

“A study to assess the effectiveness of traditional Vs blended learning through advanced technology with regard to new TB regimen among staff nurses working in a selected hospital”

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Abstract- It is commonly considered that new technology makes a big difference in education. This study was done to compare the effectiveness of traditional and blended learning methods on New TB regimen. Using technology and web based learning help staff Nurses to become more active and involved in learning. Quantitative approach pre-test and Post-test design was used. Simple random sampling technique was used following lottery method and the sample size was 52. The study was conducted for staff nurses working in a selected hospital. Structured questionnaire containing 30 questions were given for the pre-test. Ten extra questions were later added to avoid biased of the study. There was a slight difference among the group at pre-test and post –test. On addition of 10 extra questions it shows a significant variation among the group with the blended giving more correct answers, compared to traditional group. While comparing the subject’s knowledge on New TB treatment Regimen Pre-Test and Post Test Questionnaire by the method of teaching that is Traditional and Blended, knowledge of the subjects improved significantly through Blended teaching (paired “t-test”, $t_{(51)} = 20.24$, $p < 0.001$). With emerging of new technology and rapidly changing nursing practice too, therefore it is vital that we nurses’ update ourselves professionally through e-learning and familiarize in handling technology to offer better care. Web based instruction is now, an effective educational tool that promotes better learning and is increasingly being used to deliver course content in nursing education.

Keywords- Traditional, Blended, Knowledge, Technology

Introduction

It is commonly considered that new technology makes a big difference in education. Educational establishments are responsible for facilitating the intake, development and implementation of technology in teaching and learning. Development of new learning environments can promote active participation through practice, encourage shared experiences and enhance student motivation. Instructional methods refer to strategies used within an educational programme to convey course content such as lectures, web-based learning practice group discussions etc. In recent times, "Traditional instruction" has been considered a major cause of a dysfunctional and even out dated educational system. Using technology and web based learning help students to get excited about learning, become more active and involved. Web based instruction is now, an effective educational tool that promotes better learning and is increasingly being used to deliver course content in nursing education.¹

Need and significance in nursing

In modern society, disease conditions have become more acute, the medical environment has become more complicated and hence it is essential for clinical nursing to guarantee the safety of those in nursing care and provide them with high quality service in the course of performing clinical nursing. To meet these requirements, nursing education needs to focus on developing students’ clinical judgment and capabilities to significantly higher levels, so that they can apply knowledge and technological skills in order to address the needs of the clients.

The weaknesses of conventional educational methods, is that they teach by rote, through lectures and lack connection which evokes little enthusiasm from the learners. This may lead nursing students to acquire passive knowledge without critical thinking in diverse clinical settings.

Blended learning adopts various strategies, including online learning and offline assistive ways. The use of blended learning can help students to acquire a variety of tools suited to their taste. This is an effort to assess the comparative effectiveness of both methods²

Statement of problem

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Objectives of the study

- 1) To assess the pre-interventional knowledge of nurses regarding new TB treatment regimen.
- 2) To assess the increase in knowledge of nurses’ post intervention
- 3) To compare the effectiveness of traditional and blended learning methods.

Review of literature

A quasi experimental study was conducted by Roya Sadeghi, Mohammad Mehdi Sedaghat et al among 93 students of Public Health School, Tehran University of Medical Science to compare the effect of lecture and blended teaching methods on students' learning and satisfaction in 2012-2013. The students were divided into two groups. Education regarding the knowledge about tuberculosis for group 1 was in the form of lecture method and in the other group was blended method with e-Learning and lecture methods. At the end of educational programs, students' satisfaction and comments about two methods were also collected by questionnaires. Knowledge scores increased in both groups after training. The difference between the post-test scores of the two groups was not statistically significant. However, the students' satisfaction in blended learning method was higher than lecture method.³

Sherman H, Comer L, Putnam L, Freeman H(2012) had conducted a comparative study between blended versus lecture method on Critical care pharmacology education for the nurses orienting to specialized areas. The findings determined no significant differences in cognitive learning outcomes or learner satisfaction between blended versus lecture format.

Jang KS, Hwang SY, Park SJ, Kim YM, Kim MJ(2005) conducted the study to examine the effects of a Web-based teaching method (versus a traditional lecture method) on undergraduate nursing students' learning of electrocardiography (ECG). Knowledge among students about ECG in the Web-based group was significantly lower than that of students in the control group ($p < .01$). The ability to interpret ECG recordings was significantly higher among students in the Web-based group ($p < .05$). There is no significant differences between the two groups in level of motivation or satisfaction with learning. Web-based ECG learning program appears to be effective in helping nursing students to interpret ECG recordings.⁴

Methodology

- 1) Approach Research: Quantitative approach
- 2) Research design: Two group pre-test, post-test comparative design
- 3) Setting of the study: Bel –Air Hospital, Panchgani
- 4) Population: Staff nurses and working in Bel-Air Hospital
- 5) Sample size: 52 staff nurses working currently at Bel-Air Hospital
(26 samples for Traditional method and 26 for Blended learning method)
- 6) Sampling technique: Simple random sampling technique used following lottery method
- 7) Tool: Structured questionnaire containing 30 questions.

Data Collection Procedure

After getting prior permission from ethical committee, the consent from nurses was taken for participation. The samples were selected by simple random technique by lottery method and assigned to both the groups. The tool used was structured questionnaire containing 30 questions. Tool was validated by three experts from RNTCP. Pre-Test Questionnaire was administered to both the groups. One group was given lectures on “New TB drug Regimen” using blackboard, charts and flash cards for 3 days. The other group was given power point presentation on interactive board, video assisted learning and learning resource materials Samsung tab & head set with internet connection for reference. The facilitator and nurses in high-tech class room which consists of electronic board, LCD projector and audio recording for 1.5 hours per day for three days. Seating arrangement was done in small groups of five. Active discussion was facilitated. Post test for the both the group was conducted after 7 days of intervention. To overcome the problem of memorization and find the real difference in the ability of the nurse to learn, we added 10 more questions in the post-test on material which was covered in the both methods.

Analysis and Interpretation of Data

Data Analysis was performed using R – Program version 3.3.0. We used descriptive and inferential statistics as “paired t-test” to compare the difference in baseline pre-test vs post-test consisting of 30 questions and separate analysis was performed for 10 additional questions. Furthermore, Analysis of Variance (ANOVA) was used to find the difference in pre-test and post-test between the groups.

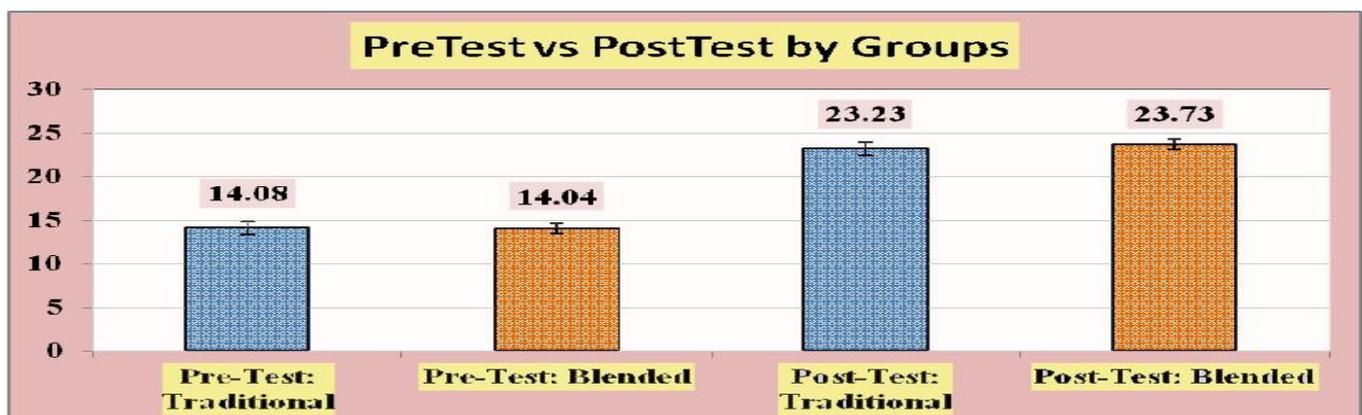


Chart 1: Shows that there was a slight difference among the groups at pre-test and post-test.

[Traditional (M=14.08, SD=3.83), Blended (M=14.04,SD=3.19)].

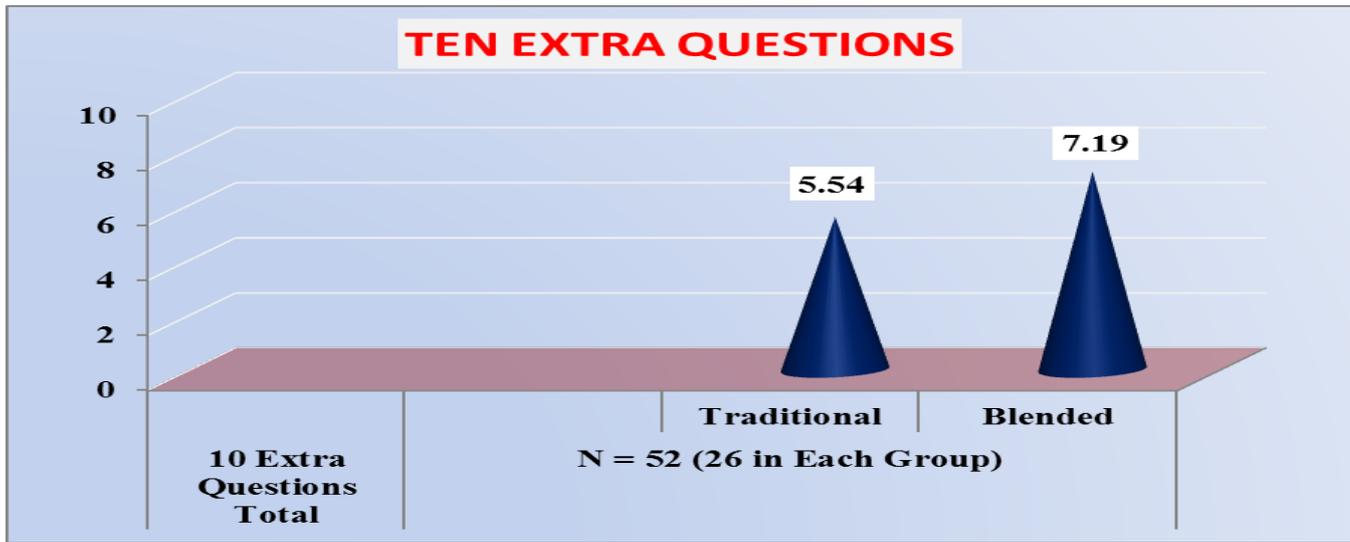


Chart 2: Shows that there was a significant variation among the groups for the 10 Extra Questions, with the blended group giving more correct answers, compared to the traditional method.

Discussion

Adequate knowledge and skill of health professional is essential for providing quality care. Blended learning is the key strategy in promotion of health care services. The findings of the present study suggest the need for implementation of Blended learning among the Nurses to improve their knowledge and help build up their confidence in handling technology while caring for the patient. While comparing the subject's knowledge on New TB treatment Regimen Pre-Test and Post Test Questionnaire by the method of teaching that is Traditional and Blended, it was observed that knowledge of the subjects improved significantly through Blended teaching (paired "t-test", $t = 20.24_{(51)}, p < 0.001$). The post test score shows that there was a slight increase among the group with Blended learning (M=10.69, SD=3.51) Traditional (M=9.15, SD=3.46). This difference is not statistically significant. On the basis of 10 additional questions added the score shows that there was a highly significant difference among the group with traditional method (Mean= 5.54), and with Blended method (Mean=7.190), With $F = 10.07_{(1, 50)}, p = 0.003$ It is found that Blended method of teaching is more effective than the Traditional, by this study

Limitation

The method of teaching was delivered in English where few subjects were finding it difficult to understand. Simple random sampling technique was done by lottery method, where in most of the senior staff got into Traditional group. Hence it is important to note that the group with blended method had better output in spite of being less experienced. In addition to it teaching session and discussions were conducted by experts in the field of Tuberculosis. During Blended session we faced technical problems in spite of meticulous planning.

Recommendations:

1. Blended teaching method need to be incorporated in nursing education and continuing nursing education
2. Nursing institutions and Hospitals need to have advanced technological support to teach procedures and updates to develop confidence among teachers as well as students.

Conclusion:

Emerging technology is so rapidly changing the nursing practice too. Therefore, it is very vital that we nurses' update ourselves professionally through e-learning and familiarize in handling technology to offer better care.

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