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Satisfaction of Health Educator Nurses through an Ongoing Professional Education Program Using Two Instructional Methods

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Abstract. The aim of the study was to determine whether the interactive teaching method is more effective than the lecture-based method with regard to the nurse educator's satisfaction and learning. No local study has been conducted in this area in health educational training programs in the primary health care setting. The study was conducted between January and June 2008 in the Dammam area of the Kingdom of Saudi Arabia. The study was a cross-sectional study that sought to identify the perceptions of health educator nurses; of the 40 invited to participate, 34 nurse educators from 20 primary health care centers attended. They were subjected to the traditional lecture-based method of instruction, after which participants' perception was registered. One month later, each group attended another session which used the interactive teaching method with peer teaching, and then their perception was registered. There was a statistically significant difference between the traditional and interactive methods in 10 items out of the 22-item questionnaire (higher scores toward interactive method). Nurse educators in primary health care centers prefer an interactive teaching method and peer teaching over the traditional lecture-based method of instruction.

Keywords: Teaching, Learning, Nurse educators, Interactive instruction, Curriculum.

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Introduction

The purpose of this study was to explore the difference of learning using the interactive method in comparison to the traditional lecture-based methods presented in nurses' educational health training programs.

In total, there are 20 primary health care (PHC) centers in the Dammam area in Saudi Arabia. Each centre has two nurses working as health educators who receive a three-day health educational training program twice a year. They are engaged in various activities including health education. The Health Education Unit provides consistent, continuous medical education to their nurses. It organizes educational training program for them to prepare them to be nurse educators. The unit of health education is an important unit in PHC centres, because it helps the health educator nurses to improve their performance in health education.

The present study was undertaken to determine whether interactive learning or the lecture method is more effective in such an educational training program. The traditional training given to nurse educators was undertaken through lectures as instrumental method. Both peer teaching and interactive instruction are new trends in medical education. Notably, investigators into educational research found that these two methods of teaching can increase the learning among nurse students[1,2].

Dewey[3] argues that traditional education is a 'pattern of organization' that consists of schedules, rules, and procedures that inhibit student learning. Dewey recommends increased social interaction within schools[4]. Constructivism (as building on the previous knowledge) as well as metacognitive development empowers students in the areas of problem solving, reflecting, and evaluating skills[5,6]. Jeffries *et al.,*[7] found that student satisfaction was significantly higher in interactive, student-cantered groups than in traditional groups.

Vaughan[8] found that games and discussions were the most popular approaches among students while the lecture method was the least popular. Thus, students find learner-centred methods more acceptable. A constructivist teacher works as the link between curriculum and student to bring the two together in a way that is meaningful to the learner. It is possible to introduce problem-based learning (PBL) in a traditional curriculum with a formal lecture-based program favoured by the students[9].

Sousa[10] noted that the average information retention rate for the traditional lecture method is only 5% for a 24-hr period, compared with alternative approaches, such as audiovisual aids (20%), demonstrations (30%), discussion groups (50%), practice activities (75%), and peer teaching (90%). Case-based teaching has been found to be more effective than the lecture-based approach in promoting students' critical thinking and decision making skills[11]. As we see in the above review, that in most of the studies, students prefer the interactive method more than the traditional method.

Methods

The study was conducted between January and June 2008 in the Dammam area of the Kingdom of Saudi Arabia. The study was a cross-sectional study that sought to identify the perceptions of health educator nurses. Out of the 40 nurse educators invited to participate, 34 from 20 primary health care centers attended. The 34 participants were divided in two groups by simple random tables. This is due to a shortage of nurses and workload in PHC centers. Each group was subjected to a traditional lecture-based method of instruction, after which participants' perception was registered. One month later, each group attended another session which uses the interactive teaching method with peer teaching, and then their perception was registered. Four medical cases were presented using the interactive method, and a fifth case was presented using the PBL method, to introduce some incremental change in the teaching process. All the cases presented use interactive teaching method.

From a checklist of learning needs, prior to the start of the courses; five topics were chosen to represent the content knowledge for the two courses namely: Hypertension, diabetes, obesity, human violence, and smoking cessation.

The first group of health educator nurses (n = 20) were engaged in three days of educational training using the lecture format and addressing the five topics identified by the committee. After completing the traditional instruction, the nurses in this group answered a 22-item questionnaire developed by the investigator (Appendices 1-2, *see end of section*). On the last day of the course, the first group received hand-outs related to the five topics.

The nurses were divided into four groups, and each group received questions about the cases to prepare for the subsequent interactive course. The fourth group received an additional fifth topic on diabetes to be discussed in a problem-based manner in the subsequent interactive course given after one month. The purpose of these groups was to make small-group discussion classes.

Approximately one month later, the 20 educator nurses in the first group were engaged in another 3-day training with interactive instruction that addressed the same 5 topics. As only 18 students attended the session, they were divided into 4 sub-groups, each group is comprised of 4 to 5 students. One nurse was chosen by the group to be a tutor, who prepared the case and presented it to the class using a PowerPoint presentation. This was followed by a discussion between the presenter and the group. A family medicine consultant facilitated the process, and two nurse supervisors coordinated the process. The second group of 20 nurses (out of which only 16 attended) had the same course rotations and evaluations but at different times, thus yielding a total of 34 nurses who formed the study sample. The cause of different times was due to the nurses work shortage in PHC centres.

The quantitative method of data collection, through the use of a two-part questionnaire, was employed. The first part of the questionnaire asked about demographic data, and the second part

contained 22 items regarding the perception of the nurses for the two methods of instruction. Data were analyzed using the SPSS program, Version 10, (SPSS Inc., Chicago, IL, USA). The frequency and mean percentage of students' responses was determined. A paired *t*-test was used to determine if a significant difference existed between the students' responses towards the two methods of instruction.

Results

The mean age of the nurse educators was 35.2 ± 6.9 years. There was a statistically significant difference between the traditional and interactive methods in 10 items out of the 22-item questionnaire (higher scores toward interactive method).

Table 1 shows that there was a significant difference between the traditional and interactive teaching methods, in relation to the following items: 1, 2, 5, 6, 9, 10, 16, 17, 18, & 19.

Table 2 shows that the total overall score difference in the participants' perceptions was significantly in favour of the interactive method over the traditional method (P = 0.01). Also, Table 2 shows that a significant difference was present in both the course content and student satisfaction domains of the questionnaire in favour of the interactive method group of nurses (P = 0.002) and (P = 0.000), respectively.

Table 3 shows demographic characteristics and the variables that affect the total score difference in the educator nurses' perception scores. By using one-way ANOVA, we found that no single factor significantly affects the total difference score of participant perceptions, such as age or working in the hospital, *etc*.

Table 1. Comparison between nurse satisfaction scores towards traditional and interactive instruction methods of the course using paired t-test.

Item	Traditional	Interactive	P-Value
1	3.6 ± 1.0	4.1 ± 0.8	0.001*
2	3.9 ± 0.8	4.2 ± 0.6	0.019*
3	4.1 ± 0.8	4.2 ± 0.6	0.257
4	3.8 ±0.8	3.9 ± 0.8	0.441
5	3.6 ±0.8	4.0 ± 0.6	0.046*
6	3.8 ±0.9	4.1 ± 0.6	0.013*
7	4.1 ±0.7	4.3 ± 0.6	0.304
8	4.0 ± 0.8	4.2 ± 0.7	0.182
9	3.9 ± 0.9	4.2 ± 0.7	0.030*
10	4.2 ± 0.7	3.8 ± 1.0	0.028*
11	3.8 ± 0.8	3.9 ± 0.8	0.869
12	3.9 ± 0.8	4.1 ± 0.8	0.419
13	3.6 ± 1.0	3.9 ± 0.9	0.115
14	3.9 ± 0.9	3.8 ± 0.9	0.661
15	4.0 ± 0.7	4.0 ± 0.7	0.851
16	4.0 ± 0.9	4.3 ± 0.7	0.046*
17	3.8 ± 0.8	4.4 ± 0.6	0.001*
18	3.8 ± 0.8	4.4 ± 0.8	0.012*
19	3.9 ± 0.6	4.3 ± 0.6	0.001*
20	4.2 ± 0.6	4.3 ± 0.6	0.325
21	3.9 ± 0.8	4.1 ± 0.6	0.058
22	4.4 ± 0.6	4.5 ± 0.6	0.624

** P-value<0.05 is statistically significant*

Table 2. Comparison between traditional and interactive instruction using students' perception scores towards the four domains of the course

Domain	Traditional Lecture Mean (SD)	Interactive Lecture Mean (SD)	Significant (P-value)
Course Content	3.8 (0.6)	4.1 (0.5)	0.002*
Course Implication	4.0 (0.6)	4.1 (0.6)	0.260
Instructor Characteristics	3.9 (0.7)	4.0 (0.7)	0.332
Student Satisfaction	4.0 (0.5)	4.3 (0.5)	0.000*
Total overall Score	**3.9 (0.5)**	**4.1 (0.5)**	0.010*

** P-value<0.05 is statistically significant*

Table 3. Demographic characteristics and the variables that affect the total score difference in the perception scores

No	Source of Verification	Sum of Squares	df	Mean Square	F	p-value
1	Age	0.16	2	0.082	0.396	0.677
2	Mar. status	0.25	2	0.13	0.621	0.544
3	Education	0.31	2	0.15	0.76	0.477
4	Y as Educator	0.54	4	0.13	0.64	0.64
5	Y in Hospital	1.10	4	0.27	1.45	0.243
6	CME in last Yr	1.43	5	0.29	1.56	0.204

Based on one-way ANOVA, df: degree of freedom, F: F ratio

Discussion

To Answer the Research Question

Our research findings showed that perceptions significantly favoured the interactive method over the traditional method. As expected this result was similar to the results observed by other researchers[7,8,12]. These results were also similar to those noted by Gercenshtein *et al.*[13], which indicated that increasing learner involvement in teaching programs may improve learner satisfaction.

Our result was similar to the results noted in studies focused on PBL[14-17]. It was also similar to the results found in case-based studies[9,18-21].

Similar results to our findings were found for cooperative teaching and self-directed learning[22,23]. Additionally, our result was similar to that found for peer teaching, which indicate that peer teaching was effective[1,24,25].

Our study showed that there is a significant relation between student satisfaction and instructor characteristic in agreement with Anderson *et al.*[26]. The study questionnaire showed Cronbach's alpha of 0.91 for the 22 items concerning educator nurses' learning. This value is highly reliable, as researchers consider the threshold value of 0.70 as being reliable[27].

There are some limitations associated with the use of Likert scale instruments alone. Notably, they are unable to give information about

the motivation behind the attitude reported, unless student comments are included. In light of this problem, researchers recommend the incorporation of qualitative methodology.

Conclusions

Nurse educators in primary health care centers prefer an interactive teaching method and peer teaching over the traditional lecture-based method of instruction. There is a need to train nurse educators to become effective presenters using interactive methods. The study highlights the importance of incorporating group discussion, peer teaching, cooperative teaching, active learning, and PBL in interactive teaching methods in order to improve learning outcome. Updating nurses' knowledge in interactive teaching and the use of peer teaching is, therefore, important in continuing medical education programs for health professionals.

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Appendix 1. English version of Questionnaire

Description	Agree Strongly 5	Agree 4	Neutral 3	Not Agree 2	Not Agree Strongly 1
1) Course content and structure					
1. Integrated teaching was effectively used in this course.					
2. I understood the subject matter of this course.					
3. Most teaching was related to health education.					
4. The course core content provides sufficient educational material and examples of health cases.					
5. Length and difficulty level of this course was reasonable.					
2) Course implication and instructional methods					
6. I understand what is expected of me in this course.					
7. I will be able to use what I learned.					
8. I feel free to ask questions in class.					
9. The instructor motivated me to do my best in the class.					
10. This course used video and audiovisual aids effectively.					
3) Instructor characteristics or perspectives					
11. The instructor possesses current and adequate knowledge					
12. Instructional information adequately addressed objectives					
13. Instructional topics were discussed in sufficient depth.					
14. The instructor is well prepared and organized.					
15. The instructor makes good use of examples and illustrations.					
16. The instructor presented the material in an interesting way.					

Appendix 1. ***(Continuation)*** **English version of Questionnaire**

Description	**Agree Strongly 5**	**Agree 4**	**Neutral 3**	**Not Agree 2**	**Not Agree Strongly 1**
4) Student satisfaction/expectations					
17. Students were encouraged to contribute to class learning and discussion.					
18. I like studying Health Education by this method of instruction.					
19. Topics of the teaching sessions are relevant to my current practice.					
20. I learned new things that I can apply in my practice.					
21. My overall rating of the course is satisfactorily					
22. I recommend other health nurse educators to take this type of course in future					

Appendix 2: Arabic version of the questionnaire.

		لا أوافق بشدة ١	لاأوافق ٢	لا استطيع أن أقرر (محايد)٣	موافق ٤	موافق بشدة ٥
مادة المقرر						
١-	طريقة التدريس التكاملي كانت فعالة في هذا المقرر.					
٢-	أنا افهم محتوى المادة لهذا المقرر.					
٣-	معظم حصص التدريس ذات صلة بالتثقيف الصحي.					
٤-	المقرر يمدنا بحالات مرضية وتثقيفية بشكل جيد وكافي.					
٥-	درجة صعوبة وطول المقرر معقولة.					
تطبيق طرق التدريس						
٦-	أنا افهم ما هو متوقع مني في هذا المقرر.					
٧-	أنا قادرة على استعمال ما تعلمته من المقرر.					
٨-	أنا أشعر بالراحة والحرية لسؤال الأسئلة في الفصل.					
٩-	المحاضر يحفزني لأظهر أفضل مالدي في الفصل.					
١٠-	هذا المقرر يستعمل الفيديو والوسائل المرئية والسمعية بطريقة مؤثرة .					
وصف المحاضر						
١١-	المحاضر يملك معلومات حديثة وكافية					
١٢-	معلومات الحصص وطرق التعليم بينت أهداف المقرر بوضوح.					
١٣-	مواضيع حصص التعليم نوقشت بعمق كافي.					
١٤-	المحاضر منظم ومستعد جيداً.					
١٥-	المحاضر أحسن استعمال الأمثلة والوسائل التوضيحية من رسومات وغيرها.					
١٦-	المحاضر قدم المادة بطريقة شيقة وممتعة.					
	رضى الطالب وتوقعاته					
١٧-	المشاركين كانوا يلقون التشجيع للمشاركة في النقاش داخل الفصل.					
١٨-	أنا أحب دراسة التثقيف الصحي بهذه الطريقة.					
١٩-	مواضيع حصص التدريس كان مناسبا" ووثيق الصلة بعملي الحالي.					
٢٠-	أنا تعلمت أشياء جديدة بامكاني تطبيقها في عملي.					
٢١-	تقييمي العام لهذا المقرر مرضي					
٢٢-	أنصح بقية المثقفات الصحيات بضرورة أخذ هذا المقرر في المستقبل					

مدى رضا الممرضات المثقِّفات الصحيات من خلال برنامج التعليم المهني المستمر باستخدام أسلوبين من أساليب التدريس

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المستخلص. تهدف هذه الدراسة لتحديد مدى فعالية التدريس التفاعلي في زيادة رضا الممرضات العاملات بصورة أكبر في التثقيف الصحي من الطريقة التقليدية المعتمدة على ألقاء المحاضرة . إلى الآن لا توجد دراسة علمية محلية في هذا الموضوع في البرامج التدريبية في التثقيف الصحي بقطاع مراكز الرعاية الصحية الأولية. الدراسة كانت دراسة وصفية مقطعية تقيس إحساس المثقفات الصحيات (٣٤ حضرن من ٤٠) من ٢٠ مركز صحي للرعاية الأولية في التعليم التفاعلي . تمت الدراسة بين شهري يناير وحزيران ٢٠٠٨ في مدينة الدمام بالمملكة العربية السعودية. عرّضت مجموعة المثقفات في البداية إلى طريقة المحاضرة التقليدية ثم اخذ انطباعهم وسجل في الاستبيان. أعطيت نفس المجموعة بعد شهر دروس بأسلوب التدريس التفاعلي مع تعلم الأقران ثم سجل انطباعهم مرة أخرى . كان هناك فرق ذو دلالة إحصائية واضح بين الاسلوب التفاعلي و طريقة التدريس التقليدية (المحاضرة) في ١٠ بنود من ٢٢ بنداً. كان هناك اختلاف كبير ذو

مغزى إحصائي واضح في عدد المشتركين لصالح تفضيل الأسلوب التفاعلي على طريقة المحاضرة التقليدية. المثقفات الصحيات في مراكز الرعاية الصحية الأولية يفضلن التدريس بالطريقة التفاعلية وتعليم الأقران على أسلوب المحاضرة التقليدية.