

Original Article**Effectiveness of Workshop on Evaluation Methodology for Medical Teachers****Chinmay Shah¹, P. A. Gokhale², H.B. Mehta³**¹Assistant Professor, ² Professor, ³Professor and Head, Department of Physiology, Govt. Medical College Bhavnagar, Gujarat.Correspondance: Chinmay Shahm Email: cjshah79@yahoo.co.in**Abstract:**

A workshop on evaluation methodology was designed at Government Medical College, Bhavnagar. The workshop comprised of six modules namely: Mechanics of Paper setting, MCQ formulation & Item analysis, Mini CEX, OSPE, OSCE and Structured Viva. Study was carried out with aim to find out effectiveness of workshop in changing knowledge and attitude towards different evaluation methodology.

Method:

Instruction was provided during a one day workshop with eight hours interactive sessions. Medical teachers from different parts of Gujarat participated, and the instructors were experienced clinicians and educationist. Lectures, group discussions, case simulations, video presentations and role-plays were the forms of instruction.

Results:

Using standardized questionnaires, the participants rated the quality of the workshop highly. They considered it to be a feasible and appropriate educational intervention and that it had a positive impact on their teaching skills.

Conclusion:

This workshop showed that significant change in knowledge and attitude towards different aspects of medical Student Evaluation process. The results show that it is a suitable and effective educational intervention

Background:

The educational objective in medicine as well as in other disciplines, are generally allotted to three domains – cognitive, psychomotor and affective⁽¹⁾. Hence, student evaluation should be designed to answer whether an undergraduate student has achieved the above education objectives or not.

Evaluation has a profound effect on nature of learning and is considered as the single most important variable in directing the students to learn in a particular way. The word 'evaluation' is defined by Webster's dictionary

'examination and judgement concerning the worth, quality, significance, amount, degree or condition.' In the field of education, the term is understood as examination by someone else-teacher or any other agency, board, university, etc. – of students who have been educated in a certain way for a particular subject / course. Unless the agency other than the student himself certifies the worth of the end of a given course.

Evaluation system in Gujarat traditionally consists of the written papers, practical examination and viva voce. In recent era of objective evaluation, main format remains essentially unaltered but changes has to be made, mainly to make examination more objective and reliable. All junior and senior teachers need to be trained in this way to decrease subjectivity in evaluation of medical students. Study was conducted to assess effectiveness of one such workshop comprised of six modules namely: Mechanics of Paper setting, MCQ formulation & Item analysis, Mini CEX, OSPE, OSCE and Structured Viva.

Methodology:

After obtaining ethical permission from the institutional ethics committee study was conducted at our institute.

Study Design: This pre-post test experimental descriptive study was conducted at Government Medical College, Bhavnagar. 200 Medical teachers working in different Medical colleges of Gujarat participated in Workshop on evaluation methodology organized at our institute.

Interventions: Instruction was provided during a one day workshop with eight hours interactive session in the form of Lectures, group discussions, case simulations, video presentations and role-plays. Instructors were experienced clinicians and educationist. Overall, the participatory development approach used to create mutually-acceptable workshop and co-learning experience⁽²⁾.

A pre-lecture pre tested structured questionnaires consisting of likeart scale and Multiple Choice Question (MCQ) was completed by teachers to test their existing knowledge. Pre test /Post test questionnaire was prepared and validated with the help of feedback of FAIMER fellow on list-serve as well as consultation of resource faculty was done for the same. Following the lecture the Post test was repeated to assess retention and application of knowledge derived from the interactive lecture. Response of programme evaluation was also assessed to know the overall rating of workshop.

Statistical Analysis: Statistical analysis was performed using the Sigma state trial version. Mean was used to determine of test scores. The Student paired t-test was used to determine if the differences between the pre lecture and post-lecture test results were significant. Differences were considered significant at $p < 0.05$.

Result:

Questions	Pretest score	Post test score
1. Formative evaluation gives feedback to both students and teachers	83.93	87.78
2. SAQs, unlike MCQs do not require pre-validation	22.32	26.67
3. Question paper should reflect the health needs of the geographic region	80.36	84.44
4. Question paper should include such questions whose answers students do not know	16.07	5.556
5. MCQ should be designed to measure an important learning outcome	91.96	87.78
6. The stem of the MCQ should be positive most of the time	58.04	78.89
7. Validation of MCQs should as far as possible be an individual effort	40.18	41.11
8. Prevalidation is done before administering the MCQs to the students	81.25	88.89
Questions	Pretest score	Post test score
9. MCQ can only test the recall component of knowledge	41.96	40.00
10. A MCQ with poor discriminative index should be stored if it is relevant	25.89	60.00
11. Subjectivity of the viva can	61.61	72.22

be reduced by a structured viva		
12. Viva Voce can test all levels of knowledge in cognitive, psychomotor (as part of Practical / Clinical examination) and affective domains	66.07	58.89
13. Viva can be conducted in a group of - students as a part of formative assessment	48.21	51.11
14. OSCE requires more planning time as compared to conventional examination	47.32	76.67
15. Mini CEX can be used both for formative as well as summative assessment	31.25	72.2

Questions (Tick correct alternative for the statements)	Pretest score	Post test score
16. What should be the minimum % of students responding to a distractor, so that it can be considered as an effective alternative?	31.00	62.00
17. In Item analysis of MCQ "p" is	13.00	70.00
18. In Item analysis of MCQ "d" is	30.00	81.00
19. The ideal range of difficulty index is	30.00	71.00
20. What is a disadvantage of multiple-choice questions?	58.00	56.00
21. On which type of question is it easier for students to guess the correct answer?	63.00	73.00
22. What is the name of the part of a multiple-choice question that contains the question or problem?	33.00	81.00
23. How many possible answers are supplied in multiple-choice questions?	76.00	84.00

Correct Likert scale for different questions (1-15)	Pre-test	Post-test	P value
AGREE	62%	76%	0.042
DISAGREE	49%	53%	0.042
DO NOT KNOW	16%	04%	0.006

The mean score was calculated for all 23 questions covering different evaluation methodology, incorporating combination of MCQ and Likert scale (ranging from 'I fully disagree' 5 1 to 'I fully agree' 5 5). Paired t-tests were used to compare outcomes between baseline and post workshop result. Pre and Post test result is shown in Tables, below

Discussion:

Halder and co-workers assessed the effectiveness of training in West Bengal⁽³⁾. They conducted an assessment before the commencement of training and repeated assessments after every training session. Significant difference was found in the post workshop scores.

Similar methods of assessing effectiveness of workshops and teaching sessions have been used and proved to be helpful for general practitioners⁽⁴⁾; asthma patients⁽⁵⁾; school teachers⁽⁶⁾, and parents⁽⁷⁾.

Same method was used in present study to assess the effectiveness of workshop on evaluation methodology. As shown in result table 1 shows definite increase in knowledge regarding different minute aspects of evaluation process. Change in the attitude regarding different technical aspects of evaluation process was also observed which is statistically significant as shown in table 2. Difference in Pre and Post MCQ question (Q.16 to 23 as shown in table 1) result is also statistically significant (P = 0.006)

Due to this workshop Faculty Of different colleges were very much sensitized for field of medical education and realized that what common mistakes are done during evaluation of students. 80% of participants are in favor of regular CME of different topic of medical education. Four faculty from our college were applied for FAIMER regional fellowship and one was selected for CMCL-2009. Faculty of our college has started using guideline received during workshop in all evaluation method

Limitations of this study was the small number of teachers who participated. This study tested immediate recall of knowledge and it remains to be seen whether the knowledge gained as a result of the event will be retained by the them and whether their habits will improve as a result. It would be useful to examine knowledge sometime after such an event to determine the need for continued and repeated training into this important subject.

In addition, the improvement in the MCQ score could be at least partially attributed to an 'Order effect'. It is possible that improvement in post-lecture scores could have happened Without the structured workshop, simply because the teachers had the

opportunity to think about the questions again and give a more considered answer. This could have been avoided if participants subjected to the MCQ test were randomized to no intervention and to structured learning groups⁽⁸⁾.

Conclusion:

Implementing workshops similar to this may be a feasible, effective way to enhance the knowledge and skills for doing most objective evaluation of medical student. In addition, it would be reasonable to assume that a similar method could be adopted to teach medical teachers newer techniques in teaching, learning and evaluation. Results of this study could be used to guide the development and implementation of continuing education program for medical teachers.

Acknowledgment: Authors are extremely grateful to Dean, Dr.B.D.Parmar for his constant guidance, support and help for this workshop and study.

Reference:

1. Guilbert J J : Educational Handbook for health personal. WHO offset Publication 35. Geneva: World health organization 1977. P 127
2. Stewart, M. K., Colley, D., Huff, A, Felix, H. C., Shelby B., Strickland, E., Redmond, P., Evans, M., Baker, B., Stephens, G., Nuss, H., & McCabe-Sellers, B. (2009). Participatory development and implementation of a community research workshop: Experiences from a community based participatory research (CBPR) partnership. *Progress in Community Health Partnerships*, 3(2), 165-178.
3. Halder A, Ray S, Biswas R, Biswas B, Mukherjee D. Effectiveness of training on infant feeding practices among community influencers in a rural area of West Bengal. *Indian J Public Health* 2001;45:51-6.
4. Sanci LA, Coffey CM, Viet FC et al. Evaluation of effectiveness of an educational intervention for general practitioners in adolescent health care: randomized controlled trial. *BMJ* 2000;320:224-30.
5. Meng A, Tierman K, Bernier MJ, Brooks EG. Lessons from an evaluation of the effectiveness of an asthma day camp. *Am J Matern Child Nurs* 1998;23:300-6.
6. Myers-Clack SA, Christopher SE. Effectiveness of a health course at influencing preservice teachers' attitudes towards teaching health. *J Sch Health* 2001;71:462-6.
7. Cowen PS. Effectiveness of a parent education intervention for at-risk families. *J Soc Pediatr Nurs* 2001;6:73-82.
8. Insaf Altun. The efficacy of workshop on body Fluids in health and disease and Its impact on nurses training *Pak j med sci* 2010 vol. 26 no. 2.page426-429