

Effect of Quizzes on Test Scores of Nursing Students for Learning Maternal and Child Health

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Abstract

Background: One of the common problems of education in universities is that teachers do not evaluate continuously. The effect of continuous evaluation on student learning has been less investigated and this study intends to address this issue.

Methods: In this quasi-experimental study, 30 students in the first semester of 2014 and 22 students in the first semester of 2015 were enrolled. The control group received teaching in the form of lecture with question and answer in all sessions and the intervention group in addition to that, received quizzes every week. Finally, test scores of students were compared. Data were analyzed using independent t, paired t, and Chi-square tests and $P < 0.05$ was considered significant.

Results: Mean scores of midterm examination in the intervention and control group were 3.77 ± 0.47 and 3.25 ± 0.44 , respectively ($P = 0.003$). Also mean scores of the final examination in the intervention and control groups were 16.69 ± 1.63 and 15.40 ± 1.02 ($P < 0.001$).

Conclusion: Weekly quiz tests increased the test scores in the midterm and final examinations in the students.

Keywords: WEEKLY QUIZ TESTS, TEST SCORES, NURSING STUDENTS

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Introduction

Assessment is an integral part of the teaching and learning process and has a significant impact on how to study and prepare for the exam (1). Many clinical educators seek the latest teaching methods that can adequately teach the necessary knowledge and clinical skills to the students. The best way to achieve this goal, is the use of learning methods in which the learners are active in education (2, 3). The main purpose of evaluation is to help the teachers improve teaching methods to assist the planners in order to promote

education. Now, the usual method of teaching is speech and if it is accompanied by questions and answers, as well as discussion and active participation, learning will be more productive (3). One of the common problems in training courses at the university is that teachers do not use a continuous and formative evaluation procedure during teaching which often reduces deep learning and academic performance of students (4).

Studies have shown that for the development of medical education, it is necessary to create an attractive environment for students and teachers and for the creating of such an environment, the students should be involved in their education (5). Studies have reported that repeating a test or exam leads to better learning, while repeating a study does not establish such conditions (6, 7). The purpose

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of continuous testing, is to enhance learning and these tests can enhance learning in different ways, for example, by increasing the motivation and changing the learning strategy. Following the repeated tests, most students change their study strategy and increase their study time (8). The evaluation of students from the training which they received, is one of the important elements of teaching and learning. Effective evaluation is very important not only in screening students, but also in increasing their motivation as well as helping teachers assess their teaching (9). A study has reported that the teacher plays an important role in students' education both in theory and practice and a good education requires good design, student participation in class discussions and creating learning opportunities for them (10). In medical education, clinical discussion has an important relationship with student performance and the real meaning of clinical education, is to increase knowledge and professional skills to diagnose and treat diseases (11). Studies have reported that the evaluation of students through frequent tests may facilitate learning and help students keep the learned content in mind longer by providing feedback to students (12, 13).

For the better learning of the lesson content by the students, it is necessary to use different teaching methods, frequent assessment using structured daily quiz, short answer exams cover different parts of educational content, class discussion, and problem-solving activities (14). Full evaluation of the course, giving continuous feedback to students for academic achievement and recognition of the strong and weak students, are the goals of performing of daily or weekly quizzes and the students are expected to accept the quiz as a natural and integral part of the daily teaching-learning process (15). So far, less attention has been paid to the impact of continuous evaluation on student learning and the current study intends to address this issue. Therefore, we aimed to determine the effect of weekly quiz tests on midterm and final examinations in nursing

students for learning the course of Maternal and Child Health.

Materials and Methods

This quasi-experimental study was conducted in two semesters on nursing students at Shahrekord University of Medical Sciences in Iran. At the beginning of the first semester of 2014 that the Maternal and Child Health course was offered to students, the researchers decided to detect the quiz impact on the midterm and final examinations. Because it was not possible to divide the students into the two groups (Intervention and control) due to the limitation of place and time and this course is offered once annually to students. Therefore, it was decided that one of the students of the first semester of 2014 or 2015 be assigned to the intervention group and the other assigned to the control group and this allocation was random.

In the first semester of 2014, 30 and in the first semester of 2015, 22 students who had taken the Maternal and Child Health course, were enrolled. In the first session of class, personal data form was completed by the students, including age, sex, occupation, and marital status. Finally, midterm and final test scores of students were compared in the two stages. In the first group which was the control group, the lesson plan was given to students at the first session and teaching was performed in the usual way (lecture) with questions and answers and evaluation was carried out by holding a mid- and end-term exam. In the second group which was the intervention group, the lesson plan was given to students at the first session and they were told that the course evaluation would be based on the continuous evaluation and not just a mid and final-term exam. They were also asked to be ready for performing the quiz exam from the lessons of previous sessions. In this group, teaching was done in the usual way, lecture with questions and answers, with the difference that in each lesson, quizzes were taken from the previous sessions and mid- and final-term exam was performed. In

each session, five short-answer and multiple-choice questions were given to the students of the course content in the previous session. The independent variable of study was the performing of quiz exam and the dependent variables were the scores of mid- and final-term examination scores. Data collection was performed with a self-made questionnaire and its validity was determined by content validity and its reliability was performed by the test re-test method. Data were analyzed using SPSS software. Independent t, paired t, and chi-square tests were used and $P < 0.05$ was considered significant.

Results

The mean age of the students was 21.95 ± 2.51 in the intervention group and 22.13 ± 2.06 in the control group ($P = 0.78$). There was no significant difference between the groups with respect to marital status ($P = 0.10$) and employment during studying ($P = 0.78$). The comparison between the midterm and final exam scores in both groups are presented in table 1 showing that there was a significant difference in the mean scores of midterm and final exam scores between the two groups (table 1).

Discussion

The aim of this study was to determine the effect of weekly quiz tests on midterm and final test scores in Maternal and Child Health Course. In this regard, the findings of study showed that there was a significant difference in the mean scores of midterm and final exam in a weekly quiz and usual method and quiz

tests increased the mean test scores. In this regard, a study that compared holding daily and weekly quizzes, reported that the participation of students in weekly quizzes was higher than the daily quizzes and participation in this test was associated with an increased final exam score (16). Another study conducted among students of Veterinary Medicine, reported that weekly quizzes were associated with better academic performance than the traditional system (17). Increased student learning as a result of frequent quizzes, has also been confirmed by Roediger and colleagues (18). One of the studies conducted in Iran examined the effective methods for teaching anatomy. The researchers reported that one of the factors affecting the quality of learning was holding a quiz test (19). In this regard, a study examined the impact of quiz exam two times a week on the level of self-confidence and enthusiasm of students. The quiz questions were sent via e-mail to students and gave feedback to them immediately after receiving their answers. They reported that the reason for increased self-confidence and enthusiasm of students, was probably the immediately feedback that they received to their answers (4).

In the present study, quiz questions that were given to students in 16 sessions, including an important part of the course material and helped them achieve things that increase the probability of success in the final exam. One study reported that the use of this method of teaching-learning of the test quiz, encourages the students to study and reduce their concern for final exam and as well as reduces study time to prepare for final exams (15). This finding was confirmed in another study (14). Quiz test is useful not only for students but

Table 1. Comparing the mid-term and final exam scores between the two groups

Group	Mean Scores Mean \pm SD	Midterm exam scores (from 5 scores) Mean \pm SD	Final exam scores (from 15 scores) Mean \pm SD
Holding weekly quizzes		3.77 \pm 0.47	16.69 \pm 1.63
Control		3.25 \pm 0.44	15.40 \pm 1.02
Mean difference		0.52	1.29
P value		0.003	<0.001

also for teachers and helps them assess how their teaching and solve their educational problems (20).

Small sample size, taking quizzes only in one course and one school and failure to assess the effect of quiz tests on stress, self-esteem and enthusiasm of students, were the limitations of the present study.

Conclusion

The performing of weekly quiz tests increased the scores of midterm and final exam scores in nursing students. A larger study with more samples and in other courses and measuring the effects of quiz tests on stress, self-esteem and enthusiasm of nursing students is suggested.

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Authors' Contributions

Masoumeh Delaram designed the study, gathered the data, and wrote the manuscript. Sahand Shams analyzed the data and revised the manuscript.

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No conflicts of interest were declared by the authors.

Conflict of Interest

The author declares no conflict of interest.

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