in which intuition occurred and was used in pediatric nursing. This theme was derived from the two categories "the limited scope and inexplicability of intuitive actions" and "rational mastery."

Conclusion: Despite the belief in the role of knowledge and experience in forming intuition, pediatric nurses were mostly reluctant to intervene based on their intuition. Organizational issues such as the limited and ambiguous nature of Iranian nurses' independent practice and the inexplicable nature of intuitive actions have limited pediatric nurses' use of intuition. Hospital leadership should moderate barriers to using intuition by changing mindsets, culture, and legislation.

Keywords: Clinical decision-making, Intuition, Nursing Care, Pediatrics, Qualitative research.

Introduction

Pediatric nurses are often faced with unpredictable situations that prevent them from reviewing the evidence and choosing the best option. In such cases, they are forced to make quick and accurate decisions.^[1] Due to the complex nature and unique symptoms of pediatric illnesses, intuition plays an important role in making clinical decisions about them.^[2] Intuition is a sudden and instinctive awareness that provides guidance in critical events such as decisions in critical and high-risk patients.^[3]

Intuition develops through experience and is influenced by the ability to adapt to the context and physical conditions of the environment.^[4]

Intuition is an important tool in clinical decision-making. In the clinical setting, intuition improves the predictability of risky situations for the patient as well as the quality of care.^[5] A nurse's professional knowledge and prior experience in a particular clinical situation is especially important for the application of intuition in this area.^[6,7]

Some studies have shown that nurses' knowledge, experience, autonomy, stress level, education level, skills, clinical environment, workplace culture, and nurses' understanding of the patient's condition are some of the contextual factors affecting their decisions.^[8,9] Michael *et al.* also referring to the role of the clinical setting in clinical decision-making, highlighted that exposure to risky and unpredictable clinical conditions empowers nurses to make better decisions.^[10]

Pediatric nurses are always faced with situations requiring clinical decision-making. Improving the decision-making process among pediatric nurses requires not only clinical knowledge and experience, but also confidence, support from managers, and effective communication with pediatricians.^[11] Fatemi and Bell believe that intuition combines knowledge acquired from communicating with children or their families with the nurse's knowledge and experience. This leads to immediate concern and requires immediate action or reassurance about the current situation.^[12] Aghajani *et al.* also pointed out the need for health policymakers to be mindful of the barriers and facilitators of using intuitive decision-making in situations such as crises and epidemics.^[7]

Understanding the context in which intuition occurs can lead to more appropriate use of intuition, especially in sensitive care decisions. In critical situations, nurses provide care based on clinical wisdom and intuitive decisions.^[7] However, the high workload of Iranian nurses and the lack of opportunities to use information sources, prevent pediatric nurses from making sound and timely decisions.^[11] It is therefore essential to know the contextual factors influencing intuitive decision-making in critical situations, especially in pediatric nursing.^[13,14] Examining nurses' experiences of intuitive decision-making and the contextual factors affecting their clinical decisions can lead to positive care outcomes.^[7] Because children are more susceptible to being affected by unstable situations, pediatric nurses are frequently faced with urgent decision-making situations that further justify the use of intuition. Therefore, Tahmasabi *et al.* considered intuitive decision-making in pediatric nurses as a sign of decision-making power based on clinical experience.^[11]

To our knowledge, there are no published studies of pediatric nurses' experiences of intuitive care. Currently, studies about nurses' intuition often address nurses in emergency departments and adult intensive care units.^[7,15] Therefore, this question arose in the minds of the researchers: "What are the contextual factors of intuitive care in pediatric nursing?" Answering this question may help guide future efforts to support pediatric nursing

practice. Understanding is a subjective area and people's subjectivity can shape their perceptions of the reality. Qualitative content analysis focuses primarily on the discovery and interpretation of the context of people's experiences and perceptions of subjective life phenomena.^[16] Therefore, a qualitative research approach was selected to explore and deeply describe the pediatric nurses' lived experiences of intuition while working with children.

Objectives

This study was proposed to explore pediatric nurses' experiences of contextual factors influencing intuition formation in pediatric nursing.

Methods

Study design and participants

A qualitative content analysis was conducted in the pediatric departments of Khalij e Fars, Shariati, and Pediatric referral hospitals in Bandar Abbas, in southern Iran. Participants included 14 nurses, 1 supervisor, 1 head nurse, and 2 pediatricians working in the pediatric departments of the aforementioned hospitals. The inclusion criteria were willingness to participate in the study, speaking Persian language, and at least one year of work experience in the pediatric wards. The first participant was selected purposefully and based on achieving the highest score on the Smith Intuition Questionnaire, willingness to participate in the study, and easily sharing her experiences and feelings with the researcher. This participant had 11 years of experience in the pediatric ward. Purposeful sampling with maximum variation in professional experience, job position, age, type of pediatric ward, and hospital was continued until data saturation. Previous participants were also asked to nominate nurses who use intuition in patient care. According to the purpose of the study, most participants were pediatric nurses. However, the emerging data gradually led the researchers to interview a number of nurse managers (head nurses and supervisors), physicians, and some nurses with less work experience.

Data collection

Data collection was conducted from April to July 2022. Individual semi-structured interviews were the main data collection method. Field notes were also taken. The researcher conducted 19 interviews with 18 participants (one of whom was interviewed twice to resolve ambiguities that arose while analyzing the first interview) [Table 1]. All interviews were conducted by the first researcher, a Ph.D

candidate in nursing with experience in the pediatric department. The interviews were conducted in a private room at the nurses' workplace after they had finished their shift. First, the researcher explained the aims of the study and presented the content of the informed consent form. Then, she presented each participant with a clinical example of intuition and asked them to describe if they had had an experience similar to this example. After general warm-up questions, the interview began with general questions such as "Please tell me about your experiences when you get an intuitive sense about a child," "Tell me, how do you develop your intuition," and "What contextual factors have influenced your intuitive care?" Participants were also asked to elaborate about factors facilitating their use of intuition and the problems they encountered in using intuition. In addition, probing questions such as "Please elaborate" and "What do you mean?" were asked during the interview. The interviews were recorded using a digital voice recorder. The length of the interviews ranged from 20 to 67 minutes. Data saturation occurred after the 17th interview; however, we carried out two additional interviews for assurance. Data saturation was identified through repetition of conceptual codes, when no new code emerged that required a change in categories or subcategories.^[17]

Table 1. Participants' demographic characteristics (N=18)

Characteristics	N (%) or Mean±SD	Range
Gender		
Male	1 (5.5)	
Female	17 (94.5)	
Marital status		
Married	14 (77.8)	
Single	4 (22.2)	
Ward of work		
Pediatric	10 (55.6)	
NICU	5 (27.8)	
Newborn	3 (16.6)	
Education		
BSc	14 (77.8)	
MSc	2 (11.1)	
Pediatrician	2 (11.1)	
Job position		
Nurse	14 (77.8)	
Head nurse	1 (5.5)	
Supervisor	1 (5.5)	
Physician	2 (11.1)	
Age (year)	38.11±8.31	24-57
Experience in Hospital (year)	13.44±7.17	0.5-27
Experience in pediatric ward (year)	9±5.59	0.5-22

Ethical considerations

This study was part of a dissertation approved by the Ethics Committee of Semnan University of Medical Sciences (Date: Dec 17, 2019, No: IR.SEMUMS.REC.1398.222), Semnan, Iran. A letter of introduction was obtained from the university's vice chancellor for research. The project was conducted in accordance with ethical principles and national norms and standards for conducting medical research in Iran. Before the interviews, the researcher clearly explained the aim of the study to the participants. Informed consent was obtained from the participants to participate in the study and to record the interviews. Participants were free to withdraw from the study, and their anonymity was considered. Each participant was assigned a code to keep the information confidential.

Data analysis

Data analysis began after the first interview and continued alongside data collection. At the end of each interview, a verbatim transcription of its content was made as soon as possible. The text of the typed interviews was transferred to MAXQDA Analytics Pro 18 (VERBI GmbH, Berlin, Germany), and the data were managed using this software. The transcripts of the interviews were read several times by the main researcher to gain a general understanding of them. Data analysis was mainly performed by the first researcher and supervised and validated by two university professors with expertise in qualitative research. The data were analyzed using Graneheim and Lundman's (2004) qualitative content analysis approach by identifying meaning units, condensing the meaning units, coding them, and developing subcategories, categories, and themes.^[16] A whole interview was selected as the unit of analysis. Then, words, sentences, or paragraphs with content related to the study aim were considered as meaning units. According to their latent concept, these units were put together to form condensed meaning units. The condensed meaning units were abstracted, labeled, and converted into codes. The codes were grouped into subcategories and categories based on their similarities and differences. Finally, by comparing the categories with each other and thinking carefully and deeply about them, the latent content of the data was extracted and labeled as a theme. Table 2 presents an example of data analysis.

Table 2. Example of data analysis

Meaning unit	Condensed meaning unit	Code	Subcategory
"I don't know what happened, I only know that for a moment a sense told me to go and look at your patient" (P18:N)	An inner and inexplicable sense	Indescribability of intuitional sense	The inexplicability of intuitive actions
"Officials expect everything to be based on the law and do not accept actions based on intuition" (P10: S)	Non-acceptance of intuition and acceptance of low	Lack of legal justification	
"Suddenly the baby dies. Here not predictable at all" (P1:N)	Unpredictability	Unpredictability of conditions	
"This Sense came to me, when I passed by the child without knowing and seeing him before" (P8:N).	A sense without knowing the child	The emergence of intuitional sense without a mental background of the child	

Data trustworthiness

To assess the data trustworthiness, Lincoln and Guba suggested the criteria of credibility, dependability, confirmability, transferability, and authenticity. [18] Credibility was achieved through peer check, prolonged engagement with the data, enrolling participants with different experiences, member checking, and external checking. For member-checking, the transcribed interviews and extracted codes were presented to some of the participants and their approval was obtained. To increase the credibility and dependability of the data, the process of data analysis was checked and confirmed by two nursing professors who were proficient in qualitative research. Moreover, through providing direct quotes, the researcher tried to ensure the transferability of the data. The use of sufficient and appropriate samples with maximum variation strengthened the confirmability of the data. In addition, the entire process of data collection and analysis was carefully documented to facilitate auditability.

Results

Data analysis led to the emergence of the theme "competence in the shadow of limitation and uncertainty." This theme was derived from the two categories "the limited scope and inexplicability of intuitive actions" and "rational mastery" [Table3].

Competence in the shadow of limitation and uncertainty

This theme illustrates how constraints and uncertainty as contextual factors influence nurses' use of intuition. In the light of their clinical experiences, nurses had achieved degrees of clinical competence that allowed them to intuitively understand the child's condition, predict future events, and provide timely care. However, they noted that despite such competence, they were often unable to demonstrate and implement their intuitive decisions because the contextual culture forced them to rely only on medical orders. Therefore, their intuitive performance was not sufficiently revealed.

Table 3. Theme obtained for contextual factors of intuition formation in pediatric nursing settings

Codes	Subcategories	Categories	Theme
The ambiguity between the independent and dependent duties of nurses	The limited and ambiguous scope of independent actions	The limited scope and inexplicability of intuitive actions	Competence in the shadow of limitation and uncertainty
Dependence on physician's medical orders			
The dominant role of the physician			
Facilitating intuition in the independent nursing actions	The inexplicability of intuitive actions		
Lack of legal justification			
Indescribability of intuitional sense	Rational function		
Unpredictability of conditions			
The emergence of intuitional sense without a mental background of the child	Experiential growth of intuition		
The need for professional knowledge			
Logic in intuitive performance			
The precursor role of experience			
Integration of reasoning and intuition			

Category 1: The limited scope and inexplicability of intuitive actions

The pediatric nurses considered the inexplicability of intuitive actions and their limited scope of practice as obstacles to the use of intuition. In their opinion, the nurse's authority and the explainability of intuitive actions can increase the use of intuition in nursing. This category includes two subcategories: "the limited and ambiguous scope of independent actions" and "the inexplicability of intuitive actions."

Subcategory 1: The limited and ambiguous scope of independent actions

In this subcategory, participants referred to the limited and ambiguous scope of their independent actions. According to the participants, physicians and hospital administrators do not support independent nursing practice based on intuition. This resulted in nurses being confused and hesitant to use their intuition when it occurred. Participants referred to the ambiguity between nurses' independent and dependent duties. One of the participants mentioned the ambiguity between the nurse's independent and dependent duties, *"I felt that the child needed to be suctioned and ventilated, but the doctor asked me, why you suctioned the patient? Did I order that? Sometimes the head nurse, like the doctors, accuses me of doing something without a doctor's order..."* (P7: N). Regarding dependence on medical orders, another nurse said, *"We are not allowed to do anything without a physician's order, even if our intuition tells us to"* (P11: N).

Pediatricians also highlighted the dependence of pediatric nurses on medical orders and attributed this to the physician's liability for drug side effects. One of them said, *"Nurses are only allowed to prescribe drugs such as acetaminophen without a physician's permission. But it is forbidden to prescribe certain drugs without a physician's order because it is the physician's responsibility"* (P15: Ph).

According to the participating nurses, physicians always tend to demonstrate their dominance and therefore do not support independent nursing decisions. One nurse commented, *"If we act based on our intuition and then inform the physician, she/he may not accept it. Some doctors want to prove their power and show that they are the decision makers"* (P9: N).

Despite the nurses' limited scope of action, some participants indicated that intuition has a facilitating influence on the nurses' independent action. They acted quickly when they got an intuition, regardless of the physician's order. In this regard, one nurse commented as follows: *"If an action is necessary to save the patient's life,*

and it is at the level of primary care, we can do it. I may administer oxygen or suction before a physician order it" (P12: N).

Subcategory 2: The inexplicability of intuitive actions

According to the pediatric nurses, the inexplicability of intuitive decisions and the lack of legal justification for intuition were limitations that made the nurse hesitant to act on intuition. One of the participants commented, *"No one supports it. It's not easy to intervene based on our inner feelings. Officials expect everything to be based on the law and do not accept actions based on intuition"* (P10: N).

Pointing to the indescribability of the cause and manner of the perceived intuition as a barrier to the use of intuition, one of the nurses said, *"I don't know what happened, I just know that for a moment a sense told me to go and look at your patient. But, I hesitated to act based on my inner sense"* (P18: N).

Some participants, especially the nurses of the Newborn and NICU departments, stated that the pediatric department has unpredictable conditions and something unexpected can happen at any moment." *The newborn suddenly expired. Our ward is not predictable at all"* (P8: N).

Although in many cases, the nurses' inner sense arose from their knowledge and experience or from knowing the patient's background, in some cases their inner feeling about the indescribable change in the hospitalized child's condition arose without a mental background. Sometimes just one observation, even from a distance, was enough for the nurses to achieve an intuition. One nurse said in this regard, *"When I entered the ward, without having any information about the newborn, I said from a distance that the child is not well at all...after a while, the newborn expired suddenly"* (P5: H).

Category 2: Rational mastery

Pediatric nurses considered knowledge, experience, and rational reasoning as the key to intuition and problem identification. With their extensive professional knowledge and experience, and rational reasoning nurses have achieved a state of rational mastery, allowing them to have a broader view of the child's condition, including future events. In this image, the nurse could instantly see what future events might happen to the child. Nurses emphasized that intuition usually comes in a moment, unconsciously and suddenly, but the role of knowledge and experience in the realization of that moment cannot be ignored. The category of "rational mastery" included two subcategories "rational function" and "experiential growth of intuition."

Subcategory 1: Rational function

The participants referred to the role of knowledge and logical thinking in intuition. They repeatedly pointed out that intuition does not occur without professional knowledge. One nurse said, *"If I don't know that the normal respiratory rate in babies is up to 60 and abdominal, and if I don't know that more than 80 breaths per minute is a sign of severe respiratory distress and requires intubation, I will not diagnose the baby's condition and his condition will get worse. Intuition is useful, experience is also useful, but knowledge is necessary and without it, you cannot make a decision and take action"* (P9: N).

Some pediatric nurses also stated that they must provide a rational explanation for their interventions. This is because, from the physician's perspective, it is not enough to intervene intuitively. One nurse had this to say, *"If what I say is based only on my inner sense, the doctor will not accept it, but if I express the clinical symptoms in addition to my inner sense, it will be acceptable"* (P14: N).

Subcategory 2: Experiential growth of intuition

All pediatric nurses addressed the precursor role of experience in intuition. They believed that intuition grows gradually with experience. They believed that experience is more important than knowledge in arousing their intuition. One of the nurses said, *"I was confused when I was inexperienced. Now looking at the patient, I can tell if he is okay or not, my sense tells me. I have told the residents many times that this patient needs ICU, and finally, it happened. These are all based on experience"* (P6: N).

According to the participants, concern for the child's condition, gaining experience, and combining it with professional knowledge, gradually leads pediatric nurses to achieve intuition and identify the problems of the children being cared for. A combination of intuition, knowledge, and experience had boosted their confidence. One nurse said, *"When your sense tells you something once, twice, several times, it becomes an experience for you, then you trust your sense and you realize that this sense warns you that there is a problem. It is the combination of knowledge, experience, and concern for the patient that arouses your inner sense and makes you feel confident"* (P7: N).

Discussion

From the data of this study, the main theme of "competence in the shadow of limitation and uncertainty" emerged. This theme shows that Iranian pediatric nurses develop and use intuition in a context of limitation and uncertainty, even if they are professionally competent.

The limited and ambiguous scope of independent actions

and the inexplicability of intuitive actions were the subcategories that explained the category of the limited scope and inexplicability of intuitive actions. Our participants were somewhat reluctant to intervene based on their intuition due to the fear of being questioned. Independent actions are nursing actions needing no medical order and are performed at the discretion of the nurse. Intuition facilitates independent action, but the physician-centered culture that prevails in pediatric departments limits the scope for independent nursing practice and makes nurses confused and dependent on medical orders even in their nursing tasks. In line with our findings, a study in France also found that nurses are confused about how to implement their autonomy even in practicing primary care. The latter study reported that neither physicians nor nurses in France were ready to accept nurses' autonomy.^[19] Michael *et al.* also reported that nurses in intensive care units made better clinical decisions than other nurses, which was partly explained by their greater autonomy.^[10] Clinical decision-making is one of the essentials of nursing, and the use of the nursing process, accepted protocols, evidence-based decision-making processes, and intuition can help nurses make more appropriate clinical decisions.^[20] Some physicians trust the clinical judgments of trained and experienced nurses.^[19] Physicians' trust helps nurses trust their intuition and use it when necessary.^[7] Some of the experienced nurses in the current study also confirmed that some physicians trust them. The physician's trust in the nurse and avoidance of a physician-centered approach, especially in acute and high-risk situations on pediatric wards, helps nurses trust their intuition and make nursing interventions more independent.

Nurses in the present study cited inexplicability and lack of logical justification as limitations to using intuition. Similarly, Mousavi noted that rules running in the clinical setting, physicians' insufficient participation, and inadequate support from managers are the most important barriers to clinical decision-making among nurses.^[21] However, in a study of intuition in medicine, Alder reported that there is no contradiction between the laws of medicine and the use of intuition. Therefore, in some cases, when a medical decision cannot be made within the framework of existing rules, intuition and irrational methods can be used to make clinical decisions.^[22] The complexity of intuition is particularly exposed when an intuition-based intervention occurs in the absence of clear and objective rules.^[23] To gain professional credibility, novice clinicians try to apply accurate methodology and analytical thinking to avoid making wrong decisions.^[24]

Even if they use intuition, they relate their decision to previously familiar situations because new situations are often associated with ambiguities that disrupt decision-making.^[25] Although intuition is not on the same level as evidence-based medicine, it is an acceptable method of knowing and gaining knowledge in acute and urgent situations. According to Kanda *et al.* any decision-making, including in nursing, requires cognitive-analytical skills and intuition to combine the information obtained from examining patients and choosing the best intervention.^[26] Ruzsa *et al.* believe that intuition becomes more prominent in sensitive and high-risk situations.^[27] However, nurses' insufficient attention to intuition may be due to their doubts about recognizing intuition as a valid way of knowing.

According to the nurses involved in the current study, rational mastery plays an obvious role in the formation of intuition. The rational function and experiential growth of intuition were the two elements of rational mastery. Our nurses also used rational reasoning to back up their intuition. According to Van den Brink *et al.* the combination of knowledge, experience, and learning from mistakes forms the basis for the formation of intuition in expert physicians.^[28] Campbell and Angeli consider intuition as a type of intelligence beyond the unconscious ability to transform inner sense into action. They consider intuition as the result of experience, the ability to coordinate with the environment, and the workplace situation.^[4] Not only nurses but also general practitioners rely on experience and clinical knowledge to use intuition successfully.^[29]

Intuition originates from an inner sense. However, in Iran, nursing interventions are based on medical orders, interventions based on inner senses are unacceptable, and nurses require logical reasoning to prove their senses and intuitive interventions.^[28] Smith *et al.* reported that general practitioners who intuitively diagnosed cancer tried to separate their intuition from descriptions that might be considered unscientific.^[29] Vanstone *et al.* also reported that physicians' intuitive decisions are closely related to conventional reasoning methods and rational processes.^[5] Cunha *et al.* believe that analytic and non-analytic reasoning methods are correlated, and assert that the lack of clinical reasoning in intuitive assessment leads to uncertainty in nurses' decisions, which has negative consequences for patients.^[30]

In this study, intuition developed gradually along with reasoning and experience. A nurse who uses intuition quickly recognizes the problem without becoming anxious by observing the ill child. Among individual factors,

experience plays a key role in the formation of intuition.^[27] Experts also had little intuitive knowledge at the beginning of their work.^[24] Confirming Banner's theory, Farčić *et al.* highlighted that nurses who use intuition have a holistic approach to their patients, and that this holistic approach develops gradually with increasing clinical experience.^[31] The development of intuition in nurses is a long and complex process that occurs gradually over the first 15 years of professional life,^[27] and in which the nurse's successful and unsuccessful experiences play an essential role.^[24]

This study was conducted only with nurses in selected hospital wards in Bandar Abbas, Iran. Although qualitative studies do not seek to generalize findings, conducting similar studies in other cities of Iran may provide further insight into pediatric nurses' use of intuition and its influencing factors.

Conclusions

The present study showed that knowledge and experience play an important role in the development of intuition. However, organizational problems, such as the limited and ambiguous nature of Iranian nurses' independent practice and the inexplicable nature of intuitive actions, have limited pediatric nurses' use of intuition. Intuition develops gradually in light of the nurse's knowledge and experience, and its use is strongly influenced by contextual and organizational factors. Therefore, hospital leadership, including supervisors and physicians, must understand the complex factors that influence this process and manage factors that hinder the development of intuition. It is not easy to change the hospital culture, physicians' mindsets, rules running in the clinical setting, but the process must begin. Therefore, it is necessary to inform policymakers about the effective factors and barriers to the use of intuition by pediatric nurses. However, further studies are suggested to investigate or discover the challenges of nurses in the intuitive care process.

Acknowledgment

This study is a part of a PhD dissertation in Nursing in Semnan University of Medical Sciences. We would like to thank all participants for their tremendous cooperation.

Competing interests

The authors declare that they have no competing interests.

Abbreviations

P: Participant; N: Nurse; S: Supervisor; H: Head nurse; Ph: Physician.

Authors' contributions

All three authors have contributed to all stages of the study and will be responsible for the content and publication of the findings. All authors have contributed to the design of the study, analysis, and interpretation of data drafting and revising the manuscript, and approving the final manuscript. All authors take responsibility for the integrity of the data and the accuracy of the data analysis. There is no other person who meets the criteria for authorship but is not listed. All authors read and approved the final manuscript.

Funding

None.

Role of the funding source

None.

Availability of data and materials

The data used in this study are available from the corresponding author on request.

Ethics approval and consent to participate

Ethical approval for conducting this study was obtained from the Semnan Ethics Committee of (Date: Dec 17, 2019, No: IR.SEMUMS.REC.1398.222), Semnan (Iran). Researchers explained the aim of the study clearly to the participants. Informed consent was obtained voluntarily, as the participants could freely withdraw from the study.

Consent for publication

By submitting this document, the authors declare their consent for the final accepted version of the manuscript to be considered for publication.

References

- Chilcote DR. Intuition: A concept analysis. *Nurs Forum* 2017; 52(1):62-7. doi:10.1111/nuf.12162 PMID:27186848
- Erisman JC, de Sabbata K, Zuiderent-Jerak T, Syurina EV. Navigating complexity of child abuse through intuition and evidence-based guidelines: a mix-methods study among child and youth healthcare practitioners. *BMC Fam Pract* 2020;21(1):157. doi:10.1186/s12875-020-01226-6 PMID:32738894 PMCid:PMC7395977
- Hassani P, Abdi A, Jalali R, Salari N. Concept Analysis on Nursing Intuition. *J Nurs Educ* 2017;6(1):23-32. doi: 10.21859/jne-06014 PMID:30877781
- Campbell L, Angeli EL. Embodied healthcare intuition: A taxonomy of sensory cues used by healthcare providers. *Rhetoric Health Med* 2019;2(4):353-83. doi:10.5744/rhm.2019.1017
- Vanstone M, Monteiro S, Colvin E, Norman G, Sherbino J, Sibbald M, et al. Experienced physician descriptions of intuition in clinical reasoning: a typology. *Diagnosis (Berl)* 2019;6(3):259-68. doi:10.1515/dx-2018-0069 PMID:30877781
- Senanayake T. Intuition in Nursing Practice: Knowledge, Experience, and Clinical Decision Making. Yrkeshögskolan Arcada University of Applied Sciences (Arcada) 2017. Available from: <https://www.theseus.fi/handle/10024/139089>. [last access date: 24 July 2023].
- Aghajani M, Taghadosi M, Mirbagher Ajorpaz N. Intuitive Decision-making by Iranian Nurses of Patients with COVID-19: A Qualitative Study. *J Caring Sci* 2021;11(3):154-62. doi:10.34172/jcs.2022.04 PMID:36247041 PMCid:PMC9526789
- Nibbelink CW, Brewer BB. Decision-making in nursing practice: An integrative literature review. *J Clin Nurs* 2018;27(5-6):917-28. doi:10.1111/jocn.14151 PMID:29098746 PMCid:PMC5867219
- Johansen ML, O'Brien JL. Decision making in nursing practice: a concept analysis. *Nurs Forum* 2016;51(1):40-48. doi:10.1111/nuf.12119 PMID:25639525
- Michael D, Nikolaos B, Antigone M, Anastasios T, Panagiotis K, Georgia K, et al. Clinical Decision Making of Greek Nurses Working in Health Centers, Emergency Rooms, Medi-cal-Surgical Clinics and ICUs. *Ann Clin Med Case Rep* 2021;6(19):1-7. doi:10.47829/ACMCR.2021.61905
- Tahmasebi S, Sabeti F, Hagani H, Mohammadi R. Investigating the relationship between clinical decision making and moral distress of nurses working in pediatric intensive care unit. *Nurs Midwifery J* 2022;20(2):137-46. doi:10.52547/unmf.20.2.137
- Fatemi Y, Bell L. Clinician Gestalt in Managing Pediatric Pneumonia: Can We Predict the Future?. *Pediatrics* 2021;147(5):e2020048637. doi:10.1542/peds.2020-048637 PMID:33903164
- Melin-Johansson C, Palmqvist R, Rönnerberg L. Clinical intuition in the nursing process and decision-making-A mixed-studies review. *J Clin Nurs* 2017;26(23-24):3936-3949. doi:10.1111/jocn.13814 PMID:28329439
- Frady L. Intuition in Nursing: Correlation with Area of Practice and Years of Experience in Registered Nurses in a Rural, Community Hospital. Nursing Theses and Capstone Projects. Gardner-Webb University ProQuest Dissertations Publishing 2017. Available from: https://digitalcommons.gardner-webb.edu/cgi/viewcontent.cgi?article=1273&context=nursing_etd. [Last access date: 14 Jun 2023].
- Smith A. Measuring the use of intuition by registered nurses in clinical practice. *Nurs Stand* 2007;21(47):35-41. doi:10.7748/ns2007.08.21.47.35.c4591 PMID:17824453
- Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;24(2):105-112. doi:10.1016/j.nedt.2003.10.001 PMID:14769454
- Saunders B, Sim J, Kingstone T, Baker S, Waterfield J, Bartlam B, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant* 2018;52(4):1893-1907. doi:10.1007/s11135-017-0574-8 PMID:29937585 PMCid:PMC5993836
- Polit D, Beck C. Essentials of nursing research: Appraising evidence for nursing practice, 9th Edition, Lippincott Williams and Wilkins; 2020.
- Jovic L, Bianchi E, Decouplet S, Loizeau V, Amiot P, Teixeira M. Nurses in France: Between Autonomy and Subordination in Front Line Care. *Glob Qual Nurs Res* 2015;14(2):2333393615584550. doi:10.1177/2333393615584550 PMID:28462308 PMCid:PMC5342282
- Miller EM, Hill PD. Intuition in clinical decision making:

- Differences among practicing nurses. *J Holist Nurs* 2018;36(4): 318-329. doi:10.1177/0898010117725428 PMID:28831858
21. Musavi M. Barriers and facilitators of clinical decision making among nurses. *Quart J Nurs Manag* 2016;4(3):9-17.
 22. Adler I. The medical gap: intuition in medicine. *Med Health Care Philos* 2022;25(3):361-369. doi:10.1007/s11019-022-10081-4 PMID:35445916
 23. Pétervári J, Osman M, Bhattacharya J. The role of intuition in the generation and evaluation stages of creativity. *Front Psychol* 2016; 20(7):1420. doi:10.3389/fpsyg.2016.01420 PMID:27703439 PMCid:PMC5028408
 24. Hurteau M, Rahmanian J, Houle S, Marchand MP. The role of intuition in evaluative judgment and decision. *Am J Eval* 2020; 41 (3):326-338. doi:10.1177/1098214020908211
 25. Price A, Zulkosky K, White K, Pretz J. Accuracy of intuition in clinical decision-making among novice clinicians. *J Adv Nurs* 2017;73(5):1147-1157. doi:10.1111/jan.13202 PMID:27862180
 26. Kanda K, Blythe S, Grace R, Elcombe E, Rodgers K, Kemp L. 'Everything's adaptable': A qualitative study of how nurses make decisions in sustained home-visiting care with mothers and children experiencing adversity. *J Adv Nurs* 2023;79(12):4568-4579. doi:10.1111/jan.15736 PMID:37314007
 27. Ruzsa G, Szeverenyi C, Varga K. Person-and job-specific factors of intuitive decision-making in clinical practice: results of a sample survey among Hungarian physicians and nurses. *Health Psychol Behav Med* 2020;8(1):152-84 doi:10.1080/21642850.2020.1741372 PMID:34040866 PMCid:PMC8114373
 28. Van den Brink N, Holbrechts B, Brand PLP, Stolper ECF, Van Royen P. Role of intuitive knowledge in the diagnostic reasoning of hospital specialists: a focus group study. *BMJ Open* 2019; 9 (1): e022724. doi:10.1136/bmjopen-2018-022724 PMID:30696671 PMCid:PMC6352845
 29. Smith CF, Kristensen BM, Andersen RS, Hobbs FR, Ziebland S, Nicholson BD. GPs' use of gut feelings when assessing cancer risk: a qualitative study in UK primary care. *Br J Gen Pract* 2021;71 (706):e356-e63. doi:10.3399/bjgp21X714269 PMID:33753347 PMCid:PMC7997673
 30. Cunha LDM, Pestana-Santos M, Lomba L, Reis Santos M. Uncertainty in post-anaesthesia nursing clinical reasoning: An integrative review in the light of the model of uncertainty in complex health care settings. *J Perioper Nurs* 2022;35(2):e32-e40. doi:10.26550/2209-1092.1182
 31. Farčić N, Barać I, Lovrić R, Pačarić S, Gvozdanović Z, Ilakovac V. The Influence of Self-Concept on Clinical Decision-Making in Nurses and Nursing Students: A Cross-Sectional Study. *Int J Environ Res Public Health* 2020;17(9):3059. doi:10.3390/ijerph17093059 PMID:32354029 PMCid:PMC7246852

How to Cite this Article:

Azizi S, Fakhri-Movahedi A, Ebrahimian A. The contextual factors influencing intuition formation in pediatric nursing settings: A qualitative content analysis. *Nurs Midwifery Stud* 2023;12(4):238-246 doi:10.48307/nms.2023.407178.1228