

Strategies to Bridge the Theory-Practice Gap in Nursing Education in Iran: A Participatory Action Research

Abstract

Background: Nursing is a scientific profession that focuses on the art of care. However, its theory-practice gap has led to problems in teaching nursing students. Therefore, this paper aims to present the effects of the implementation of theory-practice gap strategies in training nursing students in the emergency department. **Materials and Methods:** This study included the implementation and reflection phases of participatory action research in both the School of Nursing and Midwifery of the Isfahan University of Medical Sciences, Iran, and the emergency ward of Alzahra Educational Hospital, Iran, from 2016 to 2019. First, 10 strategies were implemented with the help of stakeholders. In the reflection phase, 15 semi-structured, in-depth interviews, focus groups, observations, and field notes were analyzed using the conventional content analysis approach. **Results:** The data were obtained from 15 participants, most of whom were women. Data analysis revealed three themes and seven main categories, including leaving the comfort zone (understanding the necessity for changes, individual and organizational perception, and response to change), bringing about change (strengthening of patterns and preparation of processes), and unstable deployment of change (perceived promotion and planning to reinforce the change). **Conclusions:** Using participatory action research to reduce the theory-practice gap in nursing education is of grave importance. During the change process, stakeholders defined new educational processes or reinforced the previous applicable patterns. Also, they started to plan for more control over educational processes as well as considering new promotions. This is valuable knowledge for use in bridging the theory-practice gap in nursing education.

Keywords: Education, emergency nursing, professional-practice gaps, qualitative research

Introduction

Nursing plays an important role in developing successful health systems, as it constitutes the largest number of service providers.^[1] However, this profession encounters a challenge called the theory-practice gap that has not been solved thus far,^[2] and refers to the difference between the training provided in classrooms and what nursing students experience in clinical settings.^[3] A literature review shows that professional-practice gaps confuse students about their roles and functions,^[4] and create pressure and stress on graduates,^[1] thus resulting in decreased motivation of students and nurses, negative effects on professional identity,^[5] and reduced professionalism.^[6]

In Iran, some researchers have pointed out the existence of the gap. Little flexibility in nursing educational programs, relying

on medical knowledge instead of specific nursing education, a lack of effective interaction between care institutions and colleges, an imbalance between theoretical and practical studies, a lack of attention to the development of the nursing process, and the implementation of the routine-based process rather than paying attention to evidence-based nursing are accounted as the reasons behind this gap.^[7-12] In the past, although some researchers considered the existence of this gap as a natural phenomenon,^[13] various solutions were recommended for such a challenge. For example, students' knowledge of clinical environments,^[14] applying programs to facilitate students' transition from colleges to clinical settings,^[1] re-examining current educational processes and trying to find ways for the promotion of clinical learning by educators,^[6,15,16] further monitoring of clinical coaches and conducting accurate

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Access this article online

Website: <https://journals.iww.com/jnmr>

DOI: 10.4103/ijnmr.ijnmr_250_22

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How to cite this article: Alimohammadi N, Irajpour A, Haghani F, Safazadeh S. Strategies to bridge the theory-practice gap in nursing education in Iran: A participatory action research. Iran J Nurs Midwifery Res 2024;29:678-84.

Submitted: 12-Aug-2022. Revised: 06-Jun-2024.

Accepted: 08-Jun-2024. Published: 20-Nov-2024.

assessments,^[15] sharing of experiences and cooperation between academic and clinical environments, and improving evidence-based performance^[17,18] are proposed to reduce this gap.

Clinical practices are an essential element of learning for nursing students, as they enable the application of theoretical knowledge in a real-world environment.^[19] The emergency ward is a highly comprehensive department; it not only incorporates various disciplines but also admits acute, critical, and severe patients at the same time.^[20] It also poses a challenge for students and teachers, which can negatively influence the students' experiences.^[19] The experience of acute situations and the integration of theory and practice are pivotal in acquiring skills to provide appropriate care in the emergency ward.^[21] From an educational perspective, identification of the problems and challenges of nursing education and their timely correction facilitate the training process and improve its quality.^[22] As mentioned previously, the nursing profession consists of theories and paradigms, and the harmony of theories with nursing function tends to reflect the evolution of the paradigm shift in nursing and supports professional maturity.^[23] Therefore, this paper aims to present the effects of the implementation of theory-practice gap strategies in training nursing students using the participatory action research method in the emergency department.

Materials and Methods

This qualitative study was based on the implementation and reflection phases of an action research study from 2016 to 2019. Participatory action research is a qualitative research methodology applied to resolve problems or promote a situation.^[24] Alzahra Educational Hospital's emergency department served as the province's largest emergency department with 90 active beds during the study, 128 nurses, 18 nurse assistants, two operating room nurses, and two anesthetist technicians. According to the aim of this study, 15 participants were selected from among professors and one PhD student who was the assistant of professors, nursing internships, and registered nurses and managers of both the hospital and the school of nursing and midwifery. Purposeful sampling was used with maximum variation in age, gender, and work experience. Having at least a bachelor's degree and one year of work experience in the emergency department for nurses, being in the last semester for nursing students, working in the critical care nursing department as a professor with more than one year of experience, and the willingness to participate in the study were among the inclusion criteria. If participants withdrew from the study, left the emergency ward, or dropped out, they would be excluded from this study.

In the planning phase of this study, participants' needs and action research fields were investigated through 45 hours of observation and 18 semi-structured interviews. Then, 69 strategies to reduce the theory-practice gap

were presented to the focus groups and prioritized on a nine-point Likert scale. Finally, 10 solutions were determined by stakeholders to be conducted, evaluated, and assessed in the implementation and reflection phases: Teaching emergency instructors how to teach clinically and how to evaluate, holding grand rounds to perform the nursing process, placing emphasis on set goals of training, and professional roles of nurses arranging an induction day, to familiarize students with the usage of equipment on the first day of the emergency internship course, modification of the course description and arrangement of a daily lesson plan by instructors, revising students' portfolio to meet the goals of the emergency department, managing effective re-training courses for nurses to promote their general and professional competence, updating the knowledge of both academic members and nurses about new devices, holding regular effective performance meetings with professors and clinical colleagues to share experiences, presence of a registered nurse on shifts without a professor to evaluate nursing students.

After the development of strategies to decrease the professional practice gap in the training of nursing students, a number of sessions were held with the participation of stakeholders to obtain their ideas about how to implement these strategies to achieve the determined goal. The interventions made based on the prescribed strategies are listed in Table 1. At the end of the implementation of the solutions, two groups of five nursing students came to the emergency ward to undergo their nursing training internships for one month. According to a schedule and a daily syllabus, an attempt was made to discuss emergency situations and emergency care with students according to the clinical situations they faced with by their clinical instructor and clinical nurse experts. At the end of each day, the clinical instructors asked the students and nurses to write down their reflections and deliver them to the research team.

To evaluate the strategies implemented to reduce the theory-practice gap in training emergency nursing interns, the reflection phase was carried out. During five months, 15 semi-structured interviews were conducted with 10 women and five men with an average time of 45 minutes. The conventional content analysis approach was used to analyze data. Observations, the researchers' and participants' reflections, and field notes in this respect like interview texts were transcribed. These data were read repeatedly by researchers to achieve immersion and obtain a sense of the whole picture. After open coding, similar codes were placed in the same categories, which led to the formation of the subcategories, main categories, and themes. To ensure rigor, colleagues experienced in qualitative research were asked to control the research protocol, the participants were carefully described, supplementary comments were heard from the experienced educational nurses, the participants were diversely chosen, the transcribed interviews were

Table 1: Strategies to reduce the theory-practice gap

Strategies to reduce the theory-practice gap	Description of each strategies
Preparation of a clinical training guide for the emergency unit	The clinical training guide was prepared for faculty members and nurses in the emergency ward that provided the theoretical foundation for emergency nurses to learn clinical training knowledge to effectively communicate with students
Preparation of a specialized portfolio for nursing internships in the emergency unit	The research team designed a portfolio of clinical performance for the intensive care nursing course. This paper portfolio was designed to assess students' competencies in the three main fields of general, fundamental, and specific skills.
Modifying the syllabus of the emergency nursing internship	Researchers modified the new syllabus so that it had a table consisting of headings and offered activities for an apprenticeship on certain days, such as familiarity with an emergency ward, understanding the cardiopulmonary resuscitation process, and learning emergency nursing care in common diseases.
Holding an educational course to increase the number of clinical nurse experts in the emergency ward	A group of 10 active and motivated emergency nurses had an eight-day course where they developed their teaching and learning skills such as communication with students, physical assessment, nursing documentation, the fundamentals of clinical education, and the management of patients in critical situations
Organizing different meetings in the study settings	To create a common understanding of ongoing actions, the research team tried to hold several meetings at different levels, such as inside the department of critical care nursing, as well as with the faculty members, the clinical nurse experts. The aim of these meetings was to enhance the collaboration between academic and clinical settings.
Conducting different in-service training courses for emergency nurses	The emergency nurses need to know how to work with direct current cardioversion-defibrillation, monitor, and infusion pump, familiarization with pharmaceutical calculation, and how to care for catheters. These in-service training priorities were matched with the training needs of nurses and students in the planning phase, and they received face-to-face education in small groups of typically two to three members over nine months.
Holding effective continuous education for emergency nurses	To conduct general and specialized classes for nurses in collaboration with the educational supervisors, the department of nursing and midwifery, the nursing organization, and the continuous retraining center, programs dedicated to emergency nurses were held to enhance their scientific and practical capabilities in providing care to patients.

shown to the participants, the comments of the committee members were heard, meetings were held with academic and clinical members, and the researchers established prolonged and varied engagement with each set. The researchers tried to describe the data collection process and data analysis methodology. Furthermore, any additional relevant resources such as documents from the emergency ward and field notes were kept for future reference, and confidential materials were kept in secure storage.

Ethical considerations

The implementation of this study was first approved by the Ethics Committee of the Isfahan University of Medical Sciences (IR.MUI.REC Code. 1394.3.679). Moreover, after obtaining verbal permission from the head nurse and clinical instructor of the ward, the research team introduced themselves and explained the research goals to the participants, obtained their informed consent to record their voices, and used codes instead of participants' names in all relevant literature.

Results

The results of this study were summarized first in the implementation phase and then in the reflection phase to reduce the theory-practice gap in emergency nursing education.

In the reflection phase, 15 semi-structured in-depth interviews (average time of 50 minutes), three focus groups (average time of 90 minutes), 50 hours of observations, and field notes were analyzed. The characteristics of the study participants are presented in Table 2.

The data analysis showed that the participants in both academic and clinical settings were faced with or involved in a change process in the reduction of the theory-practice gap that was summarized into 19 subcategories, seven main categories, and three themes. Table 3 provides a summary of the categories and themes.

Leaving the comfort zone

According to the participants, the theme of "leaving the comfort zone" emerged from the three main categories of the perception of the present time, individual and organizational perception, and response to change.

The perception of the present time

The perception of the present time (the reasons for changes) was the first step at the start of the change process. A participant said: "When new nurses or students come to our department, I understand how little my knowledge is. Though my practical skill is higher, they provide care based on scientific rationales more than me" (P 3).

Table 2: Characteristics of the study participants

Variable	Frequency (percentage)
Age (years)	
20–30	4 (27%)
31–40	6 (40%)
41–50	4 (27%)
>51	1 (6%)
Gender	
Female	10 (61%)
Male	5 (39%)
Marital status	
Married	11 (73%)
Single	4 (27%)
Education	
Bachelor student	2 (13%)
Graduated in nursing	7 (47%)
Master's degree	4 (27%)
PhD	2 (13%)
Job experience (years)	
≤5	4 (27%)
6–10	6 (40%)
11–15	4 (27%)
>15	1 (6%)
Employment position	
With no post	2 (13%)
Nurse	8 (54%)
Head nurse	1 (7%)
Supervisor	2 (13%)
Faculty member	2 (13%)

However, another participant, in a state of despair and disappointment about the future of participating in the educational process, said: *“Let us remain in the margins. If you get involved in this stuff (pointing to participation in this training program), you will be the focus of attention and that is not so good”* (P 4).

Individual and organizational perception

Another main category was individual and organizational perception. A participant's opinion of his perception was: *“I feel very good when I get to know my own capabilities and share my experiences with students”* (P 5).

However, another nurse commented on his organization: *“It does not matter that you are trying to do your best, managers just pay attention to those they want”* (P 1).

Response to change

The last main category was the participants' response to this change, which was made up of companionship, resistance, and fear and avoidance. In one of the field notes, the researcher confirmed the existence of companionship between nurses and the heads of emergency departments:

“Today, Ms. M, who is responsible for one of the emergency wards on the evening shift, found out that I am taking the infusion pump test, so she encouraged all of the nurses to participate in the exam. If we had not been a team, nothing would have happened”. However, another participant described her viewpoint as: *“We were good before all of this. It is not necessary to come and teach us. I think all you did was temporary and has ended”* (P 6).

Bringing about change

The next step in the change process was the participant's view on moving to change. This theme was made up of the main categories strengthening of patterns and preparing processes. This means that the participants claimed that to make changes, it is necessary to confirm existing patterns and reform processes.

Strengthening of patterns

In this main category, participants believed that, initially, their own and the organization's potential abilities should be known and the existing capabilities should be reinforced. Finally, the interaction and communication of nurses with each other and the nursing profession with other professions, especially the medical profession, should be strengthened.

One of the nurses explained her experience of teaching a new nurse as an appropriate skill: *“I told Mr. P on the night shift that I was going to teach him, while the infusion pump alarm was buzzing, by telling him what to do if he wants to get rid of it, so he found out that if he does not receive education, he has to stand the sound until morning”* (P 9).

A synergistic combination of inter-professional and intra-professional interaction increased the collaboration between healthcare workers. *“I never imagined that Mrs. A. would be invited to teach medical residents how to calculate drugs,”* one participant said in her comment. *“It is an honor to show that the interaction between doctors and nurses is not confined to the physicians' orders”* (P 13).

Preparation of processes

Participants were required to develop or modify processes needed to facilitate changes such as educational and supervisory processes for students and nurses. *“When a clinical nurse expert checks and confirms every one of my activities, I feel like there is more control over me”*, one student said concerning preparing supervisory processes. She continued: *“Although it has a positive effect, sometimes, I do not like it, it feels as if you are under scrutiny”* (P 14).

Moreover, in one of the faculty meetings about modifying academic processes, one professor said: *“It is better if other emergency nurses participate in our meetings so that we can act according to clinical needs, because they know what happens in the emergency units more than us”* (P 10).

Table 3: Themes, main categories, and subcategories

Themes	Main categories	Subcategories
Leaving the comfort zone	Understanding the reasons for changes	Present perceptions
	The perception of the present time	A vague future
	Individual and organizational perception	Self-perception
	Response to change	Organization recognition
Bringing about change	Strengthening of patterns	Companionship
		Resistance
	Preparation of Processes	Fear and avoidance
		Apparent potential abilities
		Strengthening existing capabilities
Unstable deployment of change	Perceived promotion	Exploiting inter- and intra-professional synergy
		Facilitating educational and regulatory processes
	Planning to reinforce the change	Reinforcing interactive culture
		Providing prerequisites
		Knowledge
		Skill
		Attitude
		Acceptance of the barriers
		Development of education and monitoring processes
		Sharing learned knowledge

Unstable deployment of change

Finally, the participants believed that the implementation of these programs led to changes but still needed to be followed up on and promoted.

Perceived promotion

For the participants, the implementation of solutions led to the promotion of educational and care processes and even professional development. “*Amiodarone was prescribed for one of the patients*”, an emergency nurse said to the researcher during an observation. “*I thought they had made a mistake, before I checked the tag and the number of drops, but, I was surprised to see that the nurse had calculated the second dose carefully*” (P 11).

Planning to reinforce change

Although the participants accepted that their capabilities had been enhanced during care delivery in the emergency ward as nurses or students, they believed that these changes did not persist because of some obstacles. The new changes can become more stable with the development of learning and observational processes and sharing of what the nurses have learned. One supervisor said “*It is true that the nurses learnt to use monitors, but it is more important that they know when to use them. We are still far from clinical judgment and the use of technology for better care*” (P 15).

Discussion

Considering the importance of the reduction of the theory-practice gap in training nursing interns in emergency wards, the research team attempted to implement the strategies approved at the primary phases of the study, and then, reflected on these solutions.

In this study, participants had different perceptions of the change process, its effects, and its continuity. These perceptions varied from one person to the next, including both positive and negative perceptions. In the beginning, they felt that they had moved away from their comfort and safety zone. During this time, they explored the necessity of change, tried to understand themselves as stakeholders and their setting, and then responded to the change. The results of the study showed that the reactions to change were companionship, resistance, fear, and withdrawal. The first reaction of the participants to changes was the effort to understand why it was necessary; undergoing the change process caused them to find their weaknesses. The perception of some nurses included a feeling of stagnation and devaluation. They were also worried about the future of these changes. In contrast, some believed that a sustainable interactive move should be formed to make changes. Marquis and Huston[†] believe that change is never easy, regardless of its type, and any great change is associated with a sense of success and pride as well as loss and stress.^[25]

Moreover, Salam and Alghamdi suggest that, in clinical settings, nursing teachers who play an important role in transforming nurses pay attention to their perceptions, attitudes, and concerns about changes.^[26] Nilsen et al.^[27] found that many changes are met with indifference or passive resistance. Changes are more likely to be accepted if they are initiated by the healthcare professionals themselves and are well-founded and well-communicated.

After leaving the safe zone, participants entered the phase of movement toward the change and, finally, the phase of unstable deployment of the change. At this point, they

first reinforced their own patterns and then prepared the processes required for change. Some nurses announced their readiness to teach or prepare the contents of training materials, and they felt more confident while presenting education to students. Zeb *et al.*^[28] also believe that the participation of nurses in student training programs increases their satisfaction.

Participants at the phase of leaving the safe zone believed that the communication and interaction of the health care providers should be increased and they should trust each other's capabilities to achieve the desired change, which was a reduction in the theory-practice gap. Beatty, by drawing up the roles for stakeholders, believes that the degree of influence and the impact of changes are important. On this basis, in cases where stakeholders have a major influence and impact, the way to communicate with them is participatory.^[29] In this study, students, emergency ward nurses, head nurses from different emergency units, professors, and the managers of the two settings were among the people who needed to be involved in the formal and informal participatory communication methods. Smith believes that at the time of organizational change in health systems, the focus should be on solutions that are effective in the communication process. In his view, building trust in organizational relationships, using up-to-date technologies for communication, and having two-way interactions are necessary to make changes.^[30] It is notable that the common guiding principles in change models highlight supporting change through good communication and collaboration behaviors.^[31]

Participants also corrected the existing processes in both academic and clinical settings and attempted to modify the educational process to reduce the theory-practice gap in a context based on interaction and reciprocal communication. Taquino believes that by applying the Clinical Nurse Leader model as a creative way to enhance cooperation between clinical and academic environments, we can reduce the theory-practice gap and ultimately improve the healthcare system.^[32] Huston also pointed out that to decrease the theory-practice gap, systems can create units under the title of Dedicated Education Units that involve collaboration between nurse educators and clinical institutions to provide effective clinical learning, where nurses contribute to student education as real partners in learning knowledge, skills, and professional roles, and clinical instructors interact with nurses to promote clinical experiences.^[33]

Finally, following the implementation of strategies to reduce the theory-practice gap, the deployment of modified processes occurred in an unstable manner. From the participant's viewpoint, this change process was not yet complete and was like a nascent plant that requires care and protection. That is, although participants (students and nurses) reported changes in their knowledge, skills, and attitudes, these changes required acceptance of the existing problems, greater support to address them, development

of solutions based on feedback received, and eventually sharing the results of this change with other people in the organization. Supporting interaction between participants, highlighting the effects of the change for stakeholders, and focusing on the collaboration of all stakeholders were the contributing factors to the continuity and full establishment of the change in this study. Pomare *et al.*^[34] emphasized that systems' uncertainty about collaboration and support during organizational change was important. Furthermore, Fernandez *et al.*^[35] believe that the implementation map or process evaluation assesses the extent to which implementation strategies fit well within the context, and address identified needs. Markaki *et al.*^[36] developed an Education Quality Improvement Toolkit for schools of nursing and midwifery in Latin American and Caribbean countries; the last step in this model was sustaining change.

The strengths of this study were the familiarity of the research team with the research fields and the close collaboration of stakeholders and their interest in the change; its weaknesses were the arrival of a new group of students, moving between different emergency departments, and leaving the emergency department and going to other departments of the hospital.

Conclusion

Using participatory action research to reduce the theory-practice gap in nursing education in the emergency ward is of grave importance. The change process was initiated with the implementation of 10 selected solutions. Stakeholders experienced leaving their comfort zone, so they tried to define new educational processes or reinforce the previous applicable patterns. To sustain change in academic and clinical settings, students and nurses started to plan for more control of educational processes as well as considering new promotions. This organizational experience is valuable knowledge for use in bridging the theory-practice gap in nursing education.

Acknowledgments

This research was supported by the Isfahan University of Medical Sciences. We thank our colleagues from Al-Zahra Hospital and the Faculty of Nursing and Midwifery who provided insight and expertise that greatly assisted the research.

Financial support and sponsorship

Isfahan University of Medical Sciences

Conflicts of interest

Nothing to declare.

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