ORIGINAL ARTICLE

دراسة وجهة نظر الطلاب المتدربين حول استخدام اسالوب التعليم القائم على حل المسائل في قسم القلب

مقدمة: في هذه المقالة قمنا بدراسة آراء طلاب قسم التشريح حول التعليم بالطرق التقليدية وطريقة المباحثة

طريقة العمل: تم اجراء هذه الدراسة التحليلية في قسم القلب في مستشفى وليعصر في مدينة بيرجند خلال عام ٨٩ ـ ٩٠. وفي هذه الدورة التي استغرقت شهراً كاملاً في قسم القلب تم اجراء ٥ جلسات تعليمية بطريقة المباحثة حيث قام استاذ الجلسة التعليمية بتهيئة ملف باوربوينت يتعلق بأحد الأمراض الشائعة. بداية تم طرح بعض العلامات التشريحية، ثم بدأ الطلاب بالسؤال عن هذه العلامات والاستفسار عن العلائم السابقة لها، وحينها يبدأ أستاذ الجلسة بعرض هذه العلامات. وفي نهاية البحث يتم الحديث عن التشخيص الافتراضي والتشخيص القطعي والتنافق حول مداواة المرض وفي نهاية الدورة تم تقديم استطلاع للطلاب يشتمل على عشرة أسئلة حول مقارنة الطريقة المقدمة في الدورة والطرق التقليدية للتعليم السريري. ثم تم جمع المعلومات وتشفيرها باستخدام برنامج SPSS.

النتائج: طيلة هذه السنة تم تعليم ٤٠ متدرب داخلي و ٣٠ متدرب (٥٠ نساء، و ٢٠ رجال) تم تدريبهم في قسم القلب على طريقة المباحثة معدل درجات آراء كل الطلاب ٥/٣٦±٤٢/٢٠ من مجموع ٥٠ درجة. وهذا يؤكد نظرة الطلاب الايجابية لطريقة المباحثة بالنسبة إلى الطريقة التقليدية. ٨٤ بالمئة من الطلاب اعتقدوا أن حجم المعلومات المنتقلة اليهم خلال هذه الجلسة (سواء النساء أو الرجال) لم تختلف اختلافاً حقيقياً في كل المقاطع العشرة المذكورة. فدرجة طلاب قسم التدريب في كل المجالات كانت أعلى من درجة طلاب قسم الداخلي لكن هذا الاختلاف كان فقط في مجال التعليم المركز. (٤/١±٠/٨ لدى المتدرب الداخلي٠/٥±٠/٦/ ٤٤/٦±٠/٥ (P=0/016

الاستنتاج: أظهرت نتائج المطالعة أن آراء الطلاب مثبتة فيما يتعلق بالتعليم السريري على طريقة المباحثة ويمكن اعتماد هذه الطريقة كطريقة تعليم حديثة إلى جانب باقي الطرق الأخرى.

الكلمات الرئيسية: المتدرب العام،المتدرب الداخلي(المتخصص)،التعليم السريري،الطريقة التعليمية التي تعتمد على حل المسائل

Study of the viewpoint of Medical Interns and Externs toward Using Problem- based Learning Method in Cardiac Ward, Birjand 2011

Background: In the present study, we studied the clinical students' viewpoints toward traditional and case study training methods.

Methods: This analytical descriptive study was conducted in cardiac ward of ValiAsr Hospital in Birjand from 1389 to 1390. 5 training sessions in the form of case presentation were held during a one-month course in cardiac ward. The trainer prepared a PowerPoint file of a common disease before the start of the class. At the beginning of the discussion a clinical symptom was presented then students asked questions about the history, previous records, par clinical signs, and etc. based on the mentioned symptom and the trainer presented them. At the end of the discussion differential diagnosis and final diagnosis were presented and treatment of the disease was discussed. At the end of the course a researcher made questionnaire including 10 questions in the case of comparing the above mentioned method and the common clinical teaching method was distributed among students. Then data was coded and analyzed by SPSS.

Results: During this one year, 40 externs and 30 interns (50 females and 20 males) were trained through case study method in cardiac ward and the average score of the viewpoints of all students was 42.20±5.36 out of 50 which shows that students have a positive point of view to case study method compared with the traditional method. There was not a significant difference between the viewpoints of male and female students in any of the ten mentioned fields. The score of the externs' viewpoint in all the fields was higher than interns', but this difference was just significant in the case of deep learning (4.1±0.8 in interns, 4.6±0.5 , P=0.016).

Conclusions: The results of the study showed that students had a positive viewpoint toward clinical training through case study and this method can be used as a new educational method alongside other methods.

Keywords: Intern; Extern; Clinical Training; Problem-based Learning

Toba Kazemi[1,*], Mohamad Khodashenas[2], Nafise Pourbadakhshan[3], Amir Rahmanian Sharifabad [3]

[1]Birjand Atherosclerosis and Coronary Artery Research Center, Birjand University of Medical Science, Birjand, Iran
[2]Department of Internal Medicine, Birjand University of Medical Sciences, Birjand, Iran
[3]Student Research committee, Birjand University of Medical Science, Birjand, Iran

*Birjand Atherosclerosis and Coronary Artery Research Center
Pasdaran Street
Birjand, 9717964151,
IRAN
Tel: +98 561 223 4717
Fax: +98 561 443 3004
Email: drtooba.kazemi@gmail.com
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شعبہ قلب میں مسئلے کو حل کرنے کے طریقے کی تعلیم کے بارے میں طبی طلباء کے نظریات۔

بیک گراؤنڈ: ہم نے اس تحقیق میں کلینیکل طبی طلباء کو روایتی اور عملی روش کے بارے میں اپنے نظریات بیان کرنے کی دعوت دی۔

روش: یہ توصیفی تحقیق بیرجند شہر کے ولی عصر اسپتال کے کارڈیاک ڈپارٹمنٹ میں انجام پائي اور ایک مہینے تک پانچ جلسے منعقد ہوے جن میں طلباء کو ایک مریض پر کام کرنے کی ذمہ داری دی گئي تھی۔ کلاس کے آغاز میں لکچرر کسی عام بیماری کے نکات بیان کرتا تھا اس کے بعد بحث کی ابتدا میں ایک کلینیکل علامت کا بھی ذکر کرتا تھا اس کےبعد طلباء پیرا کلینیک علامتوں کےبارے میں سوال پوچھتے تھے اور لکچرر عملی طور پر ان کے جواب دیتا تھا۔ آخر میں الگ الگ مسائل کی تشخیص اور حتمی تشخیص دی جاتی تھی اور بیماری کا علاج کیا جاتا تھا۔ اس کے بعد دس سوالوں مشتمل ایک سوالنامہ پیش کیا جاتا تھا جس میں روایتی تدریس اور نئي تدریس کی روش کا مقابلہ کیا گیا تھا۔ طلباء کے جوابوں کا ایس پی ایس ایس سافٹ ویر سے تجزیہ کیا گیا تھا۔ یہ تحقیق دوہزار دس اور دوہزار گیارہ میں انجام دی گئي۔

نتائج: اس سال چار طلباء اور چالیس طلباء اور تیں انٹرن طلباء جن میں پچآس لڑکیاں اور بیس لڑکے شامل تھے اس طرح کی ٹریننگ دی گئي۔ یہ ٹریننگ شعبہ قلب میں انجام پائي۔ عملی روش کی نسبت طلباء نے مثبت نظر کا اظہار کیا۔ لڑکے اور لڑکیوں کے نظریات میں کوئي خاص فرق نہیں تھا۔

سفارش: اس تحقیق سے پتہ چلا ہےکہ طلباء عملی روش کو زیادہ پسند کرتے ہیں اور اس روش سے نئي روش کی حیثیت سے تدریس کے دیگرشیووں کے ساتھ استفادہ کیا جاسکتا ہے۔

کلیدی الفاظ: طلباء، کلینکل ٹریننگ، مسئلے کو حل کرنے کی روش۔

بررسی دیدگاه دانشجویان پزشکی در مقاطع کار آموزی و کارورزی نسبت بکارگیری روش آموزش مبتنی بر حل مسئله در بخش قلب

مقدمه: ما در مطالعه حاضر به بررسی دیدگاه دانشجویان بالینی نسبت به اموزش به روش سنتی واموزش به روش معرفی مورد پرداختیم.

زمینه و هدف: این مطالعه توصیفی تحلیلی دربخش قلب بیمارستان ولیعصر بیرجند درسال۹۰-۸۹انجام شد. در دوره یک ماهه بخش قلب ،۵جلسه آموزشی به صورت معرفی مورد برگزار می شد. استاد اموزش دهنده قبل از شروع کلاس فایل پورپوئینت مربوط به یک بیماری شایع را اماده میکرد. در ابتدای بحث یک علامت بالینی مطرح میشد سپس دانشجویان بر اساس علامت فوق سئوالاتی راجع به شرح حال ،سوابق قبلی، علایم پاراکلینیک و... را میپرسیدند و استاد آنها را نمایش میداد. در انتهای بحث تشخیص افتراقی، تشخیص قطعی و بحث در رابطه با درمان بیماری صورت می گرفت. در پایان دوره پرسشنامه ای محقق ساخته شامل ۱۰سئوال در رابطه با مقایسه روش فوق و تدریس متداول بالینی در اختیار دانشجویان قرار د اده شد.سپس اطلاعات کد بندی شده ودر نرم افزار SPSS آنالیز آماری صورت گرفت.

یافته ها: در طی این یکسال ۴۰ کار اموزو۳۰ کارورز(۵۰دختر و۲۰ پسر) در بخش قلب به روش معرفی مورد اموزش دیدند میانگین نمره دیدگاه کل دانشجویان ۵/۳۶±۴۲/۲۰ از ۵۰ نمره بود که نشان می دهد دیدگاه دانشجویان در رابطه با روش بحث مورد نسبت به روش سنتی مثبت می باشد. بین دیدگاه دانشجویان دختر و پسر در هیچیک از زمینه های ده گانه فوق تفاوت معنی داری وجود نداشت. نمره دیدگاهدانشجویان مقطع کارورزی در همه زمینه ها بالاتر از دانشجویان مقطع کارآموزی بود اما این تفاوت فقط در زمینه یادگیری عمیق معنی دار بود. (۰/۸±۴/۱ درکاراموز، ۰/۵±۴/۶ /۰/۵±۴/۶، P=۰/۰۱۶)

نتیجه گیری: نتایج مطالعه نشان داد دیدگاه دانشجویان به اموزش بالینی به صورت بحث مورد مثبت بوده و میتوان از این روش به عنوان یک روش نوین اموزشی در کنار سایر روشها استفاده کرد..

کلمات کلیدی: کار اموز، کارورز، آموزش بالینی، روش آموزش مبتنی بر حل مسئله

INTRODUCTION

Teaching is one of the educational processes that plays an effective role in the efficiency of educational system (1). Inventing new educational methods, their improvement and development is one of the aims of organizations involved in educational issues. In educational programs two general patterns of student-centered and teacher-centered can be observed (2).

Medical students face large and vast amounts of scientific and practical topics which can't be just learned through memorization. On the other hand, the responsibility of medicine is saving humans' lives. Therefore, effective and active learning is necessary for students of these fields, so that they would guarantee their professional and scientific successes (3).

Clinical training is preparing students for matching their basic scientific knowledge with skills, through diagnosis and treatment, patient care, and achieving different kinds of professional skills (4). As the aim of clinical training is to provide chances for students to connect their theoretical information with practice (5). Improving the quality of clinical training can train qualified students in different clinical fields (6).

In famous universities, it's a long time that different teaching methodologies such as small groups, case study, problem based learning are performed and replaced traditional methods (7-9).

Generally, PBL is active getting of information through problem analysis and trying to get their answers. PBL is one of the most important improvements of medical education in recent years of 20th century. The main idea of PBL is that the start of learning should be with a problem so that the learner is encouraged to learn and solve the problem. The students themselves have to work on the problem and get the necessary knowledge to solve it. In the traditional model the students learn the necessary knowledge for solving the problem before facing it, while in PBL knowledge is achieved from working out the problem (10, 11).

One of the suitable teaching methodologies is case presentation. In this method, the students test their ability to solve the problems in real clinical situations without the presence of patients. A description and explanation of a problem is given to the students, and then all the students participate actively in discussing and explaining the matter. Studies have shown that case presentation is an appropriate tool for clinical-scientific training and planning problems through using documented medical principles is a selected method for presenting cases based on clinical reasoning case study and is very practical. Because in this method learners will completely participate in the discussion and their mental process is completely active (12). Various students have been conducted in relation with this educational method (12-14), but no studies have been conducted about this method in cardiac ward, and according to the vast epidemic of cardiovascular diseases and the necessity of more familiarity of medical students with treating and diagnostic methods of these diseases we conducted this study (15).

Therefore, we decided to conduct a study for studying the viewpoints of students in the department of cardiology toward case study and take a step toward improving medical education.

METHODS

This is an analytical descriptive study which has been conducted in the framework of evaluating case study program in cardiac ward.

In this study according to the achievements of the fifth meeting of general medical education association on 2212.2009 based on obligatory cardiac program in internship and externship, the necessary educational subjects of interns and externs were prepared on a CD through PowerPoint. For preparing this CD professors of cardiac ward and an internal specialist helped. Each case started with a clinical sign (for example: a 45 year old patient suffering from chest pain) then the history of patients were explained and students were asked to request their required paraclinical test. After that paraclinical tests were done step by step and some questions about differential diagnoses and necessary treating and diagnostic steps were asked and discussed by the trainer. Finally, the final diagnosis was determined and a short lecture was given based on Harrison 2008 and 2011. After preparing the CD, it was given to professors of cardiac ward to get their tips. For preparing this CD cases of USMLE step 1-3 and 250 cases and interesting cases adopted in cardiac ward of Vali Asr Hospital of Birjand were used(16-18). And after that every week, one day students were trained by the information of this CD and one day through the traditional method by the same professor. At the end of the month a questionnaire was given to students for comparing this method with the common method of ward (traditional). In the one-month course of cardiac ward, 5 training sessions were held through case presentation. The questionnaire included demographic questions (age, gender, level) and questions about the quality of teaching and answers were planned like completely disagree, disagree, neutral, agree, completely agree and they were scored as 1-5 respectively. This study was conducted on all interns and externs who were passing the one-year course in cardiac ward (Jan. 2010-Jan. 2011. In this study all the students were included and there were not any excluding criteria. From the ethical view all the questionnaires did not include names and all the answers were totally confidential. Data was analyzed by descriptive statistics; independent t-test, $\alpha = 0.05$.

RESULTS

In this study, 70 medical students of Birjand University of medical sciences with the average age of 23.86 ± 1.22 participated, among whom there were 50 females and 20 males, (40 interns and 30 extren).

Based on the results of this study, participants in reply to the related questions for comparing the understudy method with the traditional method evaluated the effect of these sessions positive. The average of the score of the whole viewpoint of students in the case of case study method compared with traditional method was positive.

As it can be seen in table 1, more than 84% of the students

agreed and completely agreed in the cases of increasing skills in diagnosing in case study method compared with traditional method. 64% of student agreed and completely agreed in increasing skills in idea presentation and about 24% were neutral in this case. In the case of the increase of achieving new skills and satisfaction rate, 90% believed that case study method is better than traditional method.

In the case of learning, creating scientific challenges, matching content with real needs, deep learning, the possibility of using professors' experiences and the rate of knowledge improvement more than two thirds of students agreed and completely agreed on the case study method.

In table number 2, the comparison of the extrens' and interns' viewpoints in the case of case study method is presented. As it can be seen the scores of interns' viewpoint are higher than extrens' in all fields but this difference has been meaningful in the case of deep learning (P=0.016).

There was not a significant differences between the males' and females' viewpoints in any of the ten fields (P>0.05). The score of females' viewpoint was higher than males' (42.34±5.4 against 41.85±5.37) but there was not a significant relationship (P=0.733).

It is worth mentioning that the average of the score of interns' viewpoints was higher than extrens' (43.33±4.88 against 41.35±5.61) but this difference was not meaningful (P=0.127).

Table 1. Frequency distribution of students in different fields

Field	Completely disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Completely agree N (%)
Increasing skills in diagnosis	1 (1.4)	2 (2.9)	8 (11.4)	35 (50)	24 (34.3)
Ability in idea presentation	0 (0.0)	5 (7.1)	17 (24.3)	30 (42.9)	18 (25.7)
Taking up new skills	0 (0.0)	0 (0.0)	6 (8.6)	35 (50)	28 (40)
Accelerating learning	0 (0.0)	2 (2.9)	7 (10)	25 (35.7)	36 (51.4)
Satisfaction rate	0 (0.0)	2 (2.9)	5 (7.1)	25 (35.7)	38 (54.3)
Creating scientific challenges	0 (0.0)	3 (4.3)	11 (15.7)	29 (41.4)	27 (38.6)
Deep learning	0 (0.0)	0 (0.0)	11 (15.7)	27 (38.6)	32 (45.7)
Matching content with real needs	0 (0.0)	0 (0.0)	12 (17.1)	30 (42.9)	28 (40)
Possibility of using instructors' experiences	0 (0.0)	4 (5.7)	7 (10.0)	26 (37.1)	33 (47.1)
Rate of knowledge improvement	0 (0.0)	1 (1.4)	10 (14.3)	31 (44.3)	28 (40.0)

Table 2. Comparison of the score of interns' and externs' viewpoint in different fields

Field	Level	Mean(SD)	Mode	P Value
Increasing skills in diagnosis	extern Intern	4.1 (0.8) 4.2 (0.8)	4 4	0.706
Ability in idea presentation	extern Intern	3.8 (0.9) 4.0 (0.9)	4 4	0.330
Taking up new skills	extern Intern	4.1 (0.8) 4.4 (0.6)	4 4.5	0.125
Accelerating learning	extern Intern	4.3 (0.8) 4.4 (0.7)	4.5 5	0.542
Satisfaction rate	extern Intern	4.4 (0.7) 4.5 (0.8)	4.5 5	0.387
Creating scientific challenges	extern Intern	4.1 (0.8) 4.2 (0.9)	4 4	0.221
Deep learning	extern Intern	4.1 (0.8) 4.6 (0.5)	4 5	0.016*
Matching content with real needs	extern Intern	4.1 (0.7) 4.3 (0.7)	4 4	0.292
Possibility of using instructors' experiences	extern Intern	4.1 (0.9) 4.4 (0.8)	4 5	0.261
Rate of knowledge improvement	extern Intern	4.2 (0.7) 4.3 (0.7)	4 4	0.428

* significant P Value

DISCUSSION

This study was conducted with the purpose of achieving a practical pattern for practicalizing the strategy of PBL and methodologies based on evidences and cases in the education of extrens and interns.

Computer has been considered as an appropriate learning tool since its invention. Computers are used as a mediator for different kinds of training. This kind of educational relationship gets different names such as computer-mediated-communication (CMC). In this method educational films,real pictures,and animation could be used (19).

Although this study has been planned based on problem solving and in training students case based PBL has been mostly used. But generally speaking usual steps of PBL teaching have not been followed and it has been mixed with CMC.

Based on the current study the average score of interns' viewpoints in all fields is higher than extrens' but this difference has been meaningful just in the field of deep learning ($P=0.016$). These statistics show that interns assessed the new methodology as more appropriate because of a different view toward educational topics, because during interny period, students face responsibilities such as examining patients' problems, taking diagnostic and treating actions and taking necessary cares during adoption while during externy mostly getting history, doing physical examination, and recording the process of disease are expected. On the other hand, according to the fact that in this method clinical cases refereed to emergency ward and clinic have been included and intrens are more in contact with patients in emergencies and clinics, listening to the educational topics thought by the new methodology more interested by with more motivation and learned deeper and evaluated with more appropriate in creating scientific challenges in the educational environment. Creating conditions for question and answer and making the learner to thinks in the educational session, are issues that provide the motivation for learning and participation in the discussion for most students. 84% of students believed that the amount of knowledge conveyed to them during this session was more than the traditional method. Another element of evidence based medicine is clinical experiences of the physician. It is interesting that providing the possibility of using this aspect by 84% of participants was announced more than the traditional method. Such a result rejects the normal belief about evidence based and problem based learning methodologies being time consuming (13).

Another issue which has been emphasized in this study is planning disease problems as an educational tool. In about 83% of cases replies stated that the content has matched their real needs more than the traditional method. In selecting disease problems, practicality of matters has been very much important and it has been attempted that the planned problems were the same or similar to real situation. Selecting disease cases as a problem and presenting its different parts like steps caused students to express their answers in each step. Then different real treating and diagnostic selections were presented to them and a discussion was held for solving imaginary patients' problems and the methods of facing similar conditions were trained. In this manner scientific strict training or lecturing had changed to an active and dynamic program for better learning of students. On the other hand, educational topics were totally organized and presented to studens practically.

These results have been achieved in a similar study by Peyman Adibi et al. in which all the participants had evaluated the effect of training sessions positive and in the case of scientific challenge 54.8%, about learning matter during sessions 80.6%, matching content with real needs of workplace 77.4%, the possibility of using professors' experiences 77.2% and the amount of knowledge transfer in limited time 67.6% of the participants evaluated case presentation better than traditional lecturing method (12).

In Kong ZX et al.'s study PBL and case presentation methods were meaningfully better than the traditional method ($P<0.05$) (14).

In Dianati's study,nursing students were trained through two methods of PBL and lecturing.The mean score of students in both method were not significantly different.But a survey of students' opinions showed that in PBL communication skills,motivation,and interaction abilities are more improved which is similar to our results.(20)

In Zarghi's study ,30 faculty members participated in PBL workshop.In the end,most of them considered this method as practical,interesting,and effective in their and students' scientific progress (21).

Using case study as one of the new methodologies of teaching not only provided enough chances for discussing issues and important topics in class, but also changed students' state from passive in to active. Also the results of this study can help instructors to make decisions in the case of choosing new teaching methodologies or mixing these methodologies with traditional methods.

Study Limitation

In our study there were some limitations. The number of participants was not enough and according to the few number of students in our university including more participants was not possible. One of the most important limitations of our study was little time for conducting this study that according to the one month period of cardiac externship and internship this problem could not be solved. We couldn't compare this method with the traditional method from the point of affecting the quality of teaching and learning.

As our study faced the problem of time limitation and also for conducting such a method a group (including programmers and case planners, …) was needed, it is suggested that future studies are done in a vaster level, in major wards like internal or with better plans and forming departments with this teaching methodology in different clinical words.

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