

# Clinical Self-Efficacy in Senior Nursing Students: A Mixed- Methods Study

Marzieh Abdal,<sup>1</sup> Negin Masoudi Alavi,<sup>1,\*</sup> and Mohsen Adib-Hajbaghery<sup>1</sup>

<sup>1</sup>Trauma Nursing Research Center, Faculty of Nursing and Midwifery, Kashan University of Medical Sciences, Kashan, IR Iran

\*Corresponding author: Negin Masoudi Alavi, Trauma Nursing Research Center, Faculty of Nursing and Midwifery, Kashan University of Medical Sciences, Kashan, IR Iran. Tel: +98-3155548987, Fax: +98-3155546633, E-mail: masudialavi\_N@kaums.ac.ir

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**Background:** Clinical education has a basic role in nursing education, and effective clinical training establishes a sense of clinical self-efficacy in senior nursing students. Self-efficacy is a key component for acting independently in the nursing profession.

**Objectives:** This study was designed to outline senior nursing students' views about clinical self-efficacy and to determine its level in nursing students.

**Patients and Methods:** A mixed-methods approach, including a quantitative cross-sectional study and qualitative content analysis, was used in this study. Participants were senior nursing students who were in their two last semesters. During the initial quantitative stage, all students in the 7th and 8th semesters of the nursing major were invited to participate. They were asked to complete the Nursing Clinical Self-Efficacy Scale (NCSES) and, during the subsequent qualitative stage, the 14 students in the 7th and 8th semesters were asked to participate in semi-structured interviews.

**Results:** In the quantitative part, 58 students completed the self-efficacy questionnaire; the mean score was  $219.28 \pm 35.8$ , which showed moderate self-efficacy in students. Self-efficacy was different across skills. In the qualitative part, the 355 open codes that were extracted from the interviews were clustered to 12 categories and 3 themes. The main themes included the factors related to self-efficacy, outcomes of self-efficacy, and ways to improve self-efficacy.

**Conclusions:** Students had moderate self-efficacy. Several factors such as environment, nursing colleagues, and clinical educators could influence the creation of clinical self-efficacy in nursing students.

**Keywords:** Self-Efficacy; Education; Nursing Students; Questionnaires; Interview

## 1. Background

Nursing education focuses on training competent students in all dimensions of knowledge, skills, and professional attitude. Clinical education has a basic role in nursing education (1). Approximately 50 percent of the education in nursing is spent in the clinical field (2). The goal of clinical training is to achieve measurable changes in students' competencies in clinical care (3). In clinical training, students find the opportunity to construct their professional identity (2, 3), and to improve their psychomotor skills (4). Hence, providing high-quality experiences is essential in developing competent students. Without these experiences, even the most knowledgeable, well-informed students are confused at the patient's bedside (5). There are some challenges in nursing clinical education, such as the gap between theoretical and practical training and the obscured goals in clinical training (5, 6). A study in Mazandaran/Iran found that more than 50 percent of both students and trainers described the quality of their clinical training courses as weak (2).

Proper training based on clinical realities has better and more stable results (6). Effective clinical training brings about a sense of clinical self-efficacy and self-es-

teem in students. Lim et al. quoted Bandura's definition of self-efficacy as "trust on their own abilities to act efficiently in different situations." Based on this definition, individuals with high self-efficacy can cope and endure better in difficult situations (7). A study showed that people with high self-efficacy were more successful in their job (8). It seems that self-efficacy is an important issue for effective learning, professional development, and behaving independently (9). Self-efficacy is a key component for behaving independently in the nursing profession, and is essential for nursing students (9). McConville believes that self-efficacy comes from four sources: doing duties independently, high-quality experiences, encouragement, and controlling situations (10). The clinical environment, the trainer's capabilities, and personal factors can have important roles in creating self-efficacy (11). Currently, there are few studies on the self-efficacy of nursing students. Shellman et al. showed that students with higher self-efficacy were more successful in providing care to elderly patients (12). Deanerly also found that senior nursing students had higher self-efficacy in providing care for patients

from different cultures (9). These two studies reflect the importance of self-efficacy in nursing students' caring behaviors. The studies about the rate of self-efficacy in nursing students are limited with different results. A study in Iran showed that nursing students rated their clinical competence as slightly above average (13). In another study, Sabety and colleagues' findings were that self-efficacy can have a wide range, from weak to excellent, across different skills (14). Some studies also have examined the factors affecting clinical self-efficacy in nursing students. A weak relationship between faculty and hospitals, lack of staff and training facilities, and unprofessional trainers could adversely influence self-efficacy (11, 15, 16). Clinical self-efficacy in nursing students can also reflect the educational situation of the nursing faculties. However, self-efficacy is a complex concept; research has indicated that a life skills training program did not affect the self-efficacy of nursing students (17). It seems that this important issue needs further investigation.

Clinical self-efficacy is a feeling that come from individual experiences; exploring these experiences needs a qualitative approach. In our literature review, no qualitative studies on this subject were found. Therefore, we decided to investigate nursing students' self-efficacy in both the qualitative and quantitative dimensions at the Kashan university of medical sciences.

## 2. Objectives

This study was undertaken to determine the clinical self-efficacy of students and to verify the clinical skills that students feel competent to perform. Therefore, the study questions involved the following: (1) how the senior nursing students determined their self-efficacy, and (2) the kinds of clinical skills in which they felt competent. We also wanted to know the kinds of experiences in the clinical field that can influence self-efficacy in nursing students, and what are the students' views about clinical self-efficacy. We also investigated the relationship between the self-efficacy of students, sex, and study semester. Subsequently, the experiences of students in the clinical field that could influence their clinical self-efficacy were explored.

## 3. Patients and Methods

### 3.1. Setting

The study setting was the Faculty of Nursing and Midwifery, Kashan university of medical sciences, Iran, which offers three bachelor degree programs (nursing, midwifery, and operating room technology), and three master's degree programs (geriatric nursing, medical surgical nursing, and intensive care nursing). This is a government education institute, which was founded in 1986, and about 370 nursing students in bachelor degrees

are studying in this faculty. In the bachelor degrees, from their 1st semester of education, the students learn about clinical skills. Preclinical teaching is mainly delivered by lectures and students have the opportunity to practice in a skills lab. Students enter the hospital from the 2nd semester under direct supervision of a faculty member. In the 7th and 8th semesters, which are their last two semesters, students have no theoretical courses, and they spend these semesters in different hospital wards and community-based settings. They train under the direct guidance of hospital nurses, and faculty members also supervise the students.

### 3.2. Ethical Considerations

The study was approved by the ethics committee at the Kashan university of medical sciences (p: 92175). The research objectives were explained to the participants and written informed consent was obtained. All personal data were kept confidential. The participants did not write their names in the questionnaire. The participants signed permission to allow the recording of the interviews; the interviews were deleted after the study's completion. The participants could withdraw from the study at any time and they could take their recorded interviews with them. The study protocol was in accordance with the Declaration of Helsinki.

### 3.3. Design

A mixed-methods approach was used in this study in quantitative and qualitative stages. The first part had a cross-sectional study design, which was followed by the qualitative content analysis. The study was conducted from April to July 2014.

Quantitative cross-sectional study: during the initial quantitative stage, all students in the middle of their 7th and 8th semesters (spending 6 weeks in clerkship) of the nursing major were invited to participate in the study. Foreign students were excluded from the study. Participants were asked to complete the nursing clinical self-efficacy scale (NCSES). The NCSES is a list of 24 nursing skills that students can rate their abilities from 1 (I don't think I could do it) to 10 (I am very sure I could do it) for every skill. The nursing clinical skills such as removing stitches, giving enemas and suppositories, collecting wound specimens, cleaning and instilling medication in clients' eyes, and forming a positive working relationship with the charge nurse were among the skills on which students could rate their perceived self-efficacy. The NCSES was translated into Farsi and 12 experts evaluated its qualitative content validity. Experts were asked to read every item carefully and to suggest whether they thought the items were appropriate and whether other items needed to be included in the questionnaire. According to the experts' recommendations, six nursing skills such as charting the vital signs, starting cardiopulmonary resuscitation (CPR), doing oxygen therapy, and putting clients

in proper positions were added to the scale; the questionnaire consisted of 30 items. Participants could receive a score between 1 and 10 for every skill: 1 - 2 was considered low self-efficacy, 3 - 8 was moderate self-efficacy, and 9 - 10 was high self-efficacy. The possible score range for the scale was 30 - 300. In a pilot study involving 10 students, the face validity of the scale was approved and its internal consistency was calculated as 0.95. The students' age, gender, semester of education, average educational score, and experience of working as a nurse during study were also recorded. The hospital wards that the students were attending for their educational programs were obtained from the faculty. Then, the first author went to the wards and explained the study objectives to the students. The students completed the questionnaires in the ward. Some students were busy in the wards and did not have sufficient time. These students completed the scale at a scheduled time in the faculty.

### 3.4. Data Analysis

Quantitative data analysis: data were expressed as means, standard deviations, and frequencies. The statistical package for the social sciences (SPSS) 13.0 was used for data analysis. The students' self-efficacy was reported by mean and standard deviations, and by frequencies of low, moderate, and high self-efficacy for every skill and for the whole questionnaire. The normality of the self-efficacy score was measured using the Kolmogorov-Smirnov test. The difference of the self-efficacy score according to gender, semester of education, and experience working as a nurse were analyzed using student's t-test. The relationship between self-efficacy as a categorical variable and the other variables were analyzed by chi-square test. Multiple regression analysis was used to analyze the variables that express the self-efficacy score. The significance level was set at 5%.

Qualitative content analysis: during the subsequent qualitative stage, 14 students in their 7th and 8th semesters were asked to participate in semi-structured interviews. A purposive sampling strategy was used to choose the study units. The nursing students are a somewhat homogenous group with the same age range and similar experiences. In purposive sampling, students from both sexes and semesters, and students with higher educational average scores were invited to the interviews. All interviews were done in hospital wards or in the Faculty of Nursing, according to the preferences of the participants. A student (first author) conducted the interviews; a student interviewer was chosen instead of a staff member to minimize the chance of students withholding negative opinions and experiences. The interviewer received extensive written and oral instructions. Then, the student interviewer participated in three interviews alongside the instructor as the observer. The first interviews were under the supervision of an expert in qualitative studies. After confidence in the capabilities of the student interviewer was established, the student interviewer continued the interviews, which were undertaken until data saturation.

A semi-structured guide was developed for interviews. The key questions were "Please describe a typical day of your training in hospital"; "How do you evaluate your clinical abilities?" "Please describe your learning experiences in clinical settings"; "How do you evaluate your clinical self-efficacy or your clinical self-esteem?" "Can you work independently in the hospital wards?" "Please explain if you can recall your negative or positive experiences in clinical settings?" "How do you describe self-efficacy in nursing?" "If you are not sure about your ability in a skill, what do you do?" and "Do you have any suggestions for improving clinical self-efficacy in nursing students?"

All interviews were audiotaped and transcribed. Data were analyzed using the qualitative content analysis approach introduced by Elo (18) according to the following steps. All interviews were transcribed. The interviews were read carefully and repeatedly, and key sentences were extracted. The key sentences were changed to initial conceptual codes (open coding).

The initial codes were categorized (primary classification). The main themes were derived by combining related categories (main classification). The conceptual conclusion of information was provided (abstraction). The interview transcripts, and extracted concepts, classifications, and themes were reviewed and evaluated by an expert in qualitative research.

The authors tried to provide sufficient details about the experiences related to clinical self-efficacy. For example, a student mentioned "When I can do clinical skills correctly, I feel I am helpful and this makes me like nursing; I even want to continue my study" We extracted the initial concepts of "feeling helpful," and "tendency to continue the study" from this quote. These concepts were classified as "perceived competency" and then to the main theme of "the outcome of self-efficacy."

The following criteria were used for evaluation of the research validity:

- The participants reviewed the final analysis and the extracted themes and categories and confirmed the credibility of the analysis.
- The authors have spent sufficient time in educational clinical fields and are familiar with clinical settings; therefore, their credibility can be assured.
- An expert in qualitative research method checked the analysis steps throughout the study.
- The data and final analysis were checked with an experienced clinical educator, who was expert in qualitative studies and, the interpretations were approved.

## 4. Results

Quantitative result: 58 students in their 7th and 8th semesters completed the self-efficacy questionnaire. One questionnaire was incomplete and this was excluded from the analysis. A total of 16 students (28%) were male and 41 (72%) were female; 33 (57.9%) were studying in their 7th semester and 24 (42.1%) were in their 8th semester.

There were 16 students (28.1%) who had experience working as a part-time nurse during their studies; 22 students (38.6%) said that they like nursing very much, 30 students (52.6%) had a moderate interest, and 5 (8.8%) students had a low interest. The mean self-efficacy score was  $219.28 \pm 35.8$  (range 141–291), which showed moderate self-efficacy in students. A total of 36 students (63.2%) had moderate self-efficacy and 21 (36.8%) had high self-efficacy, while no student had low self-efficacy. Self-efficacy showed a significant relationship with interest in nursing. The self-efficacy score was not different when considering gender and the semester (Table 1).

Multiple regression analysis also showed that interest in nursing explained 10.8% of self-efficacy ( $R^2 = 0.108$ ,  $\beta = -0.328$ ,  $t = -2.5$ ,  $P\text{-value} = 0.015$ ). The other variables—gender, educational term, work as a nurse, and average educational score did not make a meaningful model with self-efficacy. In the 30 skills that were studied, the students had the highest confidence in taking a client's electrocardiogram (ECG) (87.4%), charting vital signs (73.2%), and giving a client drugs by injection (70.2%). The lowest self-efficacy was in assisting with operations (10.5%), attending to a body after death (10.5%), and giving a client an enema or suppositories (12.3%) (Table 2).

Qualitative result: fourteen students participated in this stage of the study; 7 students were in their 8th semester and 2 students were male. The interview duration was 35 - 55 minutes. A total of 355 open codes were extracted from interviews; these were clustered to 12 categories and 3 themes (Box 1).

#### 4.1. The Factors Related to Self-Efficacy

When students enter the educational field, the nursing trainers play an important role in creating self-efficacy in students. Therefore, it is expected that nursing trainers be competent in both the theoretical and technical aspects. Students gain many skills by watching what the trainers do, and this helps them to gain self-efficacy.

"Whatever I know about wound dressing, I owe to Mr [...]. He has a bad temper and sometimes he even cries over us (with laugh) but even this helped us to learn what is right and what is wrong. It was really helpful. Now I am confident that I can manage wounds." (7th semester students). Students said that they need to receive confidence and encouragement from the trainers, and that this will help them to achieve clinical self-esteem.

"I had a good experience with one of the trainers. It was my first clinical course in the hospital, I had injected drugs to the manikin and I really liked to do it in the hospital, but I had anxiety and, as I see it, all the students had this anxiety in the hospital. She was our first trainer and told us, you have practiced it before and here it is not very different, you should not say that I don't know this or I can't do that. She gave us the injection orders and then followed us and she insisted that in front of the patient we should not show that this is our first time. Most of the students did the injections correctly and I learned that I should not be frightened of the work." (8th semester student).

**Table 1.** The Relationship of Self-Efficacy and Other Variables

Variables	Self-Efficacy <sup>a</sup>		Values <sup>b</sup>	P Value
	Moderate	High		
<b>Sex</b>				0.476
Male	11 (68.8)	5 (31.2)	$213.8 \pm 40.8$	
Female	25 (61)	16 (39)	$221.4 \pm 34$	
<b>Semester of education</b>				0.106
7th	23 (69.7)	10 (30.3)	$212.7 \pm 23.7$	
8th	13 (54.2)	11 (45.8)	$228.3 \pm 36$	
<b>Working as a nurse</b>				0.225
Yes	10 (62.5)	6 (37.5)	$228.5 \pm 37$	
No	26 (63.4)	15 (36.6)	$215.6 \pm 35.1$	
<b>Interest in nursing</b>				0.041 <sup>c</sup>
High	10 (45.5)	12 (54.5)	$231 \pm 34$	
Moderate	21 (70)	9 (30)	$215 \pm 35$	
Low	5 (100)	0	$193.6 \pm 33.4$	

<sup>a</sup> The number in parentheses represents the percentage.

<sup>b</sup> Data are presented as mean  $\pm$  SD.

<sup>c</sup> P value < 0.05.

**Table 2.** The Questionnaire and the Percentage of Questions Answered<sup>a</sup>

Number	Items	I Am Confident of My Skills (9 - 10) COUNT
1	Taking client's ECG	51 (87.4)
2	Giving a client drugs by injection as ordered	40 (70.2)
3	Charting patients' vital signs	44 (73.2)
4	Giving prescribed tablets at the correct times and supervising the drug trolley	38 (66.7)
5	Cleaning and instilling medication in a client's eyes, ears, or nose	35 (61.4)
6	Dressing wound correctly	34 (59.6)
7	Forming a strong interpersonal relationship with patients that enable them to seek help without embarrassment	32 (56.4)
8	Forming a positive working relationship with the charge nurse and other nursing staff	31 (56.2)
9	Removing a client's stitches	32 (54.4)
10	Explaining treatment to the clients	31 (52.6)
11	Asking for instructions or for help with any procedures not understood	30 (52.6)
12	Preparing and performing intravenous infusion	27 (47.4)
13	Reporting patients' condition to a physician	26 (45.6)
14	Establishing and maintaining intravenous catheters	25 (43.9)
15	Coping with new environments following ward changes	21 (36.9)
16	Injecting drugs or vaccines to neonates and children	21 (36.9)
17	Placing patients in an appropriate position	21 (36.8)
18	Assisting the anesthetist in inducing an anesthetic	19 (33.3)
19	Teaching a child how to self-inject insulin	18 (31.6)
20	Applying oxygen therapy	18 (31.5)
21	Discussing problems with a client and helping in finding solutions	15 (26.3)
22	Collecting a wound specimen for culture	12 (21)
23	Doing proper techniques of isolation (barrier nurse)	14 (24.6)
24	Establishing urinary catheters	10 (17.6)
25	Splinting the limbs	10 (17.6)
26	Performing CPR	8 (14.1)
27	Comforting a distressed client	8 (14.1)
28	Giving a client an enema or suppositories	7 (12.3)
29	Managing a body after death	6 (10.5)
30	Assisting a surgeon at an operation (handing instruments to a surgeon)	6 (10.5)

<sup>a</sup> The values are presented as No. (%).

**Box 1.** Main Theme and Categories

Main Themes	Categories
	Mentors and educational space
	Training and support of nurses
The factors related to self-efficacy	Amenities
	Factors related to the patient and family
	The individual experiences of the students
	Autonomy at work
The outcomes of self-efficacy	Increased confidence
	Intention to continue studying at the higher levels
	Solutions for school education
The ways to improve self-efficacy	Strategies related to training in hospital
	Guidelines for educators
	Providing frequent experiences

However, there were some trainers that ruined the self-esteem of the students: "One of our trainers, I don't want to mention his name. He used to ruin us in front of the others and in front of the patients. Patients looked at us like we want to harm them. I preferred not to do anything. I lost all my self-confidence there and thought that I am doing everything wrong." (8th semester student).

The time interval between the skills lab classes and clinical courses was one of the factors that could influence the clinical skills: "In first semester, we practiced in the skills lab; in the second semester, after 5 months, we went to the hospital we had almost forgotten everything, I think it is better that we continue to train in the skills lab simultaneously with our clinical courses. It can help us to gain better skills and gain self-confidence in doing clinical skills." (8th semester student).

Students also complained that the number of students was high in the skill labs and that they did not have time to practice well. Students believed that the theoretical courses they had passed did not cover the different situations that they may encounter in hospital wards. Pharmacology, medical equipment in intensive care units, and teamwork were the areas in which students thought they had little knowledge.

The clinical nurses also have a special role in the students' self-efficacy. Students learn so many things from staff nurses in hospitals. Students expect to see evidence-based practice in hospital wards that is compatible with what they have learned in their classes. Sometimes such a thing does not happen and students remain uncertain about what is right and what is wrong.

"I put a thermometer in the patient's mouth and stayed some minutes; nurses were complaining that I am slow. With the drugs also, I tried to give drugs at the right time according to the prescription but nurses give drugs much sooner; for example, the time of the drug is for 6:00 p.m. but they give it at 4:00 p.m., and they say they have other things to do." (8th semester student).

Trusting students has a great role to play in creating self-efficacy: "In the internal ward, nurses let me write the nursing report in the chart of the patients. I felt that they have accepted me as a colleague and I felt very good." (7th semester student).

To the students, having a place to rest, sit a while, and drink coffee mean that they are welcome and that they feel respected and valued. However, the students expressed that they do not receive the basic services that they deserve: "They don't provide any facilities for us; we don't have any place to sit down for a while. We should rest in the patients' rooms. It is shameful." (7th semester student). Over time, if the students do not receive basic facilities, they may lose their self-esteem, especially when they compare their situation with other students, such as interns and residents.

Patients also have an influential role in creating self-efficacy. The experiences related to the patients could be seen in the interviews: "It was a morning shift and I was in the

men's surgical ward. There was a patient in the isolation room; I used to care for him for several days. I even felt close to his family. The nurse told me to draw a blood sample. I went to the patient and saw that his veins were not good. I used a scalp vein to collect the blood; after hardly finding a vein, I poured about 10 cc of blood. I was very sad and felt shameful. The patient said it is okay, these things happen. He even told me I am like her daughter and I can draw blood again. The patients gave me lots of confidence and I learned that I should be more careful. It turned out to be a very positive experience for me." (8th semester student).

Individual experiences are also important. The experiences of doing duties successfully are crucial in self-efficacy. In Iran, most students choose their major according to the score they get in the university entrance exam. Many students that were interviewed had entered nursing without any interest or even with some misconceptions. "From the beginning, I didn't like nursing and I had a negative feeling for nursing. In the city I live in, people don't care about the nursing profession and see it as an inferior career. I chose nursing because I thought it had a very good salary." (8th semester student). Entering nursing without interest in it may limit the motivations for learning and gaining skills.

#### 4.2. The Outcomes of Self-Efficacy

This theme consisted of autonomy at work, increased confidence, and intention to continue studying at the higher levels. When self-efficacy increases, the students' tendency to care for patients and in gaining autonomy in clinical fields also increases. "I try to be helpful in wards; I involve myself in nursing care. I don't want to stand aside and do nothing. I try to give drugs and monitor patients and do any other thing that is related to my profession." (8th semester student).

Students with acceptable self-efficacy felt that they were competent, despite previously comparing themselves with staff nurses: "We had a patient with difficult veins to find. The nurse that I was working with couldn't find her vein for the IV therapy; then I did it right this was a very good feeling and increased my confidence." (8th semester student).

Another result of self-efficacy is the ability to work independently. "I visit patients. I talk to them. I can make good relationships with patients without the help of trainers or other nurses. I can do nursing care alone, I am sure of that" (7th semester student).

Self-efficacy could increase interest in nursing and encourages the tendency to continue it in their master's and PhD programs: "I like my job more and more; I think I am helpful. I want to continue it in a master's degree or even doctorate."

#### 4.3. The Ways to Improve Self-Efficacy

Students gave some suggestions about class education, hospital instructions, and the educators. They had some suggestions about improving clinical self-efficacy. They

believed that simulation education needs improvement. Using a log book in clinical fields was another suggestion: "I, as a student, want to know what are the minimum experiences that I should have during my education; for example, how many intravenous lines I should have done." (7th semester student). Using senior students for education could have benefits for both types of students. "The faculty trainers don't spend time on our education and their expectations are high, but the senior students are more eager to teach us something they know and understand us better, and we are more comfortable with them. They help us to improve our self-esteem." (7th semester student).

Participants said that they prefer to be under the guidance of one nurse in the clinical courses. They believed that the trainers who had extensive experience as a staff nurse were much better in the clinical fields. "One of my shifts, I was alongside a very kind nurse; we checked the patients together and changed the IV lines and serums. Then, we controlled the vital signs and charted them. Some patients needed insulin injections. It was a very good working day for me. I learned so many things in a very friendly manner. I felt like a nurse."

Repeating skills was the key factor in gaining self-efficacy in the clinical field. Some students believed that spending more time in emergency wards or intensive units might be very helpful for them. Giving them more information about legal issues was another request.

## 5. Discussion

In this study, the average score for self-efficacy was 219.28, which showed a medium level of self-efficacy. None of the students reported low self-efficacy. There was no significant relationship between self-efficacy and sex, semester of education, and students' average score. In Sabeti and colleagues' study, 40% of students reported that their skills were at an intermediate level (14). Students had high self-efficacy in undertaking ECG and low self-efficacy in helping surgeons; the highest self-efficacy was in taking vital signs, oxygen therapy, and intravenous therapy, while the lowest self-efficacy was in traction skin care, colostomy, and wound care (14). Some researchers have found that many registered nurses do not feel competent and confident in their practice (19, 20). It seems that the students' self-efficacy in this research was acceptable compared to the findings in studies regarding registered nurses.

One study found that self-efficacy was related to nursing students' academic performance in science courses (21). McLaughlin et al. found that nursing students with higher self-efficacy had higher final marks (22). We did not find such a relationship in this study.

Students stated some suggestions for improving self-efficacy during their education. Students must be trained in accordance with particular principles and then have the opportunity to watch, act, and repeat these in a safe

and scientific environment. Nurse educators play an important role in enhancing student self-efficacy for future practice (23, 24). The presence and support of trainers are important in the clinical field and in the development of self-efficacy (25). According to Bandura, role-playing and modeling are two important sources of self-efficacy (26). Clinical educators serve vital roles in the preparation of nursing students. The behaviors of clinical educators influence student perceptions and the learning of appropriate clinical knowledge and skills (27). Preparing nursing educators to implement innovative and active strategies can improve self-efficacy in nursing students (28). Students in current research also mentioned the importance of their trainers' role several times.

Many students mentioned the effect of simulation in learning clinical skills. Skills labs can provide a safe environment for students and they can practice several times without harming patients. This can create confidence and self-efficacy, although it is not enough. Hassani believed that students need opportunities to show their practical capabilities in the clinical field and to believe their professional expertise (25). Practicing nursing skills and applying knowledge in clinical settings can help students to become professional nurses (29).

Using senior students for education has benefits for both types of students. Self-efficacy theory proposes that individuals can learn by watching others, most fruitfully when the observer is similar to the observed (26). One idea proposed by McConville and Lane would be to encourage most integration to occur between students; for example, the students who have recently successfully completed a particular skills course are the most appropriate model of performance for students who are about to start the same education, given that they are similar in age and previous experience (10). As Margolis believed, students realize that "she or he is like me, if she can do it, I can do it either" this can raise self-efficacy (30). Furthermore, Hassani reported that working independently can improve clinical efficacy (25). The students in this research also mentioned this several times.

The nursing profession should perform assigned tasks by having the ability to combine the knowledge, attitudes, values, and skills necessary for professional services (25). This level of competency needs proper and multi-dimensional education. Training in self-efficacy is frequently discussed in education programs; however, it is mentioned less in nursing education. Students' self-efficacy in a clinical environment can provide an insight for students' learning experiences (31). In this research, we tried to focus on this important issue using both quantitative and qualitative perspectives; we also tried to show the current condition and provide some practical recommendations. The findings indicated that nursing students had a medium level of self-efficacy and were very confident in some skills. The qualitative part of our study showed that many factors can influence the creation of self-efficacy in students; among them, the roles

of clinical instructors and clinical nurses are pivotal. Students who have high self-efficacy can then have better care performance.

There were also some study limitations, such as the low number of students in the quantitative part. The students that we interviewed might not be a good example of all nursing students since they were invited from the Kashan University of Medical Sciences; other faculties and educational hospitals might have different ways of providing clinical experiences.

Based on the existing evidence that supports the value of self-efficacy, this issue needs further investigation in different cultures and educational contexts. We suggest that studies about the effects of different educational methods such as micro-skills, mentorship programs, and problem-based learning be undertaken to help improve self-efficacy in nursing students.

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## Authors' Contributions

All authors contributed to the study conception. The first author collected the data in both qualitative and quantitative part. All authors contributed in data analysis. The second author wrote the final draft, the other authors approved it.

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