

## Effectiveness of Basic Workshop on Research Methodology among Post Graduates & Lecturers of Medical College in Nagpur

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### Abstract

Assessment is a key method of improving standard as well as establishing competency. Multiple choice questions is considered a reliable instrument for its content specificity compared to essay questions & it tests factual knowledge and comprehension. The research project and the research field are the basis of a task which is set in order for the student to acquire research skills and to demonstrate these to independent assessors. We conducted a study to know the effectiveness of basic workshop on research methodology among post graduates & lecturers of medical college in Nagpur.

**Keywords:** Workshop, Multiple choice questions.

### 1. Introduction

Recently there has been a strong push to encourage science students to develop the Attributes of 'being a scientist' in their graduate courses, particularly in their approach to science, through the development of skills such as critical thinking, problem solving and appropriate use of evidence. These skills have been developed through activities such as research experiences. Inquiry based classes and workshops.[1]

Assessment is a key method of improving standard as well as establishing competency.[2] Multiple choice questions is considered a reliable instrument for its content specificity compared to essay questions & it tests factual knowledge and comprehension[3]. The research project and the research field are the basis of a task which is set in order for the student to acquire research skills and to demonstrate these to independent assessors.

### 2. Methodology and study factor

3 days workshop was organised for basic research methodology among 36 participants which includes post graduates and lecturers from different departments. Based on content of the workshop sessions the questionnaire was developed using multiple choice questions. This questionnaire was validated beforehand. The questionnaire consists of 12 multiple choice questions and 5 true/false type.

The above questionnaire was given to post graduates and lecturers on the first day in the beginning of the

workshop to record the prior knowledge and at the end of the workshop as a post-workshop test. By referring to a key of correct answers for all pre-test and post-test papers were assessed considering score of one mark for each correct answers and zero for wrong answers.

Data was analysed using SPSS version 16

P < 0.05 is considered to be significant.

#### 2.1 Study design

**Hospital based:** Non Randomised control study

**Case selection:** Post graduates and lecturers attending the workshop

**Sampling Method:** Universal sampling

#### 2.2 Outcome measure

Cumulative and each item wise score of pre test and post test were compared. To avoid the bias of the pre workshop knowledge, post test data was evaluated against pre-test finding.

### 3. Results

The workshop was found to be very effective in delivering the knowledge of basic research skill to the participants. Table 1 shows the evaluation of pre test and post test score of the participants indicating p value as significant.

**Table1: Mean and SD of Pre-test and Post-test evaluation for the workshop on basic research skill development**

Items	N	Mean score	Std. deviation	Mean diff	P value
Pre test	36	7.4	5.54	7.11	P = <0.0001
Post test	36	14.5	4.46		

Paired- t test: P<0.0001

Each question and response was then analysed using Mc Nemar chi square test. Out of 17 responses 14 responses were found to be significant which indicates that majority of

the participants had understood the respective topics in the workshop.

**Table 2: Distribution of pre and post-test Items with correct responses**

Items	Pre test n (%)	Post test n (%)	P value
1. ___ studies are taken to formulate hypothesis.	12(33.3)	28 (77.7)	<0.0001
2. References are numbered according to their appearance in the text in ___ style.	5(13.8)	29(80.5)	<0.0001
3. Sensitivity of a number is a number of ___.	24(66.6)	34(94.4)	0.002
4. Representation of a data in a circle is a example of ___.	34(94.4)	36(100)	0.50
5. authentic source of literature search is ___	25(69.4)	36(100)	0.001
6. Chairperson in IEC should be ___.	14(38.8)	34(94.4)	<0.0001
7. ___ study is also called as retrospective study.	18(50)	34(94.4)	<0.0001
8. study which gather information on disease and outcome at a single point of time is called as ___.	9(25)	29(80.5)	<0.0001
9. the trial in which doctor and the participant are not aware of group allocation and treatment received is called as ___ blind trial.	11(30.5)	30(83.3)	<0.0001
10. Every 5 <sup>th</sup> individual is included in the sample; the sampling method is called as ___.	7(19.4)	28(77.7)	<0.0001
11. To calculate sample size in case control studies which of the following value is required?	5(13.8)	26(72.2)	<0.0001
12. In a questionnaire if subject answers in his own word it is called as ___ ended question	7(19.4)	25(69.4)	<0.0001

P<0.05 significant using Mc Nemar Chi Square test.

**Table 3: Distribution of pre and post-test Items (True/False type) with correct responses**

Items	Pre test n%	Post test n%	P value
1. Cohort study is a prospective study.	30(83.3)	35(97.2)	0.062
2. In truly random process each element in the population will have a probability of being sampled.	12(33.3)	27(75)	0.0001
3. Specificity of a diagnostic test ia number of false negative	28(77.7)	32(88.8)	0.12
4. Relative risk is calculated in cohort study.	7(19.4)	29(80.5)	<0.0001
5. Height, weight, serum cholesterol are quantitative variables.	21(58.3)	33(91.6)	0.0005

P<0.05 significant using Mc Nemar Chi Square test.

#### 4. Discussion

The participants in the workshop were postgraduates and lectures from the college. These post graduates have just cleared the under graduation in which very little knowledge of research is delivered. Various studies [4,5] have shown that research skills developed during the initial period of post graduation found to be very effective in the later part of the course.

Postgraduates with basic knowledge of research help them in preparing thesis as well as open their mind and make them think in terms of evaluation of various treatments given to the patients in terms of research. It helps them to understand the contents during their journal presentation in PG teaching and paper presentations during conferences and CMEs.

Lectures are exposed to research work during their dissertation preparation in post graduation. Basic research skill workshop helps lectures in taking and doing a research projects which is basic requirement for any medical college and institution. It helps them to choose a topic for research, frame a research question, sampling etc.

Hassan S [6] suggested that MCQ is the only objective instrument in the entire battery of summative assessment and the validity of MCQ can be improved by changing the true/false format of MCQ to a single best answer or extended matching multiple choice questions.

In our study 83% of the participants scored more than 50 percent in the post test indicating the importance of workshop. Wilson J [7] suggested that Uptake is patchy from course to course in a program of study. Therefore these basic research skill workshops must be a continuous process and repeat periodically.

#### 5. Conclusion

Going beyond the horizons of textbooks and making something innovative is certainly a measure to improve an individual in practical terms. Workshops held at regular intervals do perform the same motive for a student. Being exposed to these workshops makes him more prone towards learning and getting better with each session.

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