

## ORIGINAL ARTICLE

### The Opinion of Nursing Students about Case-based Teaching Method and Comparison with Lecture

**Background:** One way of developing nursing education is using new teaching methods. One of this student based methods that has been introduced recently is case-based teaching method. So the aim of this study was to assess the opinion of nursing students in the case of case-based teaching method and comparing it with lecture method in Zanjan Faculty of Nursing and Midwifery in 2011.

**Methods:** This is a quasiexperimental study in which 30 senior nursing students spending the intensive care curriculum in Zanjan Faculty of Nursing and Midwifery were selected. The content of each session was divided in two parts. The first part was case-based teaching method and the second part was lecture. Each of the methods were presented during 45 minute. At the end of the session, it was asked from student to compare two methods and fill the questionnaire. Data was analyzed with SPSS software.

**Results:** According to the results, many of students completely agreed that case-based teaching method improved the reading comprehension skill of students as compared with lecture. Also the results showed that most students were highly satisfied with this new method, while the mean satisfaction rate was  $8/38 \pm 1/8$  in 0-10 scale. But there were no differences between two sexes ( $p > 0.05$ ).

**Conclusion:** According to the results we conclude that case-based teaching method has high efficacy as compared with lecture. And this is simply an applicable method. So nursing instructors can use this method to promote student learning.

**Key Words:** Teaching Method; Case-based Teaching; Lecture

### نظرة طلاب التمريض في مجال التدريس المبني على مورد و مقارنه هذا الأسلوب مع المحاضرة

**التمهيد و الهدف:** إن إحدى الأمور التي تحسن أمر التعليم في كلية التمريض هو استخدام أساليب جديدة في التعليم. إن إحدى هذه الأساليب المتمحورة حول الطالب هو أسلوب المبني على المورد. لذا تمت هذه الدراسة بهدف تحديد نظرة طلاب كلية التمريض في جامعة زنجان في مجال هذا الأسلوب و مقارنه بأسلوب المحاضرة في عام ١٣٩٠ هـ.ش.

**الأسلوب :** إن هذه الدراسة نصف تجربيه تم اشراك ٣٠ شخص من طلبة التمريض في الفصل السادس الذين كانوا في حال دراه «العناية الفائقة» تم تقسيم مطالب الدرس الى مرحلتين، المرحلة الاولى عبر اسلوب المبني على المورد و المرحلة الثانية عبر اسلوب المحاضرة و كان مقدار كل مرحلة ٥٥ دقيقة و في الختام تم الطلب من الطلبة مقارنه الاسلوبين و تم استخدام استمارات لهذا الامر و تم تحليل النتائج بواسطة SPSS.

**النتائج :** اعلى نسبة من النتائج كانت موافقه للأسلوب المبني على المورد (٧٠,٦٦ %) و كان معدل الرضا من هذا الأسلوب  $8 \pm 1/8$  و لم يكن هناك فرق من حيث الجنس في النتائج.

**النتيجه :** نستنتج أن أسلوب المبني على المورد موثر اكثر و اسهل لذا نوصي المعلمين بهذا الأسلوب لرفع مستوى التعليم.

**الكلمات الرئيسية:** أسلوب التعليم، التعليم المبني على المورد، محاضرة.

### کیس اسٹڈی اور لکچر کے بارے میں نرسنگ اسٹوڈنٹ کے نظریات کا جائزہ

**بیک گراؤنڈ:** نرسنگ کی تعلیم کو بہتر بنانے کا ایک مفید راستہ جدید تعلیم طریقوں سے استفادہ کرنا ہے۔ اس تحقیق کا مقصد طلباء کو مرکزیت دینے والی نئی روش یعنی کیس اسٹڈی کا مطالعہ کرنا ہے۔ یہ تحقیق زنجان نرسنگ اینڈ میڈیوئفری کالج میں انجام دی گئی۔ اس میں کیس اسٹڈی اور لکچر کی روش کے بارے میں طلباء کے نظریات کا جائزہ لیا گیا ہے یہ تحقیق دوہزار گیارہ میں انجام پائی۔

**روش:** یہ ایک نیم آزمائشی مطالعہ ہے جسم میں انتہائی نگہداشت کے شعبوں کی ٹریننگ حاصل کرنے والے تیس طلباء کو شامل کیا گیا۔ تحقیق کو دو حصوں میں تقسیم کیا گیا، پہلے حصے میں کیس اسٹڈی کی روش اپنائی گئی جبکہ دوسرے حصے میں محض لکچر دیا گیا۔ ہر کلاس کا دورانیہ پینتالیس منٹ تھا۔ آخر میں ان روشوں کے بارے میں طلباء کی نظر لی گئی۔ ڈاٹا کا تجزیہ ایس پی ایس پی سافٹ ویئر سے کیا گیا۔

**نتیجے:** اس تحقیق سے ظاہر ہوتا ہے کہ طلباء کی اکثریت یعنی سڑسٹھ فیصد نے مکمل طرح سے اتفاق کیا ہے کہ لکچر کے ساتھ اسٹڈی کیس مسئلے کو سمجھنے میں نہایت مفید واقع ہوتا ہے، اس کے علاوہ طلباء نے اسٹڈی کیس کی روش پر بھر پور اطمینان کا اظہار کیا ہے۔

**سفارشات:** اس تحقیق کے نتائج سے معلوم ہوتا ہے کہ روایتی لکچر کے ساتھ ساتھ اسٹڈی کیس سے طلباء کو مسائل سمجھنے میں کافی مدد ملتی ہے اور یہ ان کے لئے بے حد مفید ہے لہذا یہ درخواست کی جاتی ہے کہ طلباء کی صلاحیتوں میں نکھار لانے کے لئے کیس اسٹڈی کو ضرور مد نظر رکھا جائے۔

**کلیدی الفاظ:** روش تدریس، لکچر، اسٹڈی کیس۔

Mansoor Ghafourifard<sup>1,\*</sup>;  
Hamid reza Haririan<sup>2</sup>; Ali  
Aghajanoloo<sup>2</sup>

<sup>1</sup> School of Nursing and  
Midwifery, Zanjan University  
of Medical Sciences, Zanjan,  
Iran

<sup>2</sup> Department of Nursing,  
School of Nursing and  
Midwifery, Zanjan University  
of Medical Sciences, Zanjan,  
Iran

\* School of Nursing and  
Midwifery, Zanjan University  
of Medical Sciences, Zanjan,  
Iran

Tel:09149264132  
Tel:02417275060  
Fax:02417275060  
Email: m.ghafori@yahoo.com

### دیدگاه دانشجویان پرستاری درباره روش تدریس مبتنی بر مورد و مقایسه آن با روش سخنرانی

**زمینه و هدف:** یکی از راه های بهبود آموزش پرستاری، استفاده از الگو های نوین تدریس می باشد. یکی از این روش های دانشجوی محور که اخیرا مطرح شده، تدریس مبتنی بر مورد می باشد. لذا این پژوهش با هدف بررسی دیدگاه دانشجویان پرستاری دانشکده پرستاری و مامایی زنجان درباره روش تدریس مبتنی بر مورد و مقایسه آن با روش سخنرانی مقایسه روش تدریس مبتنی بر مورد با روش سخنرانی در سال ١٣٩٠ انجام شده است.

**روش:** این پژوهش یک مطالعه نیمه تجربی است که در آن، ٣٠ نفر از دانشجویان ترم ٦ پرستاری که در حال گذراندن واحد پرستاری مراقبت های ویژه بودند انتخاب شدند، مطالب جلسه به دو بخش تقسیم شد بخش اول بر اساس الگوی تدریس مبتنی بر مورد و بخش دوم از طریق سخنرانی ارائه شد. و هر یک از بخش ها ٤٥ دقیقه طول کشید. در پایان جلسه از دانشجویان خواسته شد تا این دو روش را مقایسه کرده و پرسشنامه مطالعه را تکمیل نمایند. داده ها با استفاده از نرم افزار SPSS تجزیه و تحلیل شد.

**یافته ها:** بر اساس نتایج مطالعه، بیشترین نسبت نمونه ها (٦٦/٧ درصد از دانشجویان) کاملاً موافق بودند که روش تدریس مبتنی بر مورد در مقایسه با سخنرانی باعث افزایش درک مطلب دانشجویان می شود. همچنین، نتایج مطالعه نشان داد که اکثریت دانشجویان از این روش جدید رضایت خیلی بالایی داشتند بطوری که در مقیاس ١٠ امتیازی، میانگین رضایت آنها  $8/38 \pm 1/8$  بود. اما تفاوت معنی داری بین دو جنس یافت نشد ( $p > 0.05$ ).

**نتیجه گیری:** بر اساس نتایج نتیجه می گیریم که روش تدریس مبتنی بر مورد در مقایسه با سخنرانی کارایی بیشتری دارد و از آنجا که این روش بسیار آسان بوده و به سهولت قابل اجراست بنابراین مربیان پرستاری می توانند از این روش برای ارتقاء یادگیری دانشجویان استفاده نمایند.

**واژه های کلیدی:** روش تدریس، تدریس مبتنی بر مورد، سخنرانی

## INTRODUCTION

The nursing science has been changing daily specially in the last two decades. In today's technologically advanced world, the challenge for nursing faculty is to teach students critical thinking (CT) skills and the ability to practice competently in a variety of clinical situations (1). The main goal of nursing education is to transfer nursing science to students and help them to enhance the required skills and insights for nursing care (2). For fulfilling new educational needs in nursing, nurse educators must be aware of diversity of learning environments and new teaching methods and the use of these methods for teaching. Also instructors must help the students to enhance their ability for problem solving in future (3). According to Fitzpatrick (2004), teaching is a complex activity that involves mastery of content, classroom discipline, techniques of organization, and teaching skills (4).

One way to enhance and develop nursing education is to determine the effect of teaching methods on nursing students' achievements and teaching effectiveness at nursing colleges. Today the focus is on changing educational methods from traditional to new teaching methods that causes active learning in students. Moreover, in nursing education the interest in improving students' achievements and the quality of teaching effectiveness have been increased over the time (5,6).

In general, teaching methods are categorized in two groups. First group is teacher-centered methods, such as lecture (7). In these methods, the teacher speaks most of the time (8). In traditional teaching method, only the teacher decides on teaching-learning process. This method tends to produce shallow, surface thinkers who primarily rely on rote memory rather than careful understanding of the content (9). Second group is student-centered teaching method. In this method, student is active during the learning process. And now this form of teaching is focused (10).

Nursing is a practice based profession in which the use of teacher centered methods decreases the effectiveness of teaching and student achievements. Students must participate actively in the teaching process and they must not be inactive audiences merely. So, nursing instructors could use nontraditional teaching methods to help students to learn critical thinking and problem solving skills (6). The development of these skills requires students to engage in discussions to become active participants in their own learning (11). Basic elements of active learning include talking, active listening, reading, writing, and reflecting (12).

One of these strategies that lead to active learning in students and prepares them for implementing nursing care, is case-based teaching method. This method was first introduced in the 1870s by Harvard school faculty. But it was not used for several years. It was used in business and law schools at Harvard University in 1999. Lately, case-based teaching has been adopted by various disciplines including nursing both as a teaching strategy and as a problem-solving and decision-making tool (13).

Case based teaching engages students and teachers in active

dialogue about nursing situations by helping learners analyze an authentic case to identify client problems, compare and evaluate optional solutions, and decide how to deal with clinical situations. This method demands active participation and interaction between the learner and teacher. It also offers students opportunities to discuss real-life situations and nursing challenges in a safe environment and stimulates students to think critically about the cases (14). In fact, this method can be defined by contrasting it with the traditional lecture-based method (13).

In the Case Method, a 'case' is built up as a scenario by teacher around a real situation and presented in classroom. The situation contains a problem that must be solved and requires decision-making. The Case Method requires a certain amount of time (45-90 minutes) and usually only one case can be addressed per sitting. This works well with groups of up to 20-30 students. The teacher presents the scenario and the students listen and take notes carefully. Then they will have the opportunity to think about it. The teacher asks open ended question. What is the scenario? The students are involved in discussions and the teacher gives any necessary information such as lab tests, symptoms, etc. The teacher's role is to act as an initiator/moderator/facilitator for the group discussion and directs the students to goals (15).

Case based teaching can be used to meet educational goal, facilitate learning for application in clinical environment and problem solving strategy. This method is used to explore and describe a case and help to develop science about real-life situations (16).

Despite the diversity of new teaching methods, the nursing faculties seldom use these methods and nursing education is done by traditional methods. Although the case method is used in many academic disciplines, the scientific base of this method is lacking for the design, effect and evaluation of teaching cases (17). So the aim of this study was to assess the opinion of nursing students about case-based teaching method and comparison with lecture in Zanjan Faculty of Nursing and Midwifery in 2011.

## METHODS

This is a quasi-experimental study in which 30 senior nursing students spending the intensive care curriculum (dialysis, 0.5 unit) in Zanjan Faculty of Nursing and Midwifery were selected. The content of session was divided randomly in two parts. First part (acute renal failure) was presented with case-based teaching method and the second part (chronic renal failure) included lecture. Each method was done during 45 minute. These subjects were selected for teaching according to the researchers' experience and similarity of content.

In this study we used the following five stages for case-based teaching suggested by Kaddoura(13): 1) The case study needs to focus on the most important concepts to be learned. 2) the teacher should consider different questions about the case. 3) the learning environment needs to be open, safe, and nonthreatening to facilitate students' participation. 4) all students should be engaged in the learning activity. 5) Summarizing the key points by the teacher is essential.

At the beginning of the session, the objectives were said and a case was presented. The case was a 26 yr old woman who had severe bleeding during caesarian section. She had hypotension symptom (systolic BP= 60-90mmHg) and rapid pulse (120 per min). She was relatively conscious. Her skin was cold and wet. She had nausea and vomiting. Other symptoms and manifestation of disease were shown to the students. Laboratory tests, medical graphies and urine analysis were explained (urine output=12cc/hr, K=6/2 meq/dl, BUN=45, Cr=3/1). Then the teacher asked students to participate actively in classroom discussion and diagnosis of her disease. Finally the renal failure diagnosis was identified by students according to the teacher guidelines. Since this complication had been occurred during a day, it was considered acute renal failure. In each step, the teacher explained the symptoms and treatment of acute renal failure and the students were referred to the

case that was mentioned at the beginning of the session and they discussed about it. The teacher asked different questions about the case and the students learned the disease gradually. This process was continued to the end of the session. Then the conclusion was made by teacher.

At the second part of the session, the chronic renal failure was presented through lecture during 45 min.

At the end of the session, the students were asked to compare two methods and fill the questionnaire.

The self constructed questionnaire was used for data collection. This questionnaire had two sections. Section 1 collected demographic data and section 2 contained 20 items about the comparison of case-based teaching method with lecture from the view point of nursing students. The students were asked to express their opinion about each item according to the 5 point Likert scale (absolutely agree, agree, no idea, disagree, absolutely disagree). At the end

**Table 1: the student's opinion about comparison of case-based teaching method with lecture.**

Items	absolutely agree n(%)	agree n(%)	no idea n(%)	disagree n(%)	absolutely disagree n(%)
1. Case based teaching method have a better cover for objectives as compared with lecture	18(61.9)	9(28.6)	3(9.5)	-	-
2. Case based teaching method is attractive than lecture	17(57.1)	9(33)	2(4.8)	2(4.8)	-
3. Case based teaching method increases the reading comprehension of students as compared with lecture	20(66.7)	5(19)	3(9.5)	2(4.8)	-
4. Collaboration of students during the teaching process in case based teaching is higher than lecture	15(52.4)	11(38.1)	2(4.8)	2(4.8)	-
5. Case based teaching method is closer to real as compared with lecture	15(52.4)	9(28.6)	3(9.5)	3(9.5)	-
6. Case based teaching method increases students motivation for learning as compared with lecture	17(57.1)	4(14.3)	9(28.6)	-	-
7. Case based teaching method increases the students imagination skills as compared with lecture	17(57.1)	9(28.6)	3(9.5)	2(4.8)	-
8. Case based teaching method facilitates the students learning as compared with lecture	17(57.1)	11(38.1)	2(4.8)	-	-
9. The information is well organized in case based teaching as compared with lecture	13(42.9)	11(38.1)	4(14.3)	2(4.8)	-
10. Case based teaching method is applicable than other teaching methods	17(57.1)	5(19)	5(19)	2(4.8)	-
11. Retention of knowledge in case based teaching method is perceived to be increased as compared with lecture.	18(61.9)	9(28.6)	3(9.5)	-	-
12. Many curriculum of nursing science is presentable with case based teaching method	14(47.6)	9(28.6)	4(14.3)	3(9.5)	-
13. Case based teaching method increases self esteem of students as compared with lecture	13(42.9)	9(28.6)	6(23.8)	2(4.8)	-
14. Case based teaching method decreases monotonous situation of classroom as compared with lecture	11(38.1)	11(38.1)	4(14.3)	3(9.5)	-
15. Case based teaching method persuades the students for deep thought as compared with lecture	15(52.4)	10(33.3)	4(14.3)	-	-
16. There are a lot of opportunity to question and response in case based teaching method as compared with lecture	15(52.4)	10(33.3)	4(14.3)	-	-
17. If we use case based teaching method in clinical settings, its efficacy will be increased	15(52.4)	13(42.9)	2(4.8)	-	-
18. The students knowledge is well assessed and evaluated in case based teaching method as compared with lecture	9(28.6)	14(47.6)	4(14.3)	3(9.5)	-
19. Summarization and conclusion is better done at case based teaching method as compared with lecture	14(47.6)	13(42.9)	3(9.5)	-	-
20. Case-based teaching method is better than lecture in overall	20(66.7)	9(28.6)	2(4.8)	-	-

part of questionnaire, the students were asked to determine the rate of their satisfaction about case-based teaching method in a 0-10 point scale.

Content validity of questionnaire was obtained and the Alpha Chronbach was 0.85. For prevention of bias, data was analyzed by another person. Data was analyzed with SPSS ver. 16 software and descriptive frequency and  $\chi^2$  test.

For ethical considerations, all participants signed an informed consent after being informed adequately of the research study. They were assured of their anonymity and confidentiality of their information. Participants were informed that participation was voluntary and that they were free to withdraw at any time without affecting their current or future academic course assessments. All data was used only for research purposes.

## RESULTS

A total of 30 third-year baccalaureate nursing students (16(53/3 %) female, 14(46/7%) male) participated in this study. They were all (100 %) single and their mean age was  $22/35 \pm 1/8$ .

Table 1 demonstrates the students' opinions about the comparison of case-based teaching method with lecture.

According to the results, the majority of participants (66/7%) completely agreed that case-based teaching method improves the reading comprehension skill of students as compared with lecture and it was the main characteristic of case-based teaching.

Also 61.9 percent of students said that case-based teaching have a better cover for objectives and retention of knowledge is perceived to be increased as compared with lecture.

More than half of the students (57.1%) declared that case-based teaching is more attractive than lecture and increases students' motivation for learning. Moreover, this method facilitates student learning and is applicable as compared with other teaching methods (Table 1).

The majority of students (66.7%) agreed that case-based teaching method is better than lecture in overall.

Also the results showed that the students were highly satisfied with this new method, the mean score of satisfaction was  $8.38 \pm 1.8$  in a scale ranged from 0 to 10. But there was no differences between the two sexes ( $p > 0.05$ ). Data analysis by chi square test showed no difference between the two sexes about the characteristic of case-based teaching as compared with lecture.

## DISCUSSION

Nowadays teachers are seeking the teaching methods that causes active learning in students (19). Case-based teaching method is a student- centered method which facilitates student learning as a case is presented by teacher (13).

In this study, 66.7 percent of participants completely agreed that case-based teaching method improves the reading comprehension skill of students as compared with lecture. These results are consistent with the findings of Kunselman et al. (2004). They found that case-based teaching is an effective method for developing of student learning (20). According to Russelt (2007), this method is a student-centered method which stimulates active participation of

students (19). Kaddoura (2011) proposed that case-based teaching offers learners opportunities to make meaning of their own world of nursing through active participation in their own learning, developing inquiring minds and awareness of knowledge (13). Furthermore, this method is helpful in recalling details and facts (12).

From the students' viewpoint, retention of knowledge in case-based teaching is perceived to be increased and it increases students' motivation for learning. These findings are in line with Stjernquist (2007) (15). According to Richardson (2008), the effective teaching key is active learning (22).

Moreover, when the students engage in their learning, they will enjoy it and it promotes motivation and so, retention of knowledge is perceived to be increased (23).

In our study, the majority of students believed that this new method is more attractive than lecture. According to Kaddoura (2011), it is satisfying for educators to think that students might enjoy themselves while being engaged in their learning, as they learn something useful (13).

According to the results, collaboration of students in case teaching is high as compared with lecture. Kaddoura (2011) concluded that case-based teaching has been found to be a more effective instructional method than conventional lecture-based teaching for promoting students' critical thinking and decision-making skills. So, he recommended this method in nursing faculty (13). While in lecture, the students are inactive (18).

In overall assessment, 85.4 percent of students were highly satisfied with case-based teaching. This result is consistent with kim et al. (2006) who found that this new method is more effective than lecture and develops critical thinking and decision making skills (17).

Although lecture is a traditional teaching method and used in nursing (7), its efficacy is low (13). But there are some advantages for lecturing in the way that novice nursing students need teaching on unfamiliar information and how to use the acquired information (24). Charlton (2006) believes that lecture has low efficacy alone, but when it mixed with other active teaching method such as questioning and group discussion helps the students learning (8).

Similarly, Kaddoura (2011) conducted a study and found out that mean score of students critical thinking was high in case method (13). This corroborates to the experiences of Schaefer and Zygmunt (2003) who also found that effective teaching requires nursing educators shift from a teacher centered to student – centered approach, which can foster independence in learning, creative problem- solving skills, a commitment to life- long learning and critical thinking (25).

In this study, case method was considered applicable in nursing education. These results are consistent with the findings of others (15, 26-31). Popil (2011) concluded that nurse educator must use case based teaching method in nursing faculty to develop critical thinking skills in students and nurses (18).

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