



An Investigation on the Validity and Reliability of the Evaluation form of Lecturers' Instruction Quality in Sabzevar University of Medical Sciences with an Emphasis on Teaching Dimensions

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Authors' contributions

This work was carried out in collaboration between all authors. Author MM participated in design of the study and authors MH and AM carried out statistical analysis. Authors AA and EF helped in draft the manuscript and revised the manuscript author MH edited the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Measuring instruments used for the planning of any study should also be evaluated.

Aim: The present study aimed to investigate the quality of instruction an evaluation with an emphasis on teaching dimensions.

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Methods: In this cross-sectional study the population was 250 students of Sabzevar University of Medical Sciences who were selected using simple random sampling. Data collection tool for evaluation the quality of instruction was the one used by Betoret and Tomas. To evaluate the validity and reliability of the method, determining the validity method and CVR, CVI, structure validity using Amos software and Cronbach's alpha coefficient was used. Data were analyzed using SPSS 15 software and Amous 21.

Results: For face validity of the evaluation forms some changes were applied on the items and in content validity 7 necessary items has been added to other items. Finally, 20 items formed the evaluation questions which included 6 items related to presentation skills, 4 items related to classroom management, 5 items related to educational capabilities and 5 items related to communication skills.

CVI value was equal to 0.82 and CVR was 0.88 respectively. Alpha levels obtained using Cronbach's alpha was 0.92. The final results of confirmatory factor analysis revealed numerical values as follows: Chi-square degrees of freedom equal to 0.418, RMSEA <0.001.

IFI = 1, OPRATIO =0.956 and these values showed the approved items forming each of the structures.

Conclusion: Therefore, based on teaching from Betoret and Tomas perspective, in this study, a questionnaire was developed according to the results contains the necessary reliability and validity.

Keywords: Evaluation; Betoret and Tomas; teaching dimensions.

1. INTRODUCTION

Training is one of the most important missions of a university and it is considered as an important duty of the faculty board which improving its quality results in improving the education quality [1]. One of the processes which are held in order to improve this quality is teacher evaluation. Evaluation is a systematic process to gather, analyze and interpret information to determine that to what extent the objectives have been met so that decision could be made and to expand this definition the extent of lecturers' success in achieving the educational goals is considered as the lecturers evaluation criteria [1,2].

Judging and evaluation of the lecturers is conducted through evaluation of the lecturers themselves, asking colleagues point of view as well as capability tests [3]. Although evaluation is a reasonable and necessary issue and positive and negative aspects of programs can be realized, yet it requires a system of proper, sensitive and accurate measurement tool so that the evaluation will be conducted properly and its negative consequences would be minimized. The consequences of poor evaluation performance include lack of staff satisfaction, loss of motivation, staffs indifference to their duties and ultimately reduction of the system efficiency which are important issues in return [4].

Therefore, a proper evaluation of the lecturer requires specific and effective criterion since by it using these criteria and indicators the teachers' evaluation forms are designed. However, many

questions are raised in this regard and this process is faced with many challenges in different universities therefore many attempts have been made to answer these questions and ambiguities regarding lecturers' evaluation through various studies and researches. This way more compatibility is made between university faculty's evaluation results and the real results [5].

Given the importance of the evaluation and the importance of the value of inventory items that are dependent on it and since the importance and value of these items are not equal, therefore, the weighting in the calculation of the final score sounds necessary. Given that the main shortcoming of evaluation forms in Sabzevar University of Medical Sciences is lack of weight for options and areas and since the Ministry of Health has also emphasized considering the principles of evaluation in current education activities, it was decided that by surveying the stakeholders' teachers evaluation, a review of the forms to assess the quality of teaching be conducted.

Since Student Evaluations of Teaching (SET) have been in existence since the 1920s. The continued use of SET in higher education for teaching or administrative purposes has been based on empirical research indicating that a well-constructed instrument can be considered a useful measure of teaching effectiveness [6].

No research based on a consistent pattern has been investigated in this regard yet, various

dimensions of teaching evaluation model based on Betoret and Thomas are tried to be determined in this study [7]. In this regard Modelled on Betoret and Tomas's teaching perspective, a questionnaire was developed and based on the research study's findings was found to be reliable and valid. This will lead to identify the strengths and weaknesses of each of the respective lecturers in each area based on the average score in each area which could result in a feedback to relevant teachers to strengthen the weaknesses in each area.

2. METHODS

This study was a cross-sectional study, the population consisted of medical university students. There are 1300 registered students who spend at least two semesters at the University. The students completed the evaluation form and questionnaire. These students completed the consent form voluntarily. The 250 forms were randomly selected according to the number of students in each school and departments in the University.

The data collection entailed the utilization of two questionnaires. The first questionnaire had demographic questions whilst the second questionnaire was a theoretical teaching evaluation tool based on Betoret and Tomas teaching dimensions. Face and content validity were evaluated by a panel of experts who determined Content Validity Ratio and Content Validity Index. The questionnaire was submitted to the panel. This panel was composed of experts who were active in the field of questionnaires in order to provide the possibility of accurate and proper judgement.

These members were selected according to pre-determined aims. For this purpose, they were invited experts in various fields of medical education, health education and promotion, education management, psychologist in field of health behavior.

The communication with the members of the panel was made in person, by telephone or by e-mail and the selected members agreed to participate in the study. Then 8 experts were selected on this basis and they were asked to utter their opinion and judgement about each item on a scale that has been set. The members responses were coded as necessary, useful but unnecessary and unnecessary. The construct validity was performed using AMOS software.

Cronbach's Alpha test also was used for reliability of the evaluation forms.

3. RESULTS

In this study, 250 students (156 females and 94 males) with a mean age of 22.18 ± 3.02 participated. Of total, 27.6% of them were medical students 25.2% were nursing and midwifery, 16.8% were paramedical and 30/4% were health science students. After the validity and reliability a 20 question questionnaire was prepared [Table 2]. CVI and CVR values were 0.88 and 0.82 respectively which indicates the acceptable validity of the instrument.

The final results of confirmatory factor analysis revealed the following numerical value: Chi-square with 0.418 degrees of freedom, RMSEA < 0.001 , IFI = 1, PRATIO = 0.956 and these values approved the items forming each of the structures (dimensions) [Table 1]. Moreover, in this study, the Cronbach's α coefficient was used to measure reliability. Cronbach's alpha coefficient was between 0.84 to 0.95 for scale component and was assessed as 0.92 which was considered good.

According to the findings, students' priorities based on different lecturers features areas in identified areas were as follows: communication skills 19.02 ± 5.6 , teaching skills 18.78 ± 5.6 , the educational capability 16.36 ± 5.6 and classroom management skills 12.96 ± 5.6 that are shown in Table 2 for each university separately.

4. DISCUSSION

Preparation and development of the evaluation forms for faculty members are among the priorities of an educational institution [8]. To guarantee the quality of teaching and learning in the university system requires a serious look at all the factors involved in the teaching-learning process. Surely faculty members of universities are considered among major and effective factors.

To improve this process, the continuous development of individual faculty members and evaluation actions are the indicators of a successful university. Since lecturers are the most valuable part of the higher education system, designing a proper evaluation system for them is particularly important [9,10]. One of the commonly performed actions in almost all the universities and educational centers is teacher evaluation by students through questionnaire [11].

Table 1. Confirmatory factor analysis data

PRATIO	RMSEA	CFI	NFI	IFI	χ^2/df	Index
0.956	0/.081	0.947	0.916	1	0.418	value

Table 2. The evaluation of university teaching dimensions in various faculties. The first half of the academic year 2014-2015

Communication skill	Educational capability	Teaching skill	Class management skill	Dimension/index	University
18.75±3.8	17.03±3.1	18.57±3.2	11.43±4.4	Mean and standard deviation	medical
19.07±4.2	14.15±4.9	17.97±4.9	12.01±3.8	Mean and standard deviation	Nursing and midwifery
19.17±3.7	15.17±4.4	17.85±5.4	11.42±3.2	Mean and standard deviation	Health science
18.27±4.1	15.15±3.5	17.16±4.9	12.35±3.6	Mean and standard deviation	paramedical

Heightened focus on the quality of teaching in medical college has led to increased use of student surveys as a means of evaluating teaching. Good evaluation practices in medical training, at all levels, enhance both quality and accountability [12].

Indeed lecturers' evaluation at universities is a process that aims to improve teaching and to raise the academic level of students. If this process is conducted continuously and academically, its results could improve and correct the shortcomings and become a basis for many decisions and educational planning which results in university's academic level improvement. Evaluation is a complex process and is only reliable if specific factors are met.

One of the most important factors which should be considered is a tool that is reliable and valid and as educational context is changing it should be revised continuously. One of the important elements of evaluation is the content and the importance of evaluation questions that will be answered by the students. The quality of theory teaching could be assessed by students' response rate. Thus it is especially important to gain a better understanding of student beliefs and level of understanding concerning their instructors' assessment practices. Once this understanding is achieved, instructors can be better prepared to use assessment as a tool to facilitate student learning [13].

According to the findings, students' priorities based on different lecturers features areas in identified areas were as follows: communication

skills, teaching skills, the educational capability and classroom management skills.

Some studies are conducted in this regard for instance in Turhon et al study that was conducted in Turkey it was showed that among various evaluation items, students considered lecturers communication with students and conveyance of content more important [14] Joshi et al study in Nepal also showed similar results [15]. Donnelly et al study at the University of Michigan also showed that students pay more attention to the lecturers communication skills and their professional ability [16].

Also, our results were similar to the reports of other educational scientists. Our respondents also agree that teaching skills for example facilitators were using audiovisual aids effectively, such as slides. Therefore, the current study supports earlier research findings [17].

5. CONCLUSION

By considering students evaluations is important in quality improvement and the facilitation of the learning process it is suggested that in future researches a comprehensive study including all the medical universities of the country be conducted with the help of the lecturers and top students and an evaluation form and complementary actions be held so that the true evaluation of the lecturers performance would be facilitated. Moreover, considering the importance role of lecturers' communication skill educational designs and necessary workshops for more consultation sounds necessary. The possible

implications could be lecturers attending a course or workshop on communication skills particularly speaking and transmitting information effectively and confidently.

Also It should be noted that one of the limitations of this study a greater number of students were girls that can affect the results thus it offer to be considered this limitation in future field studies.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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