Original Article

Psychiatry Section

The Efficacy of Three Learning Methods Collaborative, Context-Based Learning and Traditional, on Learning, Attitude and Behaviour of Undergraduate Nursing Students: Integrating Theory and Practice

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ABSTRACT

Introduction: Communication skills training, responsibility, respect, and self-awareness are important indexes of changing learning behaviours in modern approaches.

Aim: The aim of this study was to investigate the efficacy of three learning approaches, collaborative, context-based learning (CBL), and traditional, on learning, attitude, and behaviour of undergraduate nursing students.

Materials and Methods: This study was a clinical trial with pretest and post-test of control group. The participants were senior nursing students. The samples were randomly assigned to three groups; CBL, collaborative, and traditional. To gather data a standard questionnaire of students' behaviour and attitude was administered prior to and after the intervention. Also, the rate of learning was investigated by a researcher-developed questionnaire prior to and after the intervention in the three groups.

Results: In CBL and collaborative training groups, the mean score of behaviour and attitude increased after the intervention. But no significant association was obtained between the mean scores of behaviour and attitude prior to and after the intervention in the traditional group. However, the mean learning score increased significantly in the CBL, collaborative, and traditional groups after the study in comparison to before the study.

Conclusion: Both CBL and collaborative approaches were useful in terms of increased respect, self-awareness, self-evaluation, communication skills and responsibility as well as increased motivation and learning score in comparison to traditional method.

Keywords: Nursing education, Teaching approaches

INTRODUCTION

Most universities worldwide are seeking for teaching approaches through which the capability of practical decision taking and stable, student-oriented in-service training could be promoted [1,2]. In nursing, there has always been a gap between theoretical and practical training so that the learners are not able to incorporate theoretical learning into practice [3]. Training as active learning causes considerable increase in the association between theoretical and practical training [4]. In the 21st century, training facts is no longer needed as social, economic, training, environmental, and health challenges prevail worldwide. Instead, cultivating critical thinking is required at all training levels [5]. Also, training communication skills, respect, self-awareness self-evaluation, and responsibility is considered as one of the important indexes of changing the behaviours in modern teaching approaches [6]. Lecturing was useful as a teaching strategy when very few books were available. However, lecturing is useful now a days as an approach to transmitting the information. But, its efficacy on learning facilitation is questionable [4,7]. In fact, teaching by traditional method in the framework of lecturing is criticized because of emphasizing on students passivity in receiving knowledge [6]. An efficient nurse needs some abilities to overcome problems in clinical practice [4]. No thinker can appear in a community in which educational system accepts the problems with no criticism [8]. There is consensus on importance of critical thinking [9]. But, some researchers believe that there is no standard approach to facilitate critical thinking [8] while others support use of special strategies in this field [6].

There are numerous teaching strategies among which context-based learning (CBL) [9] and collaborative training are particularly important. CBL is known as one of philosophical forms of problem-based learning and considered as a strategy which is helpful in training of nursing students. CBL facilitates developing practical qualification in caring environment which is rapidly changing and is moving towards global community [9].

The purpose of collaborative training is to promote learning's effect on performance, during which collaborative work between teacher as facilitator and participants as students is accomplished [10]. Teachers are merely learning guide and have no intervention is learning process [10]. According to structuralists' point of view, active process of learning stimulates learning through applying learning in a meaningful activity which is often raised as a problem [9]. However, student-oriented approaches to learning based on exploration, such as CBL, are compatible with all three schools of learning skills and abilities which any institute of nursing education follows [9]. To date, investigations on the effect of each student-based approach on learning have been conducted but little research has been conducted on CBL and collaborative approach in Iran. Moreover, the effect of these methods on behaviour and attitude of students has been paid less attention.

AIM

The present study seeks to compare the effect of three methods, collaborative, CBL and traditional, on learning, behaviour and attitude of nursing students.

MATERIALS AND METHODS

This study was a clinical trial conducted in 2014 with pre- and post-test of control group. Participants were senior students of nursing in a medical university in Iran who were attending

neurology apprenticeship in an interior neurology ward. Regarding the previous studies and using calculation formula for sample size, we decided to assign 24 participants to each group [7]. Both CBL and collaborative training groups had no history of training by these two methods. Participants were randomly allocated to three groups of CBL, collaborative training, and traditional learning (matched by gender, age, and interest in nursing). To obtain the students' consent to participate in the study, after giving complete explanations to the students we asked them to fill out the consent form of participation in the study. In addition, we ensured them that we keep the research data as confidential and use them only for research purposes. We obtained the ethical approval (code no: 12-3-92) from the ethics committee of the university. Furthermore, Iranian Registry of Clinical Trials issued the code IRCT2013070313768N4 for the study protocol. The instrument of data gathering was a questionnaire consisting of four sections: the first section consisted of demographic characteristics; the second section was the standard questionnaire of student's behaviour assessment consisting of subsections of respect (10 items), responsibility (16 items), communication skills (11 items), self-awareness and self-evaluation (8 items), and critical thinking (9 items); the third section was the standard questionnaire of student's attitude consisting of students role (1 item), lecturers role (13 item), and the efficiency of the unit from students viewpoint (11 items). The fourth section comprised researcher-developed questions which investigated students' learning level. We examined the validity of the questionnaires by content validity and their reliability was reported 95% by Cronbach's alpha [6,7]. Prior to use of the three methods, we defined the learning purposes and then identified the essential concepts relevant to subjects.

In CBL method, the steps of implementation were as follows: The first step was testing situation, in which several genuine nursing situations were explained to students as a written scenario. These situations were concerned with four diseases; cerebrovascular accident, multiple sclerosis, myasthenia gravis, and Guillain Barre Syndrome. The students were asked to explore the situation while concentrating on the nursing role in the situation, clients situation, and health condition. In this step, the students need to recognize what they already know with reference to previous experiences, what they do not know, and what they are required to know as a nurse to be able to interact with the situation. Williams et al., refers to these steps as self monitoring, which is an important component of metacognition [9].

The second step was as a self-directed study, in which the learner sets a purpose for him/herself and seeks for the resources capable of assisting him/her. In this step, the student both studies and receives advice from resources and people [9]. At the end of this step, the students ask questions such as why? What? And what will happen? This process helps the learner, as self-directed, expand deep thinking skills and learning skills, both of which are essential to learning [9]. The third step was integration of new information, in which the students integrated newly acquired information into situation, that is, they linked old and new concepts. Here, new issues are identified in learning. This step is important since the students should implement what they have learned in the future [9]. In this step, some questions on the students' learning from all four scenarios were asked by the lecturer [9]. These questions lead to increased students' autonomy in deep thinking [9]. At the end of this step, the students summarized what they had learned and how they put what they had learned into practice. The fourth step is deep thinking (reflection), when the students finally discuss learning resources and their own and peers' approaches to investigation and exploration [9]. In this step, the students found out what they should have done and whether it had been better if they would not have done some things, and tried to incorporate this reflection in subsequent situations. The learner and lecturer at this step develop a critical structure concerned with their participation in learning towards each other. And in the collaborative training, the steps of implementation were as follows:

Phase 1: Forming (the time of organization and orientation to tasks); in this step, students identified questions or subjects relevant to the clinical practice. The lecturer collaborated with the students to arrive at the final decision about the clinical question or subject. Phase 2: Storming; in this step, the students searched for scientific knowledge to answer a clinical question regarding the subject. Phase 3: Norming; at this time communication is opening up and rising, students evaluated the articles and other relevant material in collaboration with the teacher. Phase 4: Performing; in this step, everybody is focused on constructive action directed towards accomplishing the task well; the students prepared short written papers based on the knowledge they had collected and evaluated. Phase 5: adjourning; in this step, teams have completed their tasks, they conclude, and then go on to other teams in other places. The students prepared themselves for providing the patients with nursing care. It is important for the team to take the time to look at its process for the last time [11-13]. In traditional group, the students underwent teacher-oriented training per conventional routine. After completion of the course, to determine the change in the students' behaviour and attitude, we asked students to fill out the questionnaires again. Then, the data before and after training were compared. Also, to determine the students' learning, we compared the scores obtained in this course prior to and after the training in the three groups.

STATISTICAL ANALYSIS

The data were analysed by SPSS and the level of significance was considered as 0.05 for all tests. t-test and Mann-Whitney were used to compare the independent and dependent variables, respectively.

RESULTS

Most participants were 20 to 25 years and female. The majority (60%) of students in the three groups were moderately interested in nursing. There was no statistically significant association among the three groups regarding age, gender, interest in nursing, and family's economic status. The score of collaborative training and CBL groups increased in five behavioural domains after

	Before		After		p
	Mean	Standard deviation	Mean	Standard deviation	
Respect	13.45	1.9	16.35	1.56	<0.05
Responsibility	19	2.65	24	2.81	<0.05
Communication skills	14	2.2	18	2.01	<0.05
Self-awareness and self-evaluation	9.4	1.5	12	1.97	<0.05
Critical thinking	10	1.53	14	2.2	<0.05

[Table/Fig-1]: The mean score of behaviour in collaborative training before and after intervention.

	Before		After		p
	Mean	Standard deviation	Mean	Standard deviation	
Respect	11.45	1.316	17.1	1.33	<0.00
Responsibility	19.15	2.97	26.3	3.88	<0.00
Communication skills	14.45	2.45	21.3	2.49	<0.00
Self-awareness and self-evaluation	9.65	1.75	14.05	1.98	<0.00
Critical thinking	11.6	2.45	15.55	2.03	<0.00

[Table/Fig-2]: The mean score of behaviour in context-based learning before and after intervention.

the intervention (p<0.05) [Table/Fig-1,2], but the mean score of behaviour was not significantly different in the control group before and after the intervention [Table/Fig-3].

The findings indicated that the mean score of learning increased after the intervention in all three groups of study. There was a statistically significant association between the learning score before and after the intervention. However, the mean learning score was partially higher after the intervention in CBL group in comparison to collaborative and traditional groups [Table/Fig-4]. Also, the mean score of attitude increased in collaborative and CBL groups after the intervention (p<0.0), but we observed no statistically significant association between the mean attitude score between collaborative training and CBL groups both before and after the intervention [Table/Fig-5]. The findings of study indicated that there was a statistically significant association between the mean scores of behaviour and attitude in CBL and collaborative training groups after the intervention.

	Before		After		p
	Mean	Standard deviation	Mean	Standard deviation	
Respect	13.13	2.01	14.17	2.22	>0.05
Responsibility	14	2.13	13.25	3	>0.05
Communication skills	13	2.85	12.75	3	>0.05
Self-awareness and self-evaluation	8	1.44	8.5	1.85	>0.05
Critical thinking	9	1.66	9.56	1.98	>0.05

[Table/Fig-3]: The mean score of students' behaviour in traditional learning before and after intervention.

	Score		Mean		p
	Before	After	Before	After	
Context based learning	14.91	18	0.61	0.89	<0.05
Collaborative	14	17	1.27	0.67	<0.05
Traditional	13.75	16	0.87	1.2	<0.05

[Table/Fig-4]: The comparison of mean score of learning in context-based learning, collaborative, and traditional before and after the intervention.

	Context based learning				Collaborative training				Traditional method			
	Mean		Standard deviation		Mean		Standard deviation		Mean		Standard deviation	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Attitude	1.7	9.003	66.3	94	15.19	25.7	75	129	2.13	5.1	62	67
p	< 0.05				< 0.05				> 0.05			

[Table/Fig-5]: The comparison of mean score of attitude in context based learning, collaborative, and traditional before and after the intervention.

DISCUSSION

The findings of the present study confirmed the efficacy of implementing three methods, CBL, collaborative, and traditional, on learning in nursing students. To determine this effect, we studied behaviour, attitude, and learning of the students. One of the domains of student's behaviour assessed in the present study was respect before and after the implementation of two methods. Williams et al., argue that the obtained information and experience through CBL develop some sense of trust and respect between lecturer and student [9]. Hunt et al., conducted a study in California, USA to investigate the effect of teamwork on support for students to meet communication needs in classroom. The final evaluation of students indicated that appropriate social interaction with and respect among them were the important outcomes of teamwork [14].

In the present study, consistent with other studies [6,7], the mean score obtained by the students for respect by CBL and collaborative training increased considerably after the intervention and this increase was higher for CBL than collaborative training. However, the score for respect before the intervention had no statistically significant association with that after the intervention. The criteria of respect in the present study were listening to others, appreciating others' sympathy and help, interrupting in other words aberrantly, apologizing for delay, regarding the value of information irrespective of the value of the individual giving the information, etc.

Another domain of students' behaviour examined in the present study was communication skills. Sandars et al., conducted a research on obstacles and facilitators of collaborative online learning and continuous professional promotion in the UK health care. This quantitative, qualitative study indicated that one of facilitative domains of collaborative training was feeling of attachment and prevention of communicative separation [15]. The students believed that group discussions in collaborative method developed some sense of confidentiality and balanced competition in them and hence caused intimacy among participating members [15].

The results of another study showed that one of the important outcomes of teamwork was increase in involvement in classroom activities by the students and promotion of their communication skills [11,12,14]. In another study, Trimmer et al., applied CBL in training mental health. Then, they conducted a qualitative study on a number of students and the students remarked CBL enhanced their sense of teamwork. The communication in this approach is one in which the individual is considered by others as a source [16]. In the present study, the mean score obtained for communication skill improved in CBL and collaborative training groups after the intervention. As observed, the increase was more pronounced in CBL than collaborative training. Another domain of students' behaviour assessed in the present study was self-awareness and self-evaluation. The most pivotal obstacle facing CBL implementation for teachers is the transition from content-oriented teaching to student-oriented teaching [9,16]. This is concerned with student's autonomy and his/her contribution to learning and self-relied evaluation. In another study, students remarked that they found their strengths in CBL and their self-confidence increased in CBL method [17]. In the present study, the mean score of self-evaluation increased in collaborative and CBL after the intervention and the increase was more pronounced in CBL than collaborative training. Another domain of students' behaviour assessed in the present study was responsibility. In a study, 68% of the students exhibited responsibility for and cooperation in clinical practice. Of the students, 80% considered CBL as a factor for a broader view of clinical practice [16]. The students remarked that CBL caused promotion of clinical practice in mental health. As the lecturer assigned different learning tasks to each student, we continuously followed up learning tasks in terms of the raised scenario [16,17]. In the present study, the mean score obtained for responsibility increased in CBL and collaborative training groups after the intervention and, again, the increase in score was higher in CBL than the collaborative training.

Also, the findings of this study indicated that CBL and collaborative methods led to a change in the students' attitude, but traditional method brought about no change in the students' insight. Hwang and Jang argued that the students who learned based on problem solving enjoyed a much higher level of motivation in comparison with the students who learned per traditional methods [17,18]. In fact, the increase in motivation changes students' attitude towards the process of teaching-learning. Sandars et al., reported the acceptance of the approach by the learners as one of facilitating factors of this method [15]. In fact, the acceptance of this approach increases the motivation of the students to participate

in learning. Researchers, evaluating a learning experience based on CBL, asked the students to exhibit their attitude towards this method through a questionnaire. The students believed that their motivation to learn newly taught concepts increased. They were motivated to discuss the learned subjects and believed in their ability more. Also, their professional identification enhanced [11,12,14]. In the present study, students' self-attitude was measured by the criteria such as possibility of expressing ideas and opinions explicitly, promotion of critical thinking skills, giving opinion about learning as a conscious, critical, dynamic, and reactive process, evaluation of one's, teacher's, and peers' behaviour, feeling of commitment to peers, etc. Students' attitude towards the teacher was measured by the criteria like creation of an environment full of trust and respect in educational milieu, helping the student plan for achieving the purposes, giving constructive feedback, being accessible for counseling, tendency towards interest in students learning, discussion and viewpoint exchange with the student, and encouraging the students to practice independent decision taking, to identify the relationship between lesson's content and treatment milieu, etc. Generally, no significant association was obtained between behaviour and attitude in collaborative and CBL groups prior to the intervention, but a statistically significant difference was obtained in the attitude between the two groups after the intervention. However, no change was noted in students' attitude score. The results of the present study were consistent with another study [6]. The results of this study indicated that the learning increased in the students after implementation of the CBL, collaborative training, and traditional method and the learning was higher in CBL and collaborative groups than traditional. Tiwari et al., remark that the students who learn through problem solving obtain pronouncedly higher scores for critical thinking than those who learn through traditional method and the scores remain stable two years after the implementation of the method [18]. To compare collaborative and problem solving methods for learning in students, Raupach et al conducted a study on internet-based collaborative training in Germany. The final learning score was higher for virtual collaborative training than problem solving method, but no significant difference was observed between the two groups [19].

LIMITATIONS

The small sample size enrolled in this study is a barrier to the generalization of the findings.

CONCLUSION

In the light of the present study findings, use of CBL and collaborative training leads to increased learning at cognitive, psychomotor and affective domains, and improved motivation among students and healthcare staff as well as cooperation of patients.

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