ORIGINAL ARTICLE

EVALUATING NEUROLOGY CME IN TWO EDUCATIONAL METHODS USING PATTON'S UTILIZATION FOCUSED MODEL

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Background: Generally in continuing education medical education (CME) the most time is consumed for in the planning and preparation of the event. This planning and preparation, however, needs recognition through an evaluative process. The purpose of this study was to evaluate neurology CME in two educational methods, lecture vs task-based learning, using Patton's utilisation focused model. **Methods:** This was an observational, cross-sectional inquiry. The questionnaire evaluated the educational elements such as learning objectives met, content covered, presentations at the level of understanding, level of interaction, knowledge gained, time management, queries responded, organisation, quality of learning material and overall grading of the educational event. General Practitioners were the key participants in this evaluation and consisted of 60 self-selected physicians distributed equally in both the TBL and lecture groups. Patton's utilization focused model was used to produce findings for effective decision making. The data were analysed using Mann-Whitney U test to know the value of the learning method that satisfied the most participants. **Results:** A total of 58 evaluations were returned, 29 from the TBL group and 29 from the lecture. The analysis of the elements showed higher mean ranks for TBL method ranging between 32.2 and 38.4 versus lecture (20.6–26.8). Most of the elements assessed were statistically significant (p>0.05), except time management (p=0.22). However, elements as 'objectives of the activity met' (p=0.07), 'overall grading of the event' (p=0.06) and 'presentations at the level of understanding' (p=0.06) were at border line. Of the 29 respondents in the TBL group, 75% rated all the elements of the program above very good. In the lecture group, 22 (75%) respondents out of 29 rated almost half of the elements above very good. **Conclusion:** Majority of respondents in the TBL group rated all program elements as exceptional compared to the lecture group in which only half of the elements were rated above very good. Task-based learning method made the most impact on participants' satisfaction.

Keywords: Evaluation, Management-oriented, Task-based learning, Lecture

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INTRODUCTION

Over few decades evaluation itself has become an applied science.[1] Evaluation is defined by Concise Oxford Dictionary as 'to form an idea of the value of'. Cronbach defined evaluation as an examination that is used in improving program performance. In medical education, evaluation is many times synonymously used with assessment. Though assessment is concerned with the measurement of student performance, while evaluation involves the process of knowing the value or merit of a program for subsequent decision making for necessary changes[1,2]

Generally in continuing medical education (CME) the most time is consumed for the planning and preparation of the event. This planning and preparation however needs recognition through an evaluative process.[3] In the past success of continuing educational programs were judged informally through participants' scores, casual observations, report by outside experts and other methods.[4] This could be due to lack of formal training, absence of recognised approaches and models that are required to accomplish an evaluation.[2] In recent years a number of evaluation approaches have been explored and evaluators now take into account these approaches in systematic collection, analysis and interpretation of information for decision making or judgment about educational programs.[4,5] These approaches often overlap each other and a number of classifications have been presented. However Worthen *et al,* have provided a useful and practical categorisation of approaches, dividing them into six: objectives-oriented (evaluating achievement of objectives), management-oriented (meeting needs for decision-makers), consumer-oriented (information on products), expertise-oriented (quality judgment by experts), adversary-oriented (viewpoints of different evaluators) and participant-oriented (participants involvement in planning).[1] This study serves CME provider (CME Office) needs in managing future CME programmes, for which the management-oriented approach is likely to be a powerful tool for evaluation. Evaluation models fitting into this decision-management approach are Patton's utilisation focused evaluation, Stufflebeam's CIPP, and UCLA. Patton is the most well-cited advocate of management-oriented approaches and emphasised on the identification of the relevant decision makers as the first step in the evaluation process.[6] They have strongly

supported evaluations that are useful, practical, accurate, systematic and ethical, but the vital consideration is the 'utilisation' of their results for future improvement and judgment.[5] According to Patton, the approach is particularly focused and is directed towards the specific information needs by the decision makers for specific intended use.[6]

In education survey questionnaires have been widely used in collection of data from participants that allow responsive research to changes in planning and implementation, and the learning environment in a very short period of time.[5,7] This study consisted of quantitative questions to acquire a useful snapshot of opinions required by the primary users for improvement in future planning and implementation.

METHODS

This was an observational, cross-sectional inquiry in which the evaluation results sought information on the short term and direct effects of the continuing educational interventions. General Practitioners were the key participants in this assessment and consisted of 60 self-selected physicians distributed equally in both the TBL and lecture groups.

The evaluation survey included ten questions designed to explore insight of the educational elements such as learning objectives met, content covered, presentations at the level of understanding, level of interaction, knowledge gained, time management, queries responded, organisation, quality of learning material and overall grading of the educational event. The participants were asked to evaluate and rate their satisfaction on each of the items using a 5-point Likert scale, where 1=poor, 2=average, 3=good, 4=very good and 5=excellent. The survey was administered immediately after the educational intervention, using a printed form.

Mann-Whitney U test was used to know the value of the learning method that satisfied the most participants. The mean ranks of all the items in the survey were determined. Descriptive analysis of percentiles for each question was calculated. The data were analysed using SPSS-19 and $p \leq 0.05$ was considered statistically significant.

RESULTS

A total of 58 evaluations were returned, 29 from the TBL group and 29 from the lecture. The analysis of the elements showed higher mean ranks for TBL method ranging between 32.2 and 38.4 versus lecture (20.6–26.8). Most of the elements assessed were statistically significant ($p>0.05$), except time management ($p=0.22$). However, elements as objectives of the activity met ($p=0.07$), overall grading of the event ($p=0.06$) and presentations at the level of understanding ($p=0.06$) produced marginally significant results. Of the 29 respondents in the TBL group, 75% rated all the elements of the program above very good. In the lecture group, 22 (75%) respondents out of 29 rated almost half of the elements above very good.

Table-1: Mann-Whitney test

Element	Method	Mean Rank	*p*
Learning objectives met	TBL	33.21	0.076
	Lecture	25.79	
Content covered	TBL	36.53	0.001
	Lecture	22.47	
Presentations at the level of understanding	TBL	33.38	0.062
	Lecture	25.62	
Level of interaction	TBL	37.47	0.000
	Lecture	21.53	
Knowledge gained	TBL	34.67	0.012
	Lecture	24.33	
Time management	TBL	32.12	0.222
	Lecture	26.88	
Queries responded	TBL	37.81	0.000
	Lecture	21.19	
Organization	TBL	36.40	0.001
	Lecture	22.60	
Quality of learning material	TBL	38.40	0.000
	Lecture	20.60	
Overall grading of the event	TBL	33.41	0.062
	Lecture	25.59	

Table-2: Response rates by percentile and Likert scale

		Percentile by rating		
Element	Method	25%	50%	75%
Learning objectives met	TBL	4	4	5
	Lecture	3	4	5
Content covered	TBL	4	5	5
	Lecture	3	4	4
Presentations at the level of understanding	TBL	4	4	5
	Lecture	3	4	5
Level of interaction	TBL	4	5	5
	Lecture	3	4	4
Knowledge gained	TBL	4	5	5
	Lecture	3	4	5
Time management	TBL	3	4	5
	Lecture	3	3	4
Queries responded	TBL	4	4	5
	Lecture	2	3	4
Organization	TBL	4	5	5
	Lecture	3	4	5
Quality of learning material	TBL	4	5	5
	Lecture	1	3	4
Overall grading of the event	TBL	4	4	5
	Lecture	3	4	5

DISCUSSION

This study was conducted to examine the short term and direct effects of the CME interventions, with a particular focus to inform the decision makers for future improvement and judgment.[1] This evaluation will likely inform the providers the perceived potential problems and weaknesses in both the educational methods.

The results of 9 elements were almost significant except the time management. Considerable differences were observed in the mean ranks between the two groups. The analysis of the elements showed higher mean ranks for TBL method versus lecture. Most of the elements assessed were statistically significant. The element of time management acquired insignificant results. It could be due to lengthy TBL session (>4 hours) and short lecture timings (≤1 hour), that left both

groups unsatisfied. However, elements as objectives of the activity met, overall grading of the event, and presentations at the level of understanding produced marginally significant results. The above defined elements draw attention of the providers for fine-tuning.

There was no difference in response rates of both groups according to overall performance of the educational event. This element indicates that majority of the participants in both groups when taken an aerial view of the event graded it as exceptional. This is an interesting finding; however, we should be careful when interpreting the results.

There are limitations to this study. Although there were representations from general practitioner community in both groups but to fill in the vacant slots and for the required sample size postgraduate trainees and residents in neurology specialty were included. The use of Paton's utilised focused evaluation seems to be another limitation as only the elements that are vital to the decision makers for their specific intended use were surveyed, as these may represent some of the total number of elements. However surveying in-depth the whole system involving the context, input, processes and product was beyond the scope of this initiative, which was specifically focused and was directed towards the specific information needs by the decision makers. CME office is directly responsible for providing, planning and implementation of the continuing medical education activities and thus is the logical stakeholder and needs recognition as a provider through an evaluative process.[3] Thus, if we had determined that satisfaction of the participants in both groups was <3 on any element on a 5-point scale, that mechanism would have been called into question. It does suggest, however, some urgency into quality of learning material used and mechanism of response to queries for lecture group.

CONCLUSION

Majority of respondents in the TBL approach rated all program elements as 'exceptional'. In lecture group only half of the elements were rated above 'very good'. The results of nine elements were significant except time management. Participants were satisfied with TBL approach. CME providers may utilise the results of this snapshot of opinions for improvement in future planning and implementation of educational events and more specifically focusing on the quality of learning material and mechanism for responding queries in lectures. Providers may need further research and guidance in understanding the characteristics and deficiencies of the learning material and interacting mechanism. Results of this particularly derived information by the CME providers declared task-based intervention as significant and made the most satisfaction among the participants.

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