



## Correlation of Clinical Skills Self-Assessment of Nursing Internship Trainees With Their Teachers' Evaluation

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### ABSTRACT

**Background:** It is believed that self-evaluation can empower students; help them to pick higher goals and to try harder to realize these targets. However, the nursing students' self-evaluation on clinical skills has rarely been studied.

**Objectives:** To investigate the correlation of nursing internship trainees' self-evaluation of clinical skills with their teachers' evaluation.

**Materials and Methods:** A cross-sectional study was conducted on 75 nurse interns of Kashan University of Medical Sciences in 2010. Data obtained using a questionnaire including questions on demographic characteristics as well as 190 items related to 15 categories of nursing skills necessary for caring for different medical, surgical and critically ill patients. The students' self-evaluation score was compared with their mean score of theoretical and clinical courses. The data was analyzed in SPSS 11.5 using t test and correlation coefficient.

**Results:** The overall self-evaluation mean score was at a moderate level. The mean scores the students received from their teachers in theoretical and clinical courses were  $15.12 \pm 1.30$  and  $16.55 \pm 1.56$  respectively. The mean score of the students' self-evaluation in clinical skills was  $396.4 \pm 93.6$ . A significant relationship was observed between the overall self-evaluation mean score and the scores the students received from their teachers in clinical ( $r = 0.78, P = 0.001$ ) and theoretical courses ( $r = 0.51, P = 0.001$ ). A significant difference was observed between self-evaluation scores of students in the seventh and eighth semester. Self-evaluation scores were at a good level in six areas and at a moderate level in nine categories.

**Conclusions:** The students' overall self-assessment score was significantly correlated with scores given by their teachers. The students' self-evaluation scores were at moderate levels in different areas. Self-evaluation may be used as a good method for evaluating students' clinical skills.

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### ► Implication for health policy/practice/research/medical education:

Nurse instructors are encouraged to empower their students to do self-evaluation with the expectation that such an exercise will cause them to aspire and push themselves to achieve higher professional goals.

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## 1. Background

Evaluation of students' technical and clinical skills is important in ensuring the adequacy of educational programs as well as ensuring the trainee's readiness to deliver quality care. Feedback received from students can play a major role in achieving these goals (1, 2). Usually instructors are responsible for the students' evaluation. However, the students' self-evaluation has been emphasized in the last decade (3). Professionals have a responsibility to assess their own competency for practice and thus students should be provided with opportunities to self-assess throughout their academic program in order to develop and refine this ability (4). It is believed that monitoring behavior with self-evaluation checklists can help learners develop meta-cognitive skills, enhance their learning strategies, and assist them in order to becoming independent, confident learners. Self-evaluation can also empower students; help them to pick higher goals and to try harder to realize these goals (3, 5). In a study of teachers' opinions on student self-evaluation, teachers believed that self-evaluation positively affects the students' professional goals, efforts, progress and self-confidence. Self-evaluation also improves the students' judgments regarding their professional future and enhances their learning (6). Al-Kadri et al. have also studied students' self-assessment and reported that the method offers numerous advantages to the learner (7). Few studies have also compared the views of teachers and students in self-evaluation. In a study, Machado et al. compared self, peer and teacher assessment and reported that self-assessment might be reliable but may not be valid in courses with problem-based teaching methods (8). Delaram and Tootoonchi have also compared students' self-assessments of midwifery students to teachers' evaluations in an obstetrics course and reported that no significant difference was observed between the mean score of evaluation by instructors and the mean score of students' self-evaluation (9). In contrast, Atash-Sokhan et al. compared self, peer, and teachers' assessments in the process of midwifery students' clinical skills evaluations and reported a significant difference among three methods of evaluation (10). In Canada and America, self-evaluation is considered as an important factor in the process of professional development of medical and nursing students (5, 11). However, in Iran this practice has largely been ignored. In one of the few studies, Sabeti et al. have assessed senior nursing students' opinion toward their achievement level of clinical skills in Ahvaz Jundishapur University (12). The number of these studies is limited but show that most of nursing students are unhappy with the routine clinical evaluations (9). Some of the studies have also shown that nursing students are lacking in their clinical skills despite the fact that they passed all of their clinical courses (13, 14). Also, few studies have compared the results of nursing students' self-evaluation to evaluation by instructors.

## 2. Objectives

Given the lack of studies in this field and the importance of self-evaluation in assessing the weaknesses in nurse education programs, and its role in helping students overcome educational program weaknesses, this study was conducted in 2010 to compare the Kashan University of Medical Sciences nurse internship students' self-evaluation of clinical skills with their teachers' evaluation.

## 3. Materials and Methods

### 3.1. Context of the Study

Formative (midterm) and summative exams based on the teacher made theoretical tests are popular in the Iran's academic system to evaluate the students' achievement. The students' clinical performances are also assessed based on the clinical instructors' overall subjective judgments about the students. The students do not have a role in the process of evaluation and will usually fail if they receive a score lower 10 or 12 in their theoretical and clinical courses, respectively.

### 3.2. Design and Procedures

A cross-sectional study was conducted on all of the 75 nurse internship students in Kashan University of Medical Sciences in 2010. Subjects were at 7th and 8th semester of their studies. They had passed all their theoretical and practical courses and were in their last year of studying of nursing as nurse interns in medical, surgical, emergency and critical care units. The students' consent to enter the study and their engagement in clinical settings as a nurse intern were selected as criterion.

### 3.3. Instruments

Data collection instruments consisted of a demographic questionnaire (including questions about age, gender, academic semester, the average total score, doing a part time nursing job) and 190 items related to the skills nurses require in general medical-surgical, emergency, critical care and specialty units, from admission to discharge or death of patients. These questions were in 15 domains including assessment and care for patients with common medical and surgical disorders (36 items), caring and education protocols (26 items), medication administration (21 items), monitoring and critical care (14 items), oxygen administration, suctioning and care of the airway (14 items), patient care prior and after diagnostic and therapeutic procedures (13 items), isolation precautions and care for patients with infectious diseases (12 items), sampling and interpretation of common laboratory tests (11 items), using health care facilities and equipment (9 items), wound care (8 items), inserting and care of catheters (7 items), care of patients in traction and casts (7 items), establishment of intravenous lines and fluid replacement therapy (4 items), documentation (4 items)

and communication with patients (4 items). All the skill items were in a four-choice Likert scale and the students answered them as (I never encountered with the case = 0, I only observed the case = 1, I can do the case with supervision/help = 2 or I can do the case independently = 3). The tool was earlier designed and validated for Iranian population by Nasiriani et al. (15). The content validity of the tool was also confirmed by faculty members of Medical Surgical Nursing Department in our nursing faculty prior to the study. Reliability of the tool was also rechecked by calculating Cronbach's alpha (that was 0.84 for the whole tool and .079-0.88 for its subscales). The lowest skill score was zero and the highest was 570. Students who got 100% of the skill score (score = 570) were considered fully skilled. Subsequently every 25% reduction in score was selected to show the cut-off points for a good, moderate, low and poor/no skill. Scores the students received from different courses were obtained from the nursing school and finally their mean scores in theoretical and clinical courses were calculated.

### 3.4. Ethical Considerations

Ethical aspects of this study were approved by the Research Council in the Nursing and Midwifery Faculty of Kashan University of Medical Sciences. All of the subjects were informed about being free to participate in the research and non-disclosure of personal information. They all signed a written informed consent.

### 3.5. Data Analysis

Data analysis was performed using SPSS version 11.5. Descriptive statistics, independent sample t-test and Pearson correlation coefficient were used. A P value less than 0.05 were selected to be significant.

## 4. Results

From the total sample, 64% were female and 50.7% were in the seventh semester. The average age of the subjects was  $22.49 \pm 0.94$  and the mean scores of theoretical and

clinical courses of the students were  $15.12 \pm 1.30$  and  $16.55 \pm 1.56$ , respectively. The mean score of the students' self-evaluation in clinical skills was  $396.4 \pm 93.6$  while the lowest and the highest self-evaluation scores were 181 and 540 respectively. Significant direct correlations were observed between the students' total mean of self-evaluation in clinical skills and the average scores they received in clinical ( $r = 0.78, P = 0.001$ ) and theoretical courses ( $r = 0.51, P = 0.001$ ), respectively. Mean of the self-evaluation score in clinical skills was significantly higher in male students than females (Table 1). A significant difference was also observed between the mean of self-evaluation scores in clinical skills of the students who were in seventh and eighth semesters. However, no significant correlation was observed between the mean of the self-evaluation score in clinical skills and the students' age. Also, no significant difference was observed between the mean of self-evaluation scores in clinical skills of the students with and without part time nursing jobs (Table 1). The lowest mean of self-evaluation scores in clinical skills belonged to the two domains of "using health care facilities and equipment" and "patient care before and after diagnostic and therapeutic procedures" (with 55.6% and 61.3% of the score), respectively. In total, 78.6% and 65.3% of the students evaluated their own clinical skills as moderate to poor in these two domains. The best self-evaluation score belonged to the domain of "establishment of intravenous lines and fluid replacement therapy". More than 98% of the students evaluated themselves as being good to fully skilled in this domain. Overall, the percentage of self-evaluation scores were at the level of good in six domains and in the level of moderate in nine other domains (Table 2).

## 5. Discussion

The present study showed that the students' total mean of self-evaluation in clinical skills was significantly correlated with the scores they received from their instructors in their clinical and theoretical courses. The correlation coefficient was greater in the case of scores of clinical

**Table 1.** The Relationship between the Self-Evaluation Scores and the Students Characteristics

	No. (%)	Self-Evaluation Score, Mean $\pm$ SD	P value
<b>Gender</b>			0.001
Male	27 (36)	456.7 $\pm$ 59.8	
Female	48 (64)	362.5 $\pm$ 92.6	
<b>Educational Semester</b>			0.001
7th	38 (50.7)	356.1 $\pm$ 86.24	
8th	37 (49.3)	437.8 $\pm$ 83.2	
<b>Doing a Part-Time Nursing Job</b>			0.63
Yes	36 (48)	401.8 $\pm$ 93.4	
No	39 (52)	391.4 $\pm$ 94.9	

**Table 2.** Self-Evaluation in Domains of Clinical Skills

Clinical Skills	Levels of Skills					Self-Evaluation Score, Mean $\pm$ SD	Percentage of Score, Mean $\pm$ SD
	Poor, No. (%)	Low, No. (%)	Moderate, No. (%)	Good, No. (%)	Fully skilled, No. (%)		
<b>Assessment and care for patients with medical/surgical disorders</b>	4 (5.3)	30 (40)	23 (30.7)	18 (24)	0	69.0 $\pm$ 24.1	63.9 $\pm$ 22.3
<b>Caring and education protocols</b>	3 (4)	23 (30.7)	31 (41.3)	17 (22.7)	1 (1.3)	49.1 $\pm$ 16.6	63.0 $\pm$ 21.3
<b>Medication administration</b>	1 (1.3)	2 (2.7)	18 (24)	53 (70.7)	1 (1.3)	50.3 $\pm$ 9.7	79.9 $\pm$ 15.4
<b>Monitoring and critical care</b>	1 (1.3)	23 (30.7)	37 (49.3)	14 (18.7)	0	27.0 $\pm$ 7.9	64.4 $\pm$ 19.0
<b>Oxygen administration, suctioning and care of the airway</b>	1 (1.3)	34 (45.3)	31 (41.3)	7 (9.3)	2 (2.7)	29.7 $\pm$ 7.6	70.7 $\pm$ 18.3
<b>Care before and after diagnostic/therapeutic procedures</b>	4 (5.3)	25 (33.3)	20 (26.7)	24 (32)	2 (2.7)	23.9 $\pm$ 8.9	61.3 $\pm$ 22.8
<b>Isolation precautions and care for patients with infectious diseases</b>	9 (12)	20 (26.7)	31 (41.3)	14 (18.7)	1 (1.3)	24.2 $\pm$ 7.4	67.3 $\pm$ 20.7
<b>Sampling and interpretation of laboratory tests</b>	0	2 (2.7)	20 (26.7)	42 (56)	11 (14.7)	27.2 $\pm$ 5.0	82.4 $\pm$ 15.2
<b>Using facilities and equipment</b>	4 (5.3)	27 (36)	28 (37.3)	13 (17.3)	3 (4)	15.0 $\pm$ 6.1	55.6 $\pm$ 22.5
<b>Wound care</b>	0	1 (1.3)	20 (26.7)	45 (60)	9 (12)	20.1 $\pm$ 3.2	83.8 $\pm$ 13.6
<b>Inserting and care of catheters</b>	7 (9.3)	27 (36)	19 (25.4)	15 (20)	7 (9.3)	13.8 $\pm$ 5.4	66.0 $\pm$ 26.0
<b>Care of patients in traction and cast</b>	7 (9.3)	4 (5.3)	11 (14.7)	26 (34.7)	27 (36)	16.5 $\pm$ 5.6	78.9 $\pm$ 26.8
<b>Documentation</b>	5 (6.7)	4 (5.3)	9 (12)	13 (17.3)	44 (58.7)	9.9 $\pm$ 3.2	83.1 $\pm$ 27.0
<b>Communication with patients</b>	13 (17.3)	20 (26.7)	25 (33.3)	7 (9.3)	10 (13.4)	7.7 $\pm$ 3.4	64.2 $\pm$ 28.4
<b>Establishment of IV lines and fluid replacement therapy</b>	0	0	1 (1.3)	14 (18.7)	60 (80)	11.5 $\pm$ 1.0	96.3 $\pm$ 8.5
<b>Total</b>	0	33 (44)	31 (41.3)	11 (14.7)	0	396.4 $\pm$ 93.6	69.5 $\pm$ 16.4

courses. These findings show that self-evaluation can be used as a reliable method for evaluating the students' clinical skills and technical competence. Delaram and Tootoonchi have compared the self- and Teacher-evaluations of midwifery students in obstetric courses and reported that the results of instructors' assessment and that of students were similar (9). Yalcin and Erkal-Ilhan have also assessed the relationship between self-evaluation and academic achievement in nursing and midwife students. A significant relationship was found between academic success and the self-evaluation scores of students (11). The overall evaluation of the students in the present study of their own clinical skills was at moderate level. Despite the benefits of self-evaluation in assessment of the students' clinical skills, few studies have used this method to measure the skills of nursing students. Most of studies that have used this method in Iran have been conducted on nurses and have also reported mixed results. However, Nasiriani et al. in Yazd University have reported that new nursing graduates evaluated their own clinical skills at good to moderate levels (15). In one

of the few studies that used self-evaluation, Sabeti et al. investigated senior nursing students' opinion toward their achievement level of clinical skills and reported that most students evaluated their own clinical skills as excellent and good (12). BeigMoradi and Nazeri have also reported that the students believed they achieved the objectives of the undergraduate nursing curriculum at good to excellent levels (13). The lack of studies on the students' self-evaluation and limited practical application of this method can be attributed to the teachers' distrust in the results of self-evaluation or to their shortcomings in preparing the students for application of this technique. However, differences in the reported results may be caused by the differences in methods and tools or to the levels of the students' clinical achievement in different universities. The students in the present study had the highest self-evaluation scores in the domains of "establishment of IV lines and fluid replacement". More than 70% of the students have also evaluated themselves as good to fully skilled in five domains: documentation, medication administration, wound care, care of patients

in traction, and sampling and interpretation of laboratory tests. It seems that abundance of some technical interventions such as IV catheters insertion helped the students to be more proficient in these areas. On the other hand, low scores in the areas such as patient assessment, patient education, monitoring and critical care, patient care before and after the diagnostic/therapeutic procedures, using facilities and equipments, and communication with patients signals the weakness of the educational system in these important areas. Results of the students' self-evaluation in this study are consistent with some of the previous studies on senior nursing students in other universities in Iran (12, 15). It is believed that monitoring students through self-evaluation can help them improve their learning strategies, select better goals and strive harder to realize them (3, 10). Self-evaluation assists learners to judge for themselves where their strengths and weakness are and what they need to work on next (3). Then, the students' awareness of their weakness in the areas such as communication and patient education shows that they are aware of the importance and sensitivity of such tasks and may encourage them to work harder to overcome these weaknesses. Such findings may also be important for nurse instructors to select their own starting points for revision in objectives and educational content. Results showed that clinical skills self-assessment scores of male students were higher than female ones. This finding is different from the findings of Nasiriani et al. (3, 15). However, one study has reported no significant difference between the levels of clinical skills in male and female students (14). Higher self-evaluation scores of male students is probably because male students tend to engage more in technical skills. Also, higher self-evaluation scores of the students in the eighth semester show that longer terms of participating in clinical settings may have an important role in developing students' clinical skills and their confidence in expressing a higher level of skills. On the other hand, the insignificant difference between self-evaluation of the students with and without part time nursing jobs is likely because the type of activities performed in their part time job did not differ with what they do as a nurse intern. The research showed that self-evaluation scores of students were at moderate levels in the majority of domains. Also, it was found that the total mean score of self-evaluation of clinical skills had a direct relationship with average scores the students received in their clinical courses. It is important to academic instructors empower their students in self-evaluation. Based on the findings, nurse instructors should use self-evaluation in clinical evaluation of the nursing students. An extensive countrywide study with a cluster or quota sampling from different nursing schools could be used to assess the students' and instructors' views about the students' self-evaluation in clinical practice. Beside that a broad-study can be suggested to investigate the correlation between the students' self-evaluation scores and

their professional competency and self-esteem.

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## Authors' Contribution

Mohsen Adib-Hajbaghery (MAH) is responsible for the study conception, design, data analysis, supervision the study and preparation of the manuscript. Khatere Karbasi-Valashani and Asieh Heidari-Harartmeh performed data collection.

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The authors declare that they have no competing interests.

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