ORIGINAL ARTICLE

OUTCOME OF EXPERIENTIAL LEARNING: A QUASI EXPERIMENTAL STUDY

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Background: The practical curriculum of 2nd year medical students mainly consists of neurological examination. Objective of this study was to see the effect of experiential learning on performance of medical undergraduates during examination of cortical and peripheral perceptions. **Method:** In this quasi experimental study, 142 students of 2nd Year MBBS, University College of Medicine and Dentistry were inducted and Experiential Learning cycle was used as a teaching and learning intervention. This cycle was run in 4 stages: Concrete experience, Observation and reflection, Formation of abstract concepts (analysis) and generalizations (conclusions), and Hypothesis testing leading to new experiences. A conventional practical demonstration was given followed by hands-on training by trained Demonstrators. The students were assessed at observed OSPE stations. Their performance was video-recorded for reflection. The students then reflected on performance videos (reflection on action). They were asked to identify and quote their strengths and weaknesses. They were then subjected to small group discussion/peer-assisted learning. The students evaluated each other with the help of standardized key. In late session exams the students' final score was recorded. Their performances before and after reflection were compared through paired sample Student's *t*-test. **Results:** There were highly significant differences in scores (p=0.006) before and after implementation of the experiential learning cycle. **Conclusion:** Academic performance of students can significantly improve by implementation of experiential learning.

Keywords: Experiential learning, clinical skills, neurological examination, assessment
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INTRODUCTION

Neurophobia is common among medical students and doctors.[1] Patients are also of the opinion that general doctors show lack of confidence in managing neurological disorders.[2] The reason why neurosciences is considered difficult is dearth of knowledge in basic neuroscience and lack of confidence while performing neurological examination.[3] Clinical physical examination, which is basis of clinical diagnosis depends on a firm footing in basic sciences.[4] In the senior years of training, students must be able to use the knowledge of basic sciences during their clinical practice.[5] It is important for the future doctors to have a sound knowledge of Neurology.

The implementation of experiential learning early in curriculum can allow students to start gaining confidence, especially in communication skills.[6] The Kolb Experiential Learning Cycle implies that acquisition of knowledge is based on experience. The learning cycle has 4 stages: learning by doing, reflection, conceptualization followed by experience transformation into a new one.[7] The objective of this study was to investigate the effect of experiential learning on performance of medical undergraduates during examination of cortical and peripheral perceptions.

MATERIAL AND METHODS

This quasi experimental study was approved by Ethical Review Board of University College of Medicine and Dentistry (UCM&D), The University of Lahore. The experiential learning cycle was used as a teaching and learning intervention. Total of 142 Second Year MBBS students who consented were enrolled for the study. This cycle was run in 4 stages: Concrete experience, Observation and reflection, Formation of abstract concepts (analysis) and generalizations (conclusions), and Hypothesis testing leading to new experiences.

A conventional practical demonstration was given followed by hands-on training by a trained demonstrator. The students were assessed at observed OSPE stations. Their performance was video-recorded for reflection. The students then reflected on performance videos (reflection on action). They were asked to identify and quote their strengths and weaknesses. They were then subjected to small group discussion/peer-assisted learning. The students evaluated each other with the help of standardized key. Lastly, in late session exams the students' final score was observed. Their perceptions regarding the new strategy were recorded on a pre-designed peer reviewed questionnaire. Performance of the students, before and after reflection, was compared through paired sample *t*-test, and $p \leq 0.05$ was taken as statistically significant.

RESULTS

The mean score of OSPE before and after implementation of experiential learning cycle was 56.4±2.4 *vs* 62.1±1.3 and the difference was statistically

significant (p=0.006). Their perceptions regarding this new strategy were recorded after one year, on a pre-designed questionnaire on Likert scale of 1–5 from strongly agree to strongly disagree. A total of 72% students rated it as an enjoyable experience, whereas, 17% students were of neutral opinion. Among all students, 74% agreed that learning was achieved, while 18% were neutral about it. Likewise, 42% agreed that it transformed their learning behaviour, while 33% were neutral; and 79% agreed that it affected their results positively, 15% being neutral. (Figure-1).

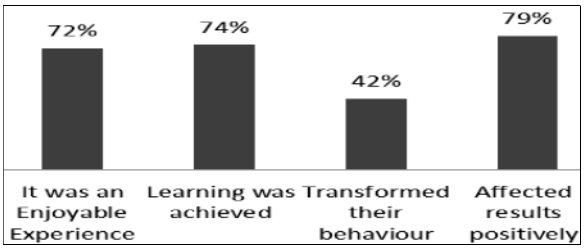

Figure-1: Perceptions of students regarding 'Experiential Learning'

DISCUSSION

The present study reports a positive impact of experiential learning cycle on students' assessment at UCM&D. Another study showed similar results on students' score.[8] During undergraduate period medical students have to acquire knowledge, skills, and attitudes so that future doctors can provide competent patient care. Our results are in accordance with Tagawa *et al*9 and showed improvement in OSCE scores. However, the study implemented the reflection and peer learning component.

Utilizing all stages of 'Experiential Learning Cycle' increases students' knowledge retention.[10] Students' engagement in the learning process was a key in improving the learning outcomes.[11] Students' perceptions on implementation of experiential learning showed that students not only enjoyed learning but it had a positive impact on learning. The extent of engagement and enjoyment was different with some students finding the challenge a burden despite acknowledging good learning outcomes.[12]

A total of 79% participants were of the view that experiential learning helped them in improving their assessment scores. The new design was effective in improving students' satisfaction and engagement in learning.[13] The beneficial effects of encouragement and the assessment of reflective performance are depicted in the portfolio literature.[14] An outcome of experiential learning reflects that it is the combination of reflection upon experience, both playing a pivotal role to the overall learning process. The results of experiential learning are variable with enhancement of skills and personality development.[15]

CONCLUSION

Experiential learning cycle was effective in improving students' OSCE scores. Experiential learning cycle was not only an enjoyable experience but also helped the students in achieving the learning outcomes. The incorporation of cycle resulted in students' satisfaction on their assessment score.

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