

Usefulness of 360 degree evaluation in evaluating nursing students in Iran

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Purpose: This study aimed to evaluate the clinical nursing students using 360 degree evaluation.

Methods: In this descriptive cross-sectional study that conducted between September 2014 and February 2015, 28 students who were selected by census from those who were passing the last semester of the Nursing BSc program in Rafsanjan University of Medical Sciences. Data collection tools included demographic questionnaire and students' evaluation questionnaire, to evaluate "professional behavior" and "clinical skills" in pediatric ward. Every student got evaluated from clinical instructor, students, peers, clinical nurses, and children's mothers' point of view. Data analysis was done with descriptive and analytic statistics test including Pearson coefficient using SPSS version 18.0.

Results: The evaluation mean scores were as following: students, 89.74 ± 6.17 ; peers, 94.12 ± 6.87 ; children's mothers, 92.87 ± 6.21 ; clinical instructor, 84.01 ± 8.81 ; and the nurses, 94.87 ± 6.35 . The results showed a significant correlation between evaluation scores of peers, clinical instructor and self-evaluation (Pearson coefficient, $p < 0.001$), but the correlation between the nurses' evaluation score and that of the clinical instructor was not significant (Pearson coefficient, $p = 0.052$).

Conclusion: 360 Degree evaluation can provide additional useful information on student performance and evaluation of different perspectives of care. The use of this method is recommended for clinical evaluation of nursing students.

Key Words: Clinical competence, Cross-sectional studies, Iran, Self-assessment, Surveys and questionnaires

Introduction

Since 1980, the 360 degree or multisource evaluation has been widely used as an evaluation technique throughout different organizations. Since 1990, this method has been considered as the best evaluation method because of its optimal results [1]. The primary difference between the 360 degree method and the traditional method is that the latter uses only one evaluation source

whereas the 360 degree evaluation approach uses multiple sources and is more comprehensive [2]. The traditional method uses a pyramid base that locates the student at the base of the pyramid and the professor at the top. However, in the 360 degree evaluation, students are located in the center of a network of connections that consist of the professor, peers, the patient, and the patient's family. In this evaluation, the student has access to a number of feedbacks which enables them to improve their function according to the different viewpoints [3].

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Table 1. Correlation between Evaluation Score of Students in 360 Degree Evaluation Method

	Evaluator	Student evaluation	Peer evaluation	Mother evaluation	Clinical instructor evaluation	Nurse evaluation	Mean \pm SD
Student evaluation	Pearson correlation coefficient	1	0.782	0.668	0.552	0.737	89.74 \pm 6.17
	p-value		0.001	0.001	0.002	0.001	
Peer evaluation	Pearson correlation coefficient	0.782	1	0.847	0.575	0.920	94.12 \pm 6.87
	p-value	0.001		0.001	0.001	0.001	
Mother evaluation	Pearson correlation coefficient	0.668	0.847	1	0.421	0.881	92.87 \pm 6.21
	p-value	0.001	0.001		0.026	0.001	
Clinical instructor evaluation	Pearson correlation coefficient	0.552	0.575	0.421	1	0.371	84.01 \pm 8.81
	p-value	0.002	0.001	0.026		0.052	
Nurse evaluation	Pearson correlation coefficient	0.737	0.920	0.881	0.371	1	94.87 \pm 6.35
	p-value	0.001	0.001	0.001	0.052		

SD: Standard deviation.

In Iran, researchers Nakhaee and Saeed [4], as well as Baharvand and Nazer [5], studied the preliminary review, performance potential, reliability, and validity of this method in order to evaluate assistants and medical students. A number of studies discussed the use of multiple examiners for clinical evaluations of nursing students. Shojaee et al. [6] researched the evaluation process development of a group of nursing students' activities according to their own assessment methods. Mehrdad et al. [7] compared the self-evaluation method with their colleagues and clinical teacher in a medical surgical internship, but did not mention the 360 degree evaluation. We located only one study where Pazargadi et al. [8] investigated the instructors' experiences and attitudes toward the 360 degree evaluation. They suggested this method for nursing students' clinical evaluations. Traditionally, faculty evaluators performed nursing students' evaluations. Limitations of these evaluations have included the lack of direct student observation by faculty when students interact with patients and families. These evaluations do not take into consideration perspectives of nurses, patients, and students' self-evaluations of their skills. Therefore, the importance of thorough clinical evaluations and the

existing challenges associated with these evaluations, as well as the lack of studies in Iran have formed the basis for the current study. In this study, we evaluated clinical nursing students in a pediatric ward according to the 360 degree evaluation method.

Subjects and methods

We conducted this descriptive, cross-sectional study between September 2014 and February 2015. The research population comprised all junior nursing students that attended a Pediatric Internship Program in Rafsanjan University of Medical Sciences. Participants were chosen by the census method. From 30 students, 28 voluntarily agreed to participate in the study.

Data collection tools included a demographic questionnaire and the students' evaluation questionnaire. The questionnaires were prepared based on text book reviews. For content validation, the questionnaire was reviewed by colleagues and eight members of the College Board that had clinical internship experience and student clinical evaluation experience.

After review of the questionnaire, the students, peers,

instructor, and clinical nurses were given a 20-question Likert 1 to 5 questionnaire (Appendix 1). The mothers of the pediatric patients received a 10-question Likert 1 to 5 questionnaire (Appendix 2) that pertained to students' professional behavior and clinical skills (the mothers' questionnaire was the same as administered to the other four evaluators, with modifications to adjust for the mothers' answering capabilities). Tool validity was confirmed in a pilot study on five students. Reliability according to Cronbach α coefficient was 0.86. The score range of 20 questions was 20 to 100. Each student was evaluated according to four perspectives: instructor, student, peer, and the clinical nurse. The score range for 10 questions was 10 to 50. Each student was appraised according to the mothers' points of view. In order to match with the other four evaluators, we multiplied the score by two and calculated answers in the range of 20 to 100.

We obtained informed consent to participate in this study from all participants. The Ethics Committee of Rafsanjan University of Medical Sciences also approved the study (research number: 9/1793). The tools, procedure, and scoring methods were fully explained to the clinical instructor. Sessions were conducted with the nurses in order to familiarize them with the questionnaire and observation of the students. Permission to conduct the research was obtained from the Nursing School and the appropriate authorities at the Education Development Center of Rafsanjan University of Medical Sciences. The evaluators and students voluntarily agreed to participate and their confidentiality was assured by the use of a coding system.

The evaluation process from the five aspects began on the second day of the internship and continued until the end of the course (day 10). At the end of each day after the shift ended and the reports were given, the students, their peers, the clinical instructor, the clinical nurse, and

the child's mother completed the evaluation forms. Evaluation forms were completed daily until the last day. At the end, the students' daily scores and the total means were calculated and reported as the internship score. Data analysis was performed with descriptive statistics such as mean and standard deviation, along with analytic statistics that included Pearson coefficient using SPSS version 18.0 (SPSS Inc., Chicago, USA).

Results

From 28 participants, there were 15 females (53.6%) and 13 males (46.4%). Their average age was 21.70 ± 0.57 years. More than two-thirds of the students were passionate about their field and greater than half expressed satisfaction with the internship course.

The evaluation mean scores were as follows: students (89.74 ± 6.17), peers (94.12 ± 6.87), mothers (92.87 ± 6.21), clinical instructor (84.01 ± 8.81), and the nurses (94.87 ± 6.35).

We used Pearson correlation coefficient in order to examine the correlation between the evaluation scores based on the views of various evaluators. The results showed a significant correlation between evaluation scores of peers, clinical instructor, and self-evaluation. However, there was no significance between the nurses' evaluation scores and the clinical instructor (Table 1).

Discussion

According to the findings, the highest mean scores belonged to the peers, nurses, children's mothers, students, and the clinical instructor. In other words, the instructor recorded lower scores for students compared to the other evaluators. Similarly, according to a study

by Mehrdad et al. [7], instructors' mean scores were lower than the peers and students. Likewise, the present study supported the findings by Sokhan et al. [9] where the instructors gave lower scores to the students compared to the other evaluators. However, the approach and participants of these studies differed from the current study. Mehrdad et al. [7] compared self-evaluation with peers and instructors' evaluation of nursing students during a medical surgical internship. Sokhan et al. [9] conducted their research on midwifery students. Neither of these studies included nurses and patients in their evaluations.

According to the present study, we observed a significant positive correlation between the peers' evaluation scores, those of the clinical instructors, the children's mothers, and the self-evaluation. However, there was a nonsignificant correlation between the nurses' evaluation scores and the instructors, such that the nurses gave higher scores to the students and the clinical instructor gave the lowest scores. Notably, in their assessment, nurses considered clinical skills whereas instructors meticulously included general skills, punctuality, organization, and ability to accept criticism in addition to clinical skills. Fortunately, the mothers' evaluations were the same as the peers, the nurses and students, which indicated satisfactory care given by the students.

Studies reported various results. Mehrdad et al. [7] observed a significant correlation between self-evaluation and peer evaluation, which the current study supported. Similarly, in a study by Hemalatha and Shakuntala [10] there was a significant positive correlation between the student's self-evaluation and the peers, but no significant correlation among the students' scores compared to those reported by the patients and nurses. This finding did not agree with the current study. The present study confirmed the results reported by Ogunyemi et al. [11] which showed a weak correlation between the nurses'

evaluation scores and the professors' scores; the nurses scored the residents higher compared to the professors. Findings of a study by Josh et al. [12] unlike the present study indicated a positive correlation between the nurses' evaluation scores and those of the professors, as well as a negative correlation between the students' scores to those given by the peers. In their study, the peers gave lower scores to the students compared to other evaluators.

According to studies, it is the observant, scrupulous observation of the instructors that causes them to give the students lower scores compared to other evaluators. Perhaps it is one of the flaws of being assessed merely by the instructors, which most often results in students' dissatisfaction. Evaluations from different points of view can converge the scores toward more accurate values and reduce the numbers of students' complaints from the traditional method which relies solely on the instructor's opinion. Novel methods of evaluation are expanding and the world of education increasingly tends to use these methods. On the other hand, the students learn together and from each other. Therefore, they try for what is being evaluated. The patients and their families as care receivers have valuable opinions. The results have suggested that 360 degree evaluation which incorporates multiple perspectives on care may provide additional useful information. The information obtained from 360 degree evaluations can guide feedback to nursing students on their professional and clinical skills. The feedback may lead to improved patient care. Therefore, applying the 360 degree evaluation in evaluating nursing students is strongly advised. The current study limitations have included the limited number of student participants and the evaluation of only one course of internship. Similar studies on other students in other environments and wards are suggested.

According to the finding of this study, different people

groups have different viewpoints regarding evaluation of nursing students and this evaluation method may provide useful information about students' performance from different aspects and also provides an appropriate feedback for the students themselves. Hence, the usage of this method is recommended in order to improve the clinical performance.

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Conflicts of interest: None.

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Appendix 1. Questionnaire for Self-Evaluation of Students and Evaluations by Peers, Nurses, and Clinical Instructor

Items		5	4	3	2	1
Professional behavior	Punctuality					
	Clean and tidy uniform					
	Good communication with child, mother, and personnel					
	Cooperation with personnel and other students					
	Observance of professional ethics					
	Observance of professional principles					
	Good self-confidence					
	Accountability					
	Flexibility					
	Working with energy and vitality					
Clinical skills	Observance of sterile tips					
	Efforts to increase scientific knowledge					
	Performing tasks quickly					
	Assessing children based on scientific principles					
	Identify nursing needs of children					
	Identify abnormalities in laboratory tests					
	Performing proper nursing care based on the nursing process (check vital sign, feeding, and control of fever)					
	Properly performing procedures (injection, suction, and oxygen therapy)					
	Necessary education for children and mothers					
	Proper reporting at the end of the day					

Appendix 2. Questionnaire for Evaluations by Mothers

Items		5	4	3	2	1
Professional behavior	Clean and tidy uniform					
	Good communication with child, mother, and personnel					
	Observance of professional ethics					
	Accountability					
	Working with energy and vitality					
Clinical skill	Observance of sterile tips					
	Performing tasks quickly					
	Performing proper nursing care based on the nursing process (check vital sign, feeding, and control of fever)					
	Properly performing procedures (injection, suction, and oxygen therapy)					
	Necessary education for children and mothers					