

Access this article online
Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_1250_22

# Exploring internship nursing students' experiences regarding the effect of supervision model implementation on medication safety: A descriptive qualitative study

Amir Shahzeydi, Sedigheh Farzi<sup>1</sup>, Mohammad Javad Tarrahi<sup>2</sup>, Sima Babaei<sup>1</sup>

Student Research Committee, Isfahan University of Medical Sciences, Isfahan, Iran, <sup>1</sup>Nursing and Midwifery Care Research Centre, Department of Adult Health Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, <sup>2</sup>Department of Epidemiology and Biostatistics, School of Health, Isfahan University of Medical Sciences, Isfahan, Iran

## Address for correspondence:

Dr. Sedigheh Farzi,  
Nursing and Midwifery Care Research Centre,  
Department of Adult Health Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.  
E-mail: Sedighehfarzi@nm.mui.ac.ir

Received: 27-08-2022  
Accepted: 29-09-2022  
Published: 31-08-2023

## Abstract:

**BACKGROUND:** Medication safety is one of the main aspects of safe care in the nursing profession, which leads to increasing patient safety and preventing medication errors. Clinical supervision is an integral part of nursing education that leads to the professional and social development of nursing students. This study was designed with the aim of revealing the experiences of nursing internship students from the implementation of the clinical supervision model on medication safety.

**MATERIALS AND METHODS:** This descriptive qualitative study was done in 2022. The participants were selected from nursing internship students (Last year undergraduate) of Isfahan University of Medical Sciences, Isfahan, Iran. Participants in this study were 15 nursing internship students selected using a purposeful sampling method. Data were collected using in-depth semi-structured interviews. The qualitative content analysis approach was used for data analysis.

**RESULTS:** After analyzing the data, four categories, "promotion medication safety competence and knowledge," "development trust and respect climate," "outcome of feedback," and "role of clinical supervisor," and 10 subcategories were extracted from the participants' experiences.

**CONCLUSION:** The implementation of the clinical supervision model led to an increase in the competence of nursing internship students in medication safety. The students believed that this educational method made them follow the principles of medication safety administration. The feedback provided in the clinical supervision sessions made students think about their clinical activities, understand the reason for their mistakes, and use the reliable nursing resources introduced by the supervisor to improve their performance.

## Keywords:

Clinical supervision, internship, medication errors, nursing, student

## Introduction

Medication safety is one of the main aspects of safe care in the nursing profession, leading to the prevention of medication errors and increased patient safety.<sup>[1]</sup> Medication error is defined as "any preventable event that may cause or lead to inappropriate medication use or patient's harm while the medication is in the control

of the healthcare professional, patient, or consumer."<sup>[2]</sup> These errors lead to an increase in the duration of hospitalization, mistrust toward the healthcare providers, and also an increase in the costs of each patient between 2000 and 2500 dollars.<sup>[3]</sup> Medication errors in the United States (US) lead to the death of at least one person per day and injure approximately 1.3 million people per year.<sup>[4]</sup> On average, every patient

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Shahzeydi A, Farzi S, Tarrahi MJ, Babaei S. Exploring internship nursing students' experiences regarding the effect of supervision model implementation on medication safety: A descriptive qualitative study. J Edu Health Promot 2023;12:266.

in the hospital is exposed to at least one medication error per day.<sup>[5]</sup> According to review studies, the prevalence of medication errors in Middle Eastern countries, including Iran, is 7% to 90%,<sup>[6,7]</sup> while many of these errors are preventable.<sup>[8]</sup>

Medication errors are considered the most important mistakes of nursing students, and according to a systematic review published in 2021, half of the nursing students experience medication errors during their undergraduate years.<sup>[9]</sup> The rate of medication errors among students before entering the internship program is reported to be 26% to 40%.<sup>[10]</sup> The amount of medication errors is higher during the internship course due to greater independence and less supervision by faculty.<sup>[11]</sup> According to the study of Latimer *et al.*<sup>[12]</sup> (2017), undergraduate curricula do not adequately prepare students for safe medication, and students do not have the ability to implement what they have learned in the clinical environment and have recommended the application of new educational methods to close the gap between theory and practice.<sup>[13]</sup>

The clinical supervision model is one of the educational methods in the clinical environment that fills the gap between theory and practice, during which students receive feedback from the supervisor in a friendly environment to realize their shortcomings in their performance and try to resolve them.<sup>[14]</sup> Clinical supervision is an integral part of nursing education that leads to the professional and social development of nursing students, supports them, and reduces their anxiety.<sup>[15]</sup>

Qualitative research provides opportunities for researchers to discover and explain the realities of the clinical environment and to understand more about the many aspects related to education.<sup>[16]</sup> Therefore, this study was designed with the aim of exploring the experiences of internship nursing students from the implementation of the clinical supervision model on medication safety.

## Materials and Methods

### Study design and setting

This descriptive qualitative study was conducted in 2022. This study is part of the thesis of MSc in nursing. In qualitative research with an inductive nature, the researcher generally searches for the meaning of a situation. These studies are less interpretive than other qualitative methods such as phenomenological or grounded theory research.<sup>[17]</sup>

The nursing internship program has been implemented for the first time at Isfahan University of Medical

Sciences, Isfahan, Iran, since 2018. In this program, final-year nursing students, as nursing interns, spend their course of 10 months in different wards of the hospital. The head nurse sets 20 rotating shifts (morning, evening, and night) for the student in coordination with the supervising professors and the nursing interns. A nursing intern is responsible for caring three to four patients independently and under the supervision of the head nurse and ward nurses. Supervising professors perform supervisory visits as scheduled by the faculty during nursing internship students' residences in the hospital.

The clinical supervision model to improve the medication safety of nursing internship students was implemented by the researchers of this study in 2022. The clinical supervision model consists of three stages. In the first and second stages, supervisory sessions are conducted at the bedside (six times in 3 months fortnightly), and in the third stage, the viewpoints of the students on the implementation of the model are examined. In the present study, during interviews with nursing internship students, their experiences of the implementation of clinical supervision sessions on medication safety were explored.

### Study participants and sampling

The participants were selected from nursing internship students (Last year undergraduate), of Isfahan University of Medical Sciences, Isfahan, Iran. The inclusion criteria for nursing internship students included having at least 1 month of experience as an internship student in the clinical setting after clinical supervision model implementation and willingness to participate in the study. Participants were selected using a purposeful sampling method. Sampling was performed with maximum variation in terms of age and gender. Those who did not fully share their experiences were excluded.

### Data collection and technique

After coordinating with the educational manager of the school, contact numbers of the nursing internship student (at least 1 month of experience as an internship student in the clinical setting after clinical supervision model implementation) were obtained. We contacted participants. If they were willing to participate in the study, the interview time and place were arranged at their convenience. Data were collected using in-depth semi-structured interviews. On average, the interviews lasted for 30 to 45 min. All interviews began with a general question to establish a close relationship with participants. An example of an interview question is provided in Table 1. Participant selection and sampling continued until data saturation was reached.

### Data analysis

The qualitative content analysis approach proposed by Graneheim and Lundman was used for data analysis.<sup>[18]</sup> Recorded interviews were transcribed verbatim. Transcribed interviews were read by the researchers several times, and meaning units were extracted. Identified meaning units were condensed, abstracted, and coded. Finally, similar codes were grouped under subcategories, and categories were formed using the inductive process.

### Rigor

Rigor was ensured using the confirmability, credibility, dependability, and transferability criteria.<sup>[19]</sup> To increase confirmability, various research and data analysis methods were provided. To ensure credibility, member check and peer check methods were used. To this end, participants were provided with the extracted codes and results to confirm the consistency between the codes and their experiences. In addition, the resulting codes and categories were presented to colleagues. Dependability was achieved through the participation of more than one researcher in data analysis. Selecting participants with different demographic characteristics enhanced the transferability of the results.

### Ethical considerations

The researcher provided the study subjects with a complete explanation of the study objectives and method. The students were assured that participation/non-participation in the study had no effect on their internship score and that they had the right to withdraw from the study at any stage. Informed oral and written consent was obtained from the participants.

## Results

Participants in this study were 15 nursing internship students. The demographic characteristics are presented in Table 2. After analyzing the data, four categories, "promotion medication safety competence and knowledge," "development trust and respect climate," "outcome of feedback," and "role of clinical supervisor," and 10 subcategories were extracted from the participants' experiences [Table 3].

### Promotion of medication safety competence and knowledge

Medication safety as an indicator of care quality is the measures taken by a healthcare provider to prevent or adjust adverse drug events at the time of medication administration. This category includes two subcategories: "adherence to medication administration rules" and "prevention of medication errors."

A participant stated: *Now, "I act according to the safe medication checklist when administering medication. I follow*

**Table 1: Samples of interview questions**

Questions
Please describe one of the visitor sessions.
How did you feel seeing your supervisor? Please, explain more.
In your opinion, what positive points did these sessions have?? Can you give an example?.
In your opinion, what negative points did these sessions have?? Can you give an example?.

**Table 2: Demographic information**

Participants	Gender	Age range (year)
Nursing Student	Male: 6	21-24
Internship	Famale: 9	

**Table 3: The categories and subcategories**

Categories	Subcategories
Promotion of medication safety competence and knowledge	Adherence to medication administration rules Prevention of medication errors
Development of trust and respect climate	Reinforcement self-esteem Decreased fear, stress, and anxiety
Outcome of feedback	Facilitating formative evaluation Opportunity for students to find best practice Meaningful learning Reflection
Role of clinical supervisor	Be role model Be supportive resource

*the eight right rule. I will check the health record..."(P<sub>3</sub>). Another participant said that "In the visit sessions, the supervisor would discuss drug interactions and side effects with us. This made me search about the patient's medications at the beginning of the shift to be aware of side effects and interactions" (P<sub>4</sub>). Another participant said that "Before these visits, I made a lot of mistakes, for example, the nurse would prepare the medicine and I would inject it, but after these sessions, because it was emphasized on 8 right rule, I stopped doing it"(P<sub>9</sub>).*

The experiences of the participants showed that after the implementation of the clinical supervision model, their medication safety competence improved. So that they followed the principles of medication administration safety. They had performed medication calculations correctly, received enough information about medication errors, and in some cases prevented medication errors from occurring.

### Development of trust and respectful climate

A clinical observer should respect students as learners and trust their motivation and commitment to the profession they seek to enter. This category includes two subcategories: "reinforcement self-esteem" and "decreased fear, stress and anxiety."

A participant stated: *"The clinical supervisor had a good relationship with us and in a friendly educational environment, and if we had any questions, we would raise them without any stress"* (P<sub>7</sub>). Another participant stated: *"I had a very good feeling in the clinical supervision sessions, I felt that someone had come to whom I could ask things that I did not know, and this made me provide care to the patient with confidence"* (P<sub>8</sub>). A participant stated: *"If my voice trembled during the assessment of the patient, the supervisor would talk to me and calm me down, we would come out of the patient's room to stabilize, and the clinical supervisor would continue again"* (P<sub>1</sub>).

The effective and beneficial relationship between educator and student is built on mutual trust and respect. Although both parties are responsible for maintaining this relationship, the educator must initiate it by demonstrating trust and respect for students.

### Outcome of feedback

Feedback is a fundamental aspect of teaching and learning. Feedback on clinical performance is essential for effective student learning in clinical practice. This category includes four subcategories: "formative evaluation" "opportunity for student to finding best practice", "meaningful learning," and "reflection."

A participant stated: *"The clinical supervisor gave me feedback in every session and this made my medication mistakes to a minimum. Before these supervision sessions, I remember that I gave heparin SC instead of IV injection, but the supervisor checked my medication administration and I realized my mistake"* (P<sub>8</sub>). Another participant said: *"Before these supervisory sessions, I did not know that I should check creatinine test before enoxaparin injection because it is excreted by the kidneys and may lead to renal failure. In the same way, for heparin and warfarin, I would check the coagulation tests completely..."* (P<sub>12</sub>). Another participant said that *"during these sessions, I realized my learning problems. I knew what I should do until the next session to help me learn"* (P<sub>7</sub>).

The experiences of the participants revealed that providing feedback from the clinical supervisor led to the identification of the learning problems of students. Continuity between the meetings and training had led them to apply the previously acquired knowledge in clinical practices. In addition, students reflected on their performance and tried to eliminate learning problems and use the best practice.

### Role of clinical supervisor

Clinical educators need to be skilled practitioners as well as effective teachers. Clinical observer requires more than just the development of knowledge and skills of clinical education alongside clinical competence. This category

includes two subcategories: "be role model" and "be supportive resource."

A participant stated: *If we did a procedure wrongly, the supervisor would do it and make us learn the procedure. In some cases, we did not know the reference values of the lab tests and the supervisor was our guide. For further study, he introduced us to the reference* (P<sub>9</sub>). Another participant stated: *"The clinical supervisor was a supporter for us in front of the ward 'staffs and defended our rights, especially when they abused us, for example, when they sent me to the operating room with all the patients, the supervisor solved my problem and after that, I only went to the operating room with the patient under my care if he needed it* (P<sub>9</sub>).

The participants' experiences showed that they viewed the clinical supervisor as a supporter, a person who was well able to solve learning problems and had nursing competence and knowledge. In addition, the clinical supervisor played a role in solving the problems of the students and the ward, such as imposing a high workload, assigning more responsibilities, and abusing students.

## Discussion

This research is the first qualitative study in the field of clinical supervision in medication safety in Iran. The participants' experiences revealed that during the clinical supervision sessions, their medication safety competence increased so that they applied the eight right rules in medication administration and became more sensitive to side effects, allergies, and drug interactions. According to the study of Dehghani *et al.*<sup>[20]</sup> (2016), there were significant changes in students' medication scores after clinical supervision sessions compared to before it. The results of the study by Reid-Searl *et al.*<sup>[21]</sup> (2013) showed that when nursing students are not under supervision, the possibility of medication errors is higher, and training and supervision for students and novice nurses should be done more seriously.

One of the advantages of implementing this model from the student's viewpoint was the feedback that supervisors gave on their performance in each supervisory session. This made students realize their mistakes and refrain from repeating them in the next session. Continuation of these meetings along with feedback had led to an increase in their medication competence. The results of Esfahani *et al.*'s<sup>[22]</sup> study (2016) showed that the feedback given to nurses in cardiac care units (CCU) in clinical supervision sessions led to a reduction in their medication errors when high-risk medications are administered.

Another benefit of clinical supervision was perceived by the participants as the friendly climate provided by the

supervisors. They stated that they viewed the supervisors as a supporter and someone they could ask their questions without any stress. According to a systematic review by Franklin *et al.*<sup>[23]</sup> (2013), the importance of the value of high-quality clinical supervision in the clinical education environment cannot be ignored, because, during these sessions, students are adequately supported and prepared to transfer to new graduate nurses. Clinical supervisors play an essential role in the quality of clinical supervision sessions, and their duty is to teach patience, support students, knowledge, and clinical skills, and also responsibility<sup>[24]</sup> to respect and trust in the relationship between supervisors and supervisees. However, supervision is not always effective<sup>[25]</sup> and poor supervision can lead to negative effects, stress, anxiety, and an unsafe environment for students.<sup>[26]</sup>

The results of the study by Mahasneh *et al.*<sup>[15]</sup> (2020) showed that the behavior of the supervisor in the clinical supervision model is very important in improving the performance of nursing students in such a way that the supervisors who answered their questions with patience led to a reduction in stress and a greater desire to learn and develop skills. The results of studies show that threatening students by the supervisor induce an unpleasant feeling in students. The study of Thyness *et al.*<sup>[27]</sup> (2022) aimed at exploring the experiences of medical students from the clinical supervision model which showed that the participants did not feel comfortable with their supervisor in many situations and did not ask their questions for fear of being called stupid. Therefore, the feeling of mental security is necessary to improve the patient's self-confidence and safety.

### Limitations and recommendation

In this study, participants were selected from the Isfahan University of Medical Sciences with a purposive sampling method, which can limit the generalizability of the results. However, researchers tried to use maximum variation by considering the characteristics of participants regarding age and gender, and a proportional number of participants for qualitative studies were used. It is suggested that nursing professors use the clinical supervision model to improve clinical education in pediatrics and intensive care units.

### Conclusion

The results showed that the implementation of the clinical supervision model led to an increase in the competence of nursing internship students in medication safety. The students believed that this educational method made them follow the principles of medication safety administration. The implementation of the model made it possible to avoid many possible medication errors by students and nurses, to perform medication

calculations more accurately, to pay more attention to drug side effects, to check laboratory values, and to provide the necessary training to patients. Also, the feedback provided in the clinical supervision sessions made students think about their clinical activities, understand the reason for their mistakes, and use the reliable nursing resources introduced by the supervisor to improve their performance.

### Acknowledgement and ethical-moral code

The study was approved by the ethics committee of Isfahan University of Medical Sciences (IR.MUI.NUREMA.REC.1400.124). The researchers would like to express their gratitude to the Vice Chancellor for Research of Isfahan University of Medical Sciences for the financial support of this study (project number: 3400478) and to all participants in this study.

### Financial support and sponsorship

This study was funded by Vice Chancellor for Research and Technology of Isfahan University of Medical Sciences, Isfahan, Iran. Dr Sedigheh Farzi (corresponding author) received grant from the vice Chancellor for Research and Technology of Isfahan University of Medical Sciences, Isfahan, Iran (approval code: 3400478).

### Conflicts of interest

There are no conflicts of interest.

### References

1. Kantilal K, Auyeung V, Whittlesea C, Osborne A. Medication safety climate questionnaire: Development and psychometric analysis. *J Health Sci* 2015;3:1-10.
2. Isaacs AN, Ch'ng K, Delhiwale N, Taylor K, Kent B, Raymond A. Hospital medication errors: A cross-sectional study. *Int Jr Qual Health Care* 2021;33:1-18.
3. Cheragi MA, Manoocheri H, Mohammadnejad E, Ehsani SR. Types and causes of medication errors from nurse's viewpoint. *Iran J Nurs Midwifery Res* 2013;18:228-31.
4. Schroers G, Ross JG, Moriarty H. Nurses' perceived causes of medication administration errors: A qualitative systematic review. *Joint Comm J Qual Patient Saf* 2021;47:38-53.
5. Choo J, Hutchinson A, Bucknall T. Nurses' role in medication safety. *J Nurs Manag* 2010;18:853-61.
6. Vaziri S, Fakouri F, Mirzaei M, Afsharian M, Azizi M, Arab-Zozani M. Prevalence of medical errors in Iran: A systematic review and meta-analysis. *BMC Health Serv Res* 2019;19:622.
7. Alsulami Z, Conroy S, Choonara I. Medication errors in the Middle East countries: A systematic review of the literature. *Eur J Clin Pharmacol* 2013;69:995-1008.
8. Najafi H, Farzi S, Tarrahi MJ, Babaei S. Assessment of medication administration of nurses in medical cardiac wards and its relationship with some demographic characteristics: An observational study. *J Educ Health Promot* 2022;11:190.
9. Dehvan F, Dehkordi AH, Gheshlagh RG, Kurdi A. The prevalence of medication errors among nursing students: A systematic and meta-analysis study. *Int J Prev Med* 2021;12:21.
10. Simonsen BO, Daehlin GK, Johansen I, Farup PG. Differences in medication knowledge and risk of errors between graduating

- nursing students and working registered nurses: Comparative study. *BMC Health Serv Res* 2014;14:580.
11. Khalili Z, Shamsizadeh M, Fallahinia GH, Tohidi S, Ali-Mohammadi N, Tapak L. The types and causes of medication error and barriers in reporting it in internship nursing students in hamadan nursing midwifery faculty. *Pajouhan Sci J* 2019;17:16-25.
  12. Latimer S, Hewitt J, Stanbrough R, McAndrew R. Reducing medication errors: Teaching strategies that increase nursing students' awareness of medication errors and their prevention. *Nurse Educ Today* 2017;52:7-9.
  13. Schroers G, Ross JG, Moriarty H. Medication administration errors made among undergraduate nursing students: A need for change in teaching methods. *J Prof Nurs* 2022;42:26-33.
  14. Sellberg M, Skavberg Roaldsen K, Nygren-Bonnier M, Halvarsson A. Clinical supervisors' experience of giving feedback to students during clinical integrated learning. *Physiother Theory Pract* 2022;38:122-31.
  15. Mahasneh D, Shoaqirat N, Al Hadid L, Alja'afreh MA, Shosha GMA. Nursing students' experience of clinical supervision and contributing factors in Jordan. *Nurse Educ Today* 2020;92:104515.
  16. Majid U, Vanstone M. Appraising qualitative research for evidence syntheses: A compendium of quality appraisal tools. *Qual Health Res* 2018;28:2115-31.
  17. Polit DF, Beck CT. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. Lippincott Williams and Wilkins; 2020.
  18. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;24:105-12.
  19. Guba EG. Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ* 1981;29:75-91.
  20. Dehghani M, Ghanavati S, Soltan B, Aghakhani N, Haghpanah S. Impact of clinical supervision on field training of nursing students at Urmia University of Medical Sciences. *J Adv Med Educ Prof* 2016;4:179-8.
  21. Reid-Searl K, Happell B, Burke KJ, Gaskin CJ. Nursing students and the supervision of medication administration. *Collegian* 2013;20:109-14.
  22. Esfahani AK, Varzaneh FR, Changiz T. The effect of clinical supervision model on high alert medication safety in intensive care units nurses. *Iran J Nurs Midwifery Res* 2016;21:482-6.
  23. Franklin N. Clinical supervision in undergraduate nursing students: A review of the literature. *E-Journal of Business Education and Scholarship of Teaching* 2013;7:34-42.
  24. Honkavuo L. Nursing students' perspective on a caring relationship in clinical supervision. *Nurs Ethics* 2020;27:1225-37.
  25. Mayton H. *Being your authentic self: An Exploration of the Relationship between Authenticity and Self-Efficacy in Counselor Trainees: The University of North Carolina at Greensboro*; 2018.
  26. Wong LC, Wong PT, Ishiyama FI. What helps and what hinders in cross-cultural clinical supervision: A critical incident study. *Couns Psychol* 2013;41:66-85.
  27. Thyness C, Steinsbekk A, Grimstad H. Learning from clinical supervision—A qualitative study of undergraduate medical students' experiences. *Med Educ Online* 2022;27:2048514.