

Comparison the Effect of Two Education Method "Electronic and Lecture Education of Pain Management" on Knowledge and Attitude Regarding Pain in Nursing Student at Zabol and Zahedan Medical University in 2014

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Background: Pain alleviation and its prevention is one of the nursing priorities. Morbidity and mortality, time of hospitalization and its cost diminished by adequate pain management. according to the importance of innovative educational method, the current study conducted.

Methods: This quasi-experimental study conducted on under-teaching nursing students at Zabol and Zahedan College. 60 students were divided in two groups that include 30 persons in each. Data of knowledge and attitude was collected by a reliable questionnaire in two stages, before and after training. Data was analyzed with SPSS software.

Results: In total, average ages of students were 21.48 ± 1.74 years, 24 males and 36 females. As sequent, Knowledge and attitude average score in two group before intervention were 18.33 ± 3.47 and 83.98 ± 5.63 , respectively. This score changed to 28.27 ± 2.67 and 99.25 ± 5.39 after training. Independent sample T-test showed no significant difference between average score between two groups ($P > 0.05$). Paired T-test showed significant difference between average score in knowledge and attitude before and after intervention ($p < 0.001$).

Conclusions: There was no difference between the web-based group and the lecture group in knowledge and attitude scores regarding pain management. It is shown that this approach was not dominant to others. In addition, our finding showed scores of knowledge and attitude in post training were more before intervention that emphasized both training approach were effective for enhancing pain management.

Keywords: Lecture and Electronic Educational Approach, Pain Management, Nursing Student, Attitude, Knowledge

مقایسه اثر دو روش آموزش حضوری و الکترونیکی مدیریت درد بر دانش و نگرش دانشجویان پرستاری

مقدمه و هدف: پیشگیری و تسکین درد از اولویت های آموزش در پرستاری به شمار می رود و با تسکین کافی آن می توان از بیماری زایی، مرگ و میر، مدت اقامت و هزینه کاست و موجب بهبود بیمار شد. لذا با توجه به اهمیت روش های نوین آموزش مطالعه حاضر به منظور مقایسه تاثیر دو روش آموزش حضوری و الکترونیکی مدیریت درد در دانشجویان پرستاری مشغول به تحصیل در شهرستان های زابل و زاهدان بر دانش و نگرش نسبت به کنترل درد انجام شد.

روش کار: پژوهش حاضر یک مطالعه نیمه تجربی است که بروی دانشجویان پرستاری مشغول به تحصیل در دو دانشکده پرستاری زابل و زاهدان در ۶۰ نفر و در دو گروه ۳۰ نفری انجام شد. اطلاعات توسط پرسشنامه سنجش دانش فرل و مک کافری و نگرش مطالعه سعادت و همکاران به صورت قبل و بعد از روش آموزشی جمع آوری شد. تجزیه و تحلیل اطلاعات به وسیله نرم افزار SPSS با آزمون های آمار توصیفی (میانگین، درصد و انحراف معیار) و آزمون های تحلیلی (تی استیوونت مستقل و زوجی) انجام شد.

نتایج: میانگین سنی دانشجویان مورد مطالعه 21.48 ± 1.74 بود. ۲۴ نفر مذکر و ۳۶ نفر مونث بودند. میانگین نمره دانش قبل و بعد از آموزش در هر دو گروه آموزش حضوری و الکترونیکی بر اساس آزمون تی زوج تفاوت معنی دار آماری وجود داشت ($P < 0.001$). بین نمره نگرش در هر دو گروه بین قبل و بعد از آموزش نیز تفاوت وجود داشت ($P < 0.001$). ولی بعد از مداخله بین دو گروه الکترونیکی و حضوری از نظر نمره دانش و نگرش تفاوت مشاهده نشد.

بحث و نتیجه گیری: یافته های این مطالعه حاکی از آن است که هر دو رویکرد آموزشی در افزایش میزان یادگیری موثر می باشند و همچنین بین میزان یادگیری در دو روش آموزش از طریق وب سایت و آموزش مرسوم حضوری به روش سخنرانی در کلاس درس تفاوت معنی داری وجود نداشت که خود نشان دهنده عدم برتری یکی از روش ها بر دیگری می باشد به نظر می رسد ترکیب این دو روش آموزشی ممکن است سطح دانش دانشجویان را برای دستیابی به مهارت بیشتر تسهیل نماید. بنابراین پیشنهاد می گردد که در آموزش رشته های علوم پزشکی علاوه بر آموزش مرسوم و آموزش چهره به چهره، از روش های آموزش الکترونیکی و مجازی بصورت ترکیبی و در کنار هم، جهت ارتقاء هر چه بهتر آموزش دانشجویان استفاده گردد.

کلید واژه ها: آموزش سخنرانی، آموزش الکترونیکی، مدیریت درد، دانشجویان پرستاری، دانش، نگرش

مقایسه اثر آلبومی التعليم، التعليم الحضورى والىكترونى فى مجال إدارة الألم على المعرفة والرؤية عند طلاب التمريض

المقدمه و الهدف: إن الوقاية و تسكين الألم هى من أولويات التعليم فى مجال التمريض. مع التسكين الكافى يتم تخفيض الامور التالية: حدوث الأمراض، الموت، كلفة و مدة المكوث فى المستشفى. لذا نظرا إلى أهمية الأساليب الحديثة فى التعليم تسمى هذه الدراسة إلى مقارنة تأثير أسلوبى التعليم الحضورى و اللىكترونى فى مجال إدارة الألم عند طلاب التمريض فى مدينتى زابل و زاهدان على المعرفة و الرؤية تجاه السيطرة على الألم.

ألبوب العمل: إن هذه الدراسة تعتبر دراسة نصف تجريبية تم إجراء لها على طلاب التمريض فى مدينتى زابل و زاهدان بعدد 60 شخص. مقسمين على فريقين كل فريق 30 شخص. تم تجميع المعلومات عبر استمارات مبنية على أصول إحصائية و تم تحليل المعلومات عبر برنامج SPSS مع إختبارات إحصائية توصيفية (معامل χ^2 و إنحراف المعيار) و الإختبارات التعليمية (T-Student المستقل و الزوجى)

النتائج: المعدل السنى عند الطلاب كان 21.48 ± 1.74 ، 24 من الذكور و 36 من الإناث. كان هناك إختلاف ذوقية فى علامة المعرفة قبل و بعد التعليم فى فريقين التعليم الحضورى و اللىكترونى على أساس إختبار T زوج $P < 0.001$. كان هناك أيضا أختلاف ذوقية بين الفريقين قبل و بعد التعليم فى علامة الرؤية $P < 0.001$ و لكن لم يكن هناك إختلاف ملحوظ بين الفريقين بعد المداخلة التعليمية فى علامة المعرفة و الرؤية.

البحث و الإبتتاع: أشارت نتائج هذه الدراسة إلى أن كلا الأسلوبين كانا مؤثرين فى التعلم و لم يكن هناك إختلاف ذوقية فى مستوى التعلم فى أسلوبى التعلم عبر الوسائط و التعلم التقليدى الحضورى فى قاعة المحاضرة. يستحسن دمج هذين الأسلوبين لأجل رفع المستوى العلمى و الحصول على مبررات أفضل.

الكلمات المفتاح: التعليم عبر المحاضرة- التعليم اللىكترونى - إدارة الألم - طلاب التمريض - العلم - الرؤية.

درد کو کنترول کرنے کے لئے کلاسیکل تعلیم اور الیکٹرانیک تعلیم کی روشوں کے موثر ہونے کا جائزہ، یہ تحقیق نرسنگ اسٹوڈنٹس کے لئے کی گئی ہے

بیگ گراؤنڈ: درد کی روک تھام اور تسکین درد نرسنگ کی تعلیم کی ترجیحات میں شمار ہوتا ہے۔ درد کو ختم یا کم کر کے مزید بیماری، موت، اور اسپتال میں بھرتی رہنے کی مدت نیز علاج معالجے کے بحث میں کمی لائی جاسکتی ہے۔ اس تحقیق میں درد کو کنترول کرنے کے سلسلے میں کلاسیکل تعلیم اور الیکٹرانیک تعلیم کی روشوں کا مقابلہ کیا گیا ہے اور اس بات کا جائزہ لیا گیا ہے کہ شہر زابل اور زاہدان کے نرسنگ اسکولوں میں درد کو کنترول کرنے میں کونسی روش موثر رہی ہے۔

روش: یہ تحقیق زابل اور زاہدان میں انجام دی گئی اس میں دونوں شہروں سے نرسنگ کی تیس تیس طالبات اور طلباء یعنی ساٹھ طلبا نے شرکت کی۔ نرسنگ کے اسٹوڈنٹس کو ٹریننگ سے پہلے اور ٹریننگ کے بعد سوالنامے دئے گئے تھے۔ ڈیٹا کا تجزیہ ایک پی ایس ایس سافٹ ویئر سے کیا گیا۔

نتیجے: تحقیق میں شرکت کرنے والی طلباء کی اوسط عمر اکیس سال تھی۔ اس میں چوبیس لڑکے تھے اور چھتیس لڑکیاں تھیں۔ الیکٹرانیک اور کلاسیکل ٹریننگ کے بعد ٹی ٹسٹ کے مطابق کافی فرق دیکھنے کو ملا ہے جبکہ ٹریننگ سے پہلے اور ٹریننگ کے بعد بھی نمبروں میں کافی فرق ہے۔

سفارش: اس تحقیق سے معلوم ہوتا ہے کہ دونوں روشیں طلبا و طالبات کو درد کو کنترول کرنے کی روشیں سکھانے میں موثر ثابت ہوتی ہیں۔ نتیجوں کو دیکھ کر کہا جاسکتا ہے کہ کسی بھی روش کو ایک دوسرے پر برتری حاصل نہیں ہے البتہ اگر الیکٹرانیک ذریعے سے تعلیم کو کلاسیکل تعلیم کے ساتھ ساتھ رکھا جائے تو بہت فائدہ مند ثابت ہوگی۔

کلیدی الفاظ: الیکٹرانیک تعلیم، کلاسیکل روش، درد کا کنترول۔

INTRODUCTION

In today's world, education is considered as the primary right of human beings that leads to social development and change. One of the common medical teaching methods is lecture that has various different advantages such as being cost-effective to teach to a large number of students (1) and still many of pundits believe that if the method is presented properly, it is influential (2). Most of universities around the world are attempting to find new educational methods that result in continuous learning and self-study among students. There is ongoing development in the relation between nursing education and nursing services. The nursing education can remain dynamic only if it breaks time and place and moves toward initiatives, developing innovations and using new teaching-learning methods (3).

Knowing new teaching methods and comparing their results assists teachers to be more influential in future courses (4). Electronic teaching is a new horizon to the world of education. The purpose of this method is to upgrade quality of education while saving time for both teachers and students (5). During the last years, many endeavors have been taken to develop and spread the efficiency of web-based learning (6). Web-based training is a strategy in which teacher and learner are far away from each other; however, the students who cannot par take in the class can learn by using internet (7).

Some advantages of web-based training are as follow: easy and unrestricted access to educational sources, saving time and money of going and coming from class, education development for everyone and with much less cost, easy access to different educational resources, the possibility to learn in any time and place and transferability of knowledge in any time and place by teachers. Moreover, the studies show that 94% of learners who have attended e-learning courses declared they have learnt more in compare with traditional methods (8).

Pain is one the most common clinical symptoms that nurses encounter. Therefore, it is expected that nurses have sufficient knowledge and appropriate performance along with right attitude in order to control pain. An acute pain that is not controlled effectively can cause mental and physical disorders (9). Lack of sufficient knowledge and skill to diagnose and control pain is considered as one of the barriers of influential pain management in different references; moreover, incorrect perception of pain prevents proper control (10). Solely collection of information does not lead to a pleasant change. Designing new teaching methods that are evidence-based will upgrade skills in relation with knowledge and the approach toward special groups of patients. (11)

Alkhaldeh et al conducted a descriptive study in 2012 in order to analyze nursing students' knowledge and attitude toward pain management. They stated that students did not have enough knowledge and appropriate attitude toward pain management and advanced training of education and skills on pain management is required (9). Zhang et al did another research about the influence of pain training (using lecture method) on nurses' knowledge and attitude about pain and the skill to analyze pain in china. The results showed that the

interfering groups had significantly difference increase in the level of knowledge and attitude (12).

Keefe and Wharrad conducted a research that aimed to study the use of e-learning to upgrade pain control training among nursing students in East Midlands of England in 2012. The results presented that electronic learning group, after intervention, had higher level of knowledge in compare with control group. In addition, students' awareness increased by using e learning for the year (13). Keyte and Richardson did another study in 2011 in order to review the strategies of pain training. In this study, the influence of pain management training with lecture method is compared with web-based method. Ninety nurses that worked in a training hospital in US participated in the study and were categorized in two similar groups. The results showed that the average score of participants' knowledge on pain management had significant increase in both methods in compare with the base score, however, there was no significant difference between score of knowledge of pain management in the two groups in post-test ($p=0/326$). Researchers recommended e-learning of pain management because of its traits including learning based on learner's interest, cost-effectiveness, efficiency, accessibility, flexibility, appropriate design, universality, (14) In total, different researches in the field of pain management training with different educational method including lecture, poster, and educational stands have been conducted. Although there have been growth and development of educational programs, there are many shortages in level of knowledge, attitude and performance of nurses in proper analyze, control and treatment of patients' pain (8, 15, 16). Insufficient knowledge and skill in analyzing and controlling pain, stereotypical attitude and the influence of nurses' personal believes are influential on the extend of experienced pain in patients. Consequently, it could be stated that knowledge, stereotypical attitude, insufficient skill in analyzing and controlling pain and misperception prevents pain control. A number of researchers believe nurses' knowledge and attitude in pain management are influential factors in this respect, moreover, they believe innovative methods are required to teach pain management (14). In different studies, e-learning is recommended due to providing flexibility of time and place and increasing the capacity of learning (17 – 19). Knowing the outcomes of e-learning in compare with traditional methods helps researchers and teachers to decide efficient future e-learning and traditional methods. The current study was conducted to compare the influence of e-learning and traditional methods of pain management training on nursing students' knowledge and attitude who studied in Zabol and Zahedan.

METHODS

This is a semi-experimental study. Samples were selected from nursing and midwifery schools located in Sistan and Balochestan (Zahedan and Zabol) province. The criteria to participate in the study were as follow: passing three units of techniques and principals of nursing including the practical course, ability to use computer and internet, studying in the same period. Sixty students of fourth semester of nursing were selected and then divided in two groups. The ability to

use virtual world was analyzed in both groups; it was confirmed that all of them had no problem in this respect. It should be mentioned that they have passed IT course. A group was trained with face-to-face lecture method in nursing and midwifery school of Zahedan. 30 students of the fourth semester were trained via web-based method in a website developed by the researcher. Both group had pre-test questionnaire before participating in the educational program. Two sessions lasting one hour and half along with training slides were provided for lecture group. The other group was trained in another faculty that used website, however, similar contents were provided for both groups. They were reminded that part of internal surgery of the syllabus would be provided with this method. Therefore, the students were supposed to read the materials in the website. In e-learning group, the website had international domain of Ir: www.painmanagment.ir that had the host had high speed using Mihan web host. It had an ongoing virtual training in pain control. The content of the site was thoroughly protected using PHP language designed by an IT expert. It was designed to record the information including time and place of logging in and the researchers were able to see the whole history of users. It was predicted that if the students do not visit the site, they were extracted from sample list. It should be mentioned that this problem did not occur during the study and all of the students attended the course. After two weeks, post-test was held.

Ferrell and McCaffery developed a questionnaire to analyze nurses' knowledge in pain management in 1987 (19) and the same questionnaire is used in the present study. It was translated via back ward and forward method and 10 faculty members of nursery school of Zahedan and Kerman

confirmed the content validity. The final version of the questionnaire has 21 true/false questions, 12 multiple-choice questions, and 2 case studies with 4 questions. 20 nursing students out of the sample completed the questionnaire and the reliability was assessed by Cronbach's alpha: 0/81. In order to assess attitude, the questionnaire of Saadati et al (2006) which included 25 questions with Likert scale was used. The questionnaire was designed according to 5-scales of Likert including totally agree, agree, no idea, disagree, totally disagree and the scores were from 1 to 5 (20). The common ethnic is considered in this study including free participation in the study and gaining official permission. The questionnaires were nameless. The current study code is K/93/325; research plan number is 93/273 and is confirmed by Research and Technology Department of Medical University of Kerman.

RESULTS

Analysis of demographic information showed that the average age of students is $21/48 \pm 1/74$. Number of males and females were 24 and 36, respectively. There was no difference about personal traits and score of knowledge and attitude between the groups before intervention and they were similar. The average score of students' knowledge in lecture group in pre-test was $17/7 \pm 3/78$, which changed to $27/63 \pm 2/68$ after intervention. According to paired t-test, there is statistically significant difference ($p < 0/001$). In e-learning group, the average score of knowledge was $18/92 \pm 3/16$ before intervention and $28/96 \pm 2/56$ after education; similarly, there is significance difference ($p < 0/001$). There was no difference between the scores of two groups after intervention according to independent t-test ($p < 0/058$) (table 1).

Table 1. comparing average score of students in pain management before and after intervention

Average of score	Before	After	P value*
Group	Average score of knowledge \pm standard deviation	Average score of knowledge \pm standard deviation	
Lecture group	$17/7 \pm 3/78$	$27/63 \pm 2/68$	0.001
e-learning group	$18/92 \pm 3/16$	$28/96 \pm 2/56$	0.001
P value **	0/160	0/058	

*:t student
**: paired t test

Table 2. comparing the score of students' attitude in pain management before and after intervention

Average of score	Before	After	P value*
Group	Average score of attitude \pm standard deviation	Average score of attitude \pm standard deviation	
Lecture group	$83/5 \pm 6/21$	$99/56 \pm 5/96$	0.001
e-learning group	$84/28 \pm 5/14$	$98/92 \pm 4/79$	0.001
P value **	0/511	0/654	

*:t student
**: paired t test

The score of attitude was $83/5 \pm 6/21$ in lecture group and before intervention that changed to $99/56 \pm 5/96$ after education. In e-learning group, the score was $84/28 \pm 5/14$ that changed to $98/92 \pm 4/79$ after education. Paired t-test showed significance difference in both groups ($p < 0/001$). In accordance with the results of independent t-test, no difference was found between the two groups ($p = 0/654$). (Table 2)

DISCUSSION

In the current study, there was no difference in demographic traits, score of knowledge and attitude. Therefore, it could be stated that the results of comparing knowledge and attitude scores about pain management in the two groups were not influenced by these characteristics. The results showed that training has positive effect on pain management in both groups (lecture and e-learning). The results of some studies comparing lecture and electronic teaching methods presented that there were statistically significance difference in score of knowledge before and after intervention and increased after intervention; however, the post-test did not show any difference (13, 14 and 21). Moreover, different studies conducted in Iran presented that there is difference between scores of students before and after intervention, however, there were no significant difference in the scores of post-test in the two educational methods. Number of samples, compared groups, and the quality of the content of e-learning programs were different with the present study. However, it was presented that both methods increase knowledge and attitude of students and concluded that e-learning via web-based training, in compare with other educational methods, can be influential on cognitive-learning and to some extent on psychomotor which is similar to our study (22-25).

The results of the present study showed that the score of attitude increased after intervention in both lecture and e-learning group ($p < 0/001$), however there was no difference between the two groups after intervention. Therefore, both methods have improved students' attitude toward pain management. The results of the current study were similar to Saadati et al (20) and with studies conducted abroad (12, 26). E-learning's score number of attitude changed a bit less than lecture group that might be due to lack of interaction between student and teacher in electronic world. E-learning is flexible and medical team can have access to the content at any time or place. Consequently, it is recommended that in medical education e-learning methods be used along with common methods in order to upgrade education of students.

According to the present study and most of studies conducted in Iran and other countries, the criteria of learning level is the score gained in the exam. It seems that e-learning via website provides sounder learning and students are more motivated because he/she is in charge of

learning. This is similar to the results of Keefe and Wharrad, Keyte and Richardson who believe that convenience and easy access to educational content via web site leads to upgrade of learning capability among learners (13, 14). Knowledge, attitude and skill to take care of patient are very important; moreover, life-long learning to gain clinical skill and capability is essential. E-learning is flexible and it is easy to access information at any time or place.

Therefore, it is suggested to use e-learning method along others. Previous studies have shown that when a nurse has enough knowledge and appropriate attitude toward pain management, he/she can control patients' pain more efficiently (14, 26-30). Teaching pain to nursing students and continuous education are essential to upgrade pain management (8, 15, 16, 29, and 30). The current study is similar to mentioned studies.

The limitation of the study was small number of participants, however, since both society and sample were similar all of the students participated in the study, both groups had similar demographic data, and therefore this limitation was controlled. It is recommended to use more samples and group in future studies.

The results of the current study presented that education with both teaching methods (lecture and e-learning) upgraded knowledge and attitude of nursing students toward pain management.

Although knowledge of e-learning group did not have significance difference with lecture group, but it was a bit higher. Therefore, it could be said that this method was beneficial for them owing to the fact that it saves money and time. On the other hand, information technology is developing and new efficient methods will develop to train people in different geographical places. Using e-learning, learners will be able to learn at any time.

Since barriers to manage pain effectively are lack of knowledge, inappropriate attitude and insufficient skill to control pain, e-learning can solve these problems with low costs. It is recommended to conduct similar study for other courses of nursing and in bigger groups of students. It is very important to keep nurses and nursing students up-to-date in order to provided better services. Developing teaching method by using technology is recommended to nursing students and life-long education.

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