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KEY WORDS: Pre-test, Post-test, Didactic style, Score, Effectiveness.

ANALYSING THE EFFECTIVENESS OF PRE- AND POST-TEST MODEL OF LEARNING AMONG STAFF NURSES IN A GOVERNMENT HEALTH AND FAMILY WELFARE TRAINING CENTRE, HIMACHAL PRADESH.

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ABSTRACT

Inroduction: Pre- and post-tests are used to measure knowledge gained from participating in a training course. One of the fundamental priorities of a training centre is the capacity building and strengthen the professional and clinical skills of their trainees. Our study has been aimed to evaluate the effectiveness of pre- and post-test model of learning among staffnurses in the Rural Health and Family Welfare Training Centre (RHFWTC) Kangra at Chheb, Himachal Pradesh. Material and methods: During the period of 5 days training, almost 20 topics were covered by the various qualified resource persons of different specialities and various health institutions including Dr RPGMC Tanda. A total of 25 multiple choice questions were given, to the trainees before and after the training. Answers were assessed based on the answer key prepared and score was calculated. Results: Mean pre and post test score showed improvement from 17.1 to 19.7. The improvement in the overall mean score was found to be statistically significant (p value=.000). The overall performance was improved after getting the training .There were only 20.40 % high performers during pre test whereas 30.60% during post test and the proportion of moderate performers decreased from 77.60 % to 69.40 %.**Conclusion**: The improvement in the overall mean score was found to be statistically significant which was as a result of the training imparted to the study participants in the RHFWTC Kangra at Chheb. The RHFWTC should continue such type of trainings for the capacity building of medical staff. The same study can be conducted on larger samples for better generalization.

Introduction

Pre- and post-tests are used to measure knowledge gained from participating in a training course.[1] Although the complexities of medical care have increased dramatically over the past century, the methods of teaching medicine have changed little and trainers need to learn about the latest techniques and theories of medical education.[1]

The intention of administering a pretest before the lecture is to both analyze how much the trainees are aware of the topics and most importantly to make the trainees be more focused to the lecture.One of the fundamental priorities of a training centre is the capacity building and strengthen the professional and clinical skills of their trainees.[2] In general, a nurse is a person who has been prepared through education to participate in healing and taking care of sick people, rehabilitation therapy and disease prevention.[3] A nurse must have the ability to respond, service speed and service accuracy.[4]There is a relationship between the application of the spirituality of nurses and the fulfillment of the spiritual needs of patients in health services.[5]Nurses as health workers have the greatest opportunity to provide health services, especially comprehensive nursing, holistically helping clients meet their basic needs.[6]Staff nurses are the connecting links between the doctors and the patients, hence, to perform their tasks efficiently they need to be proficient in their knowledge and skills. Government in-service staff nurses need time to time trainings on recent updates in the various health programmes and also enhancement in their skills.

In Himachal Pradesh there is only one Regional Health and Family Welfare Centre, situated in the lap of himalayas in the beautiful Kangra valley. It caters six districts and imparts time to time trainings to the inservice staff of Health and Family Welfare department of Himachal Pradesh. Our study has been aimed to evaluate the effectiveness of pre- and post-test model of learning among staffnurses in a government Rural Health and Family Welfare Training Centre Kangra at Chheb, Himachal Pradesh.

Material and methods:

A 5-day training on patient safety, skill enhancement and professional development for staff nurses was planned at RHFWTC Chheb in the month of september 2022. A total of 49 staff nurses (divided into two batches) attended the training and were enrolled for the study. During the period of 5 days training, almost 20 topics were covered by the various qualified resource persons of different specialities and various health institutions including Dr RPGMC Tanda. The content of the training delivered to the trainees was not based on the typical didactic style but it was a two way communication, included demonstraions, blackboard teaching , playing related videos, asking and sharing experiences and adressing issues and querries solving etc. Each lecture lasted for an average of one and half hours. Power point presentations were put in a pendrive and was provided to each trainee at the end of the training so that they can consult and review the material whenever required.

In order to acess the knowledge, a total of 25 multiple choice questions were given, to the trainees before and after the training. 30 minutes were allotted to mention their responses for all the given questions. A group of resource persons had prepared the multiple choice questions and also its key based on the study material contained in the power point presentations. Answers were assessed based on the answer key prepared and score was calculated. One mark was assigned to each correct response and total maximum marks were 25.Individuals scoring <10 were considered as low performers, scores between 10 and 20 as moderate to average performers and scores >20 as high performers.

Data analysis: Data was entered in the microsoft excel and analysed by SPSS 24. Mean and standard deviation was calculated for quantitative data and proportions (percentage) for categorical data. Paired-t-test was used to assess the effect of training on pre test and post test score.

The whole procedure was performed in accordance with the ethical standards and the Helsinki declaration of 1975 and a permission was sought from the head of the institution prior to the commencement of the study.

Results

A total of 49 staff nurses participated in the pre and post test. The overall mean score in the pretest was 17.1 with SD of 3.4 and 19.7 with SD of 1.6 in the post test. Minimum score obtained was 9 and 16 in the pre test and post test respectively. Maximum score obtained was 22 and 23 in the

pre test and post test respectively.(Table 1)

Table 1: Details of pretest and post test score amond the study participants

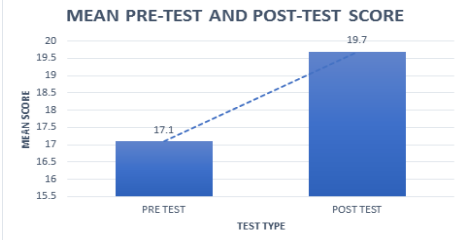
	Pre test score	Post test score
Mean (Standard deviation)	17.1 (3.4)	19.7 (1.6)
Minimum score	9	16
Maximum score	22	23

Mean pre and post test score showed improvement from 17.1 to 19.7.(Figure 1) The improvement in the overall mean score was found to be statistically significant (p value=.000) (Table 2) which was as a result of the training imparted to the study participants in the RHFWTC Kangra at Chheb.

Table 2: Comparison between pre test and post test score based on statistical analysis by T test (one sample test).

Test type	T test value	df	Sig (2 tailed)	Confidence interval
Pre test	34.6	48	.000	16.3-18.2
Post test	82.4	48	.000	19.2-20.2

Figure 1:Mean pretest and post test score among the study participants.



The overall performance was improved after getting the training.There were only 20.40 % high performers during pre test wheras 30.60% during post test (Figure 2) and the proportion of moderate performers decreased from 77.60 % to 69.40 %.(Figure 3)

Figure 2:Distribution of study participants based on the peformance during pre test.

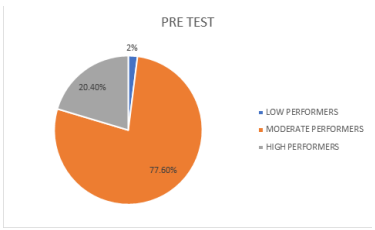
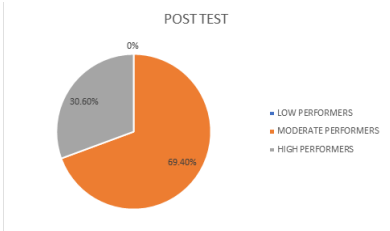


Figure 3:Distribution of study participants based on the peformance during post test.



Discussion:

For in-service government employees whether regular or contractual all require time to time trainings regarding recent updates in the various National Health Programmes and also regarding their professional skill enhancement. There are different categories of health staff like ASHA, ANM, staff nurses, lab technicians, medical officers etc but out of all these, staff nurses play a very important link between a patient and a doctor. Training of patient safety, skill enhancement and professional development is the cornerstone for the capacity building of staff nurses.

In our study the overall mean score in the pretest was 17.1 (S.D=3.4) and 19.7 (S.D=1.6) in the post test (out of 25) and the improvement in the overall mean score was found to be statistically significant (p value=.000). In a study by Neelavathi D(7) done on 60 nurses a significant difference was found between the pretest practice scores (M=17, SD=3.99) and post test practice scores (M=28.36,SD=3.8) (out of 30) with p <0.001. A study by Hartley S et al(8) done among student nurses showed statistically signifiacant improvement in their overall knowledge scores from pretest to post test (p <0.01). A study by Rastogi A et al(9) done on in-service nurses showed significant mean improvement in knowledge score (p<0.001) with mean knowledge score of 19.3 (SD=4.4) in pretest and 25.7(SD=3.9) in the post test (out of 30).

Also a 3 day work shop effectiveness was studied by Gupta G et al(2) among post graduate medical students in which mean pretest score was found to be 3.1 and post test was 5.4 (out of 10). A similar study was done by Shivaraju PT et al(1) among undergraduate medical students where total post test correct responses were found to be highly significant (p<0.05) than pretest responses.

In our study there were 2% low performers, 77.6% moderate performers and 20.4% high performers during the pretest. During post test there was none among low performers, 69.4% moderate performers and 30.6% high performers.A study done by Shivaraju PT et al(1) concluded that the overall marks were improved in the post test where majority of the students scored above five (out of 10) and none of them were low performer. A study by Neelavathi D(6) showed that there was moderately adequate knowledge (80%) and 20% inadequate knowledge in pretest while majority of staffnurses gained moderately adequate knowledge (73.33%) and 26.67% of them had gained adequate knowledge in post test. Our study is in line with previous studies which demonstrated improvement in the knowledge score followed by training to the medical staff. Post score has shown improvement as pretest conducted sensitised the candidiates for their existing knowledge, made them oriented to the topics going to be covered in the training course and created interest in them to grasp the knowledge so that post test score could be improved at the end of the training.

Our study is a novel study which had not been conducted in the past under similar settings. The training had covered multiple topics, involved multiple resource persons and teaching method had variety (not typical didactic type). There are certain limitations of the study also.There were only female staff nurses in the study so comparison among the male and female candidiates could not be done. Also the study was not able to record certain demographic characterstics like length of service, place of posting, qualification etc.The study was performed on small sample of candidiates which was not representative of all staff nurses in the country.

Conclusion

The overall performance was improved after getting the training. Mean pre and post trest score showed improvement from 17.1 to 19.7. The improvement in the overall mean score was found to be statistically significant which was as a result of the training imparted to the study participants in the RHFWTC Kangra at Chheb. The RHFWTC should continue such type of trainings for the capacity building of medical staff. The same study can be conducted on larger samples for better generalization. The similar study could be replicated in different settings. Longitudinal and experimental studies can be done on larger sample size to assess effectiveness of various other trainings on different categories of medical staff.

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