



Comparison between conventional lecture and role play on student learning about risk factors of diabetes mellitus

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Abstract

Background Role play can be useful teaching learning method to learn communication and attitude along with improvement in knowledge. This study evaluates and compares the effects of conventional lecture and role play on learning among undergraduate medical students.

Aims 1. To introduce role play as a teaching learning method. 2. To compare acquired knowledge and communication skills between classroom teaching and role play. 3. Assessment of role play through student's and teacher's reflection.

Methodology This educational interventional study was conducted for a period of 9 months (May, 2018 to January, 2019). Thirty MBBS students of sixth semester were divided into two equal groups. First group was imparted knowledge via conventional lecture and second group through role play about risk factors of Diabetes Mellitus. Both groups were evaluated by pre-post-test for cognitive domain and by short case for affective domain through peer reviewed and pre validated checklist. Reflection of students and teachers about role play was observed by five points Likert's scale.

Results Both groups had significant gain of knowledge assessed by pre-post-test with no significant difference between two methods (lecture and role play). In comparison with conventional lecture, role play found more effective to impart communication skills and attitude assessed by short case. Most students and teachers gave reflection about role play as interesting, engaging method and agreed that role play should incorporate in medical education.

Conclusion Role play imparts better communication skills with same knowledge in comparison to conventional lectures. Reflection of students and teachers show role play should be incorporated in medical education.

Keywords: lecture, likert's scale, reflection, role play

Introduction

Increasing medical knowledge and the consequent recognition of problems along with the shift from teacher-centred instruction to learner-centred teaching in higher education have imposed new responsibilities on both the teachers and the learners. Among these the most important issues is choosing the best learning method. Effective learning is in fact the result of a good teaching. Lecture is the most prevailing method of teaching in medical education due to its numerous benefits including cost-effectiveness. Role playing is another approach for teaching and learning. It has been especially designed to analyse individual values and behaviours, establish solutions to interpersonal and personal problems, and develop empathy with others.

In medical education, role playing can be a practice for learners not only to communicate with patients, discover emotions involved in various behaviours, and practice new behaviours and attitudes in a safe situation that resembles real conditions but also assists the students to enhance their understanding of topic with remembering important points more precisely.

Despite the repeated emphasis on using modern teaching methods, the teachers still prefer traditional methods. Implementation of modern and active methods of learning will

undoubtedly require an approach to research-based education. Therefore this study has been designed to evaluate and compare the effects of lecture and role play on learning and to assess role play as a teaching method based on reflection.

Methodology

This educational intervention study was conducted for 9 months of duration (May 2018 to January 2019) participants were 6th semester MBBS students. A total of 30 students who were posted in department of General Medicine during their rotation posting were included in the study after written informed consent. Thirty MBBS students were divided randomly in two groups of 15 students each. Pre-test based on questions regarding risk factors of Diabetes Mellitus was taken for both the groups. After pre-test Group A was imparted knowledge about risk factors of diabetes via lecture and Group B through role play. Role play was executed by teachers after preparing a pre validated and peer reviewed script. Role play was presented by teachers and observed by students of group B. Both groups were evaluated by pre and post-test for cognitive domain and by short case presentation for affective domain through peer reviewed and pre validated checklist. Comparative analysis was done.

Reflection of student and teachers / faculty members about role play was obtained on a 5 points Likert’s scale (strongly agree, agree, cannot say anything, disagree, strongly disagree) and analysed.

At the end cross over was done i.e. group A students were shown role play and group B students were taught through lecture to maintain uniformity of teaching.

Results

Total of 30 students participated in the study and 4 faculty members were also involved in observation of role play. Assessment of cognitive domain was done using pre and post-test assessment of both the groups. Mean marks gained by students of group A (taught by lecture) in pre and post-test were 17 and 28.4 respectively. There was significant gain in knowledge of students of group A assessed by paired t test (p<0.001).

Mean marks gained by students of group B (taught by role play) in pre and post-test were 16.9 and 28.2 respectively. There was significant gain in knowledge of students of group B assessed by paired t test (p<0.001).

No significant difference was found between gained marks (knowledge) of group 1 and 2 after applying student t test (p>0.05). (Table 1)

Table 1: Comparison of pre and post-test (Cognitive domain).

Group	Pre-test Mean ± SD	Post-test Mean ± SD	Paired ‘t’ Test applied	Student ‘t’ Test applied
Group 1	17 ± 6.0	28.4 ± 5.6	p<0.001*	p>0.05#
Group 2	16.9 ± 5.9	28.2 ± 5.8	p<0.001*	

*Significant difference between pre & post-test marks in each group. # No significant difference between gained marks of two groups.

To assess the affective domain mean mark obtained by students of group A and group B in short case were compared which were 20.5 and 30.1 respectively. Significant difference was found between marks of two groups after applying unpaired t test (p<0.001). This implies that students taught through role play were better in communication and attitude. (Table 2)

Table 2: Comparison of short case marks between group 1 and 2. (Affective domain)

Group	Short case marks (Mean ± SD)	Unpaired t test p value
Group A	20.5 ± 6.7	p<0.001*
Group B	30.1 ± 9.7	

*Significant difference between marks obtained by groups

Reflection on role play of group B was obtained on 5-point Likert’s scale. 80% students strongly agreed and 20% agreed that role is an interesting teaching learning method, while 86.7% students strongly agreed and 13.3% agreed that role play is an engaging teaching learning method. In response to the question of ‘role play is a better teaching technique than conventional lecture’ 80% students strongly agreed while 20% agreed. Ten students (66.7%) strongly agreed, 3 (20%) students agreed that role play is motivating teaching and learning method while 2 students (13.3%) opted the option of ‘cannot say anything’. Nine students (60%) strongly agreed, 3 (20%) students agreed that role play is one of the preferred teaching and learning methods and should be incorporate in medical education system and 3 students (20%) opted the option of ‘cannot say anything’. None of the student disagreed or strongly disagreed to the fact that role play is interesting, engaging, better, motivating, preferred teaching learning method. (Figure 1)

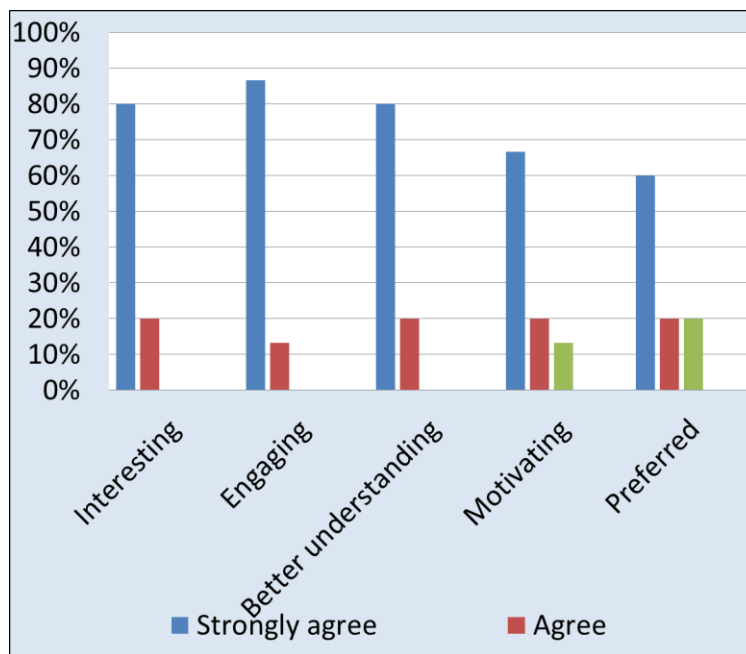


Fig 1: Student’s reflection about role play on Likert’s scale

Reflection of 4 teachers involved in role play was obtained on 5 points Likert’s scale. All teachers (100%) found that role play is interesting, engaging and it explains well about real scenario,

facilitates experimentation and imagination in teaching. Three teachers (75%) strongly agreed and one (25%) agreed that role play should be incorporate in medical education. (Figure 2)

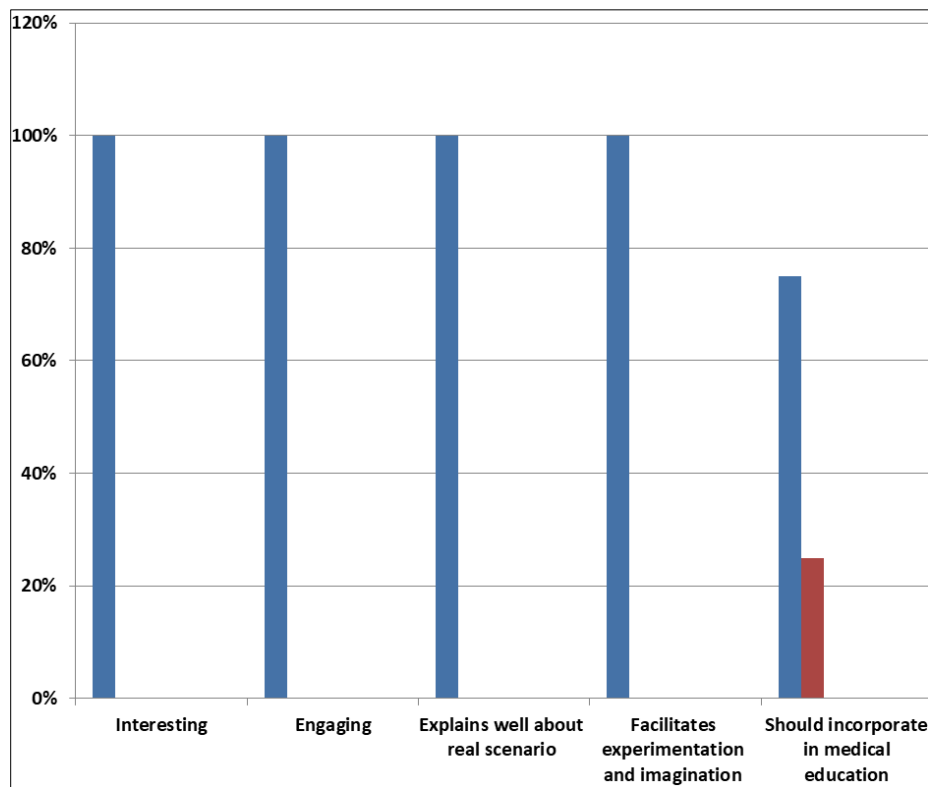


Fig 2: Teacher's reflection about role play on Likert's scale

Discussion

This educational interventional study conducted on 30 MBBS students of sixth semester compared the effect of conventional lecture with role play as teaching learning technique. Current study found that role play imparts better communication skills with same knowledge in comparison to conventional lectures.

In a study by Acharya *et al.*,^[1] twenty-four final year MBBS students were selected for the study and subjected to a pre sensitization test in short case format covering affective, cognitive and psychomotor domains from cardiovascular, respiratory, and gastrointestinal system and marks were recorded. Later, the students were sensitized with role-plays of common clinical scenarios. Finally, post sensitization test in the same short case format was conducted. It was found that the post-sensitization scores in each domain were significantly better than the pre-sensitization scores including cognitive domain, affective domain and psychomotor domain^[1]. These findings favours the results of current study that role play is effective teaching learning method for affective as well as cognitive domains.

A study by Manzoor *et al.*,^[2] was conducted on 46 fourth year MBBS students and 17 third year MBBS students. Role-plays were identified as most effective method of teaching by 37.9% students followed by lectures by 25.8% students. 78.5% students admitted that role-plays improved their knowledge of the subject, 84.6% said that it will help them in their clinical performance. 89.4% students found role-plays interesting, 74.2% wanted to incorporate roleplays as a part of curriculum, 88.9% students agreed that role-plays improved their communication skills, 31.8% students believed that it helped them in making acquaintance with the local situation, 76.7% students identified role-plays as a feasible way of andragogy and 76.2% students said that it provoked critical thinking about the subject. 85.7%

students admitted that their attention span was better in role-plays as compared to lectures.

In study by Daniel Riani Gotardelo DR *et al.*,^[3] all students felt involved and motivated in the activity (role play). 78.5% strongly agreed and 19% partially agreed that the method allowed reflection on knowledge, abilities and attitude. The study found that role play is consistent with a more positive learning environment.

Above mentioned studies^[2, 3] also found positive reflection of students toward role play on various parameters, similar to the findings of current study. In current study along with positive reflection of students, all teachers (100%) also found that role play is interesting, engaging teaching learning method and it explains well about real scenario, facilitates experimentation and imagination in teaching. 75% teachers strongly agreed and 25% agreed that role play should be incorporated in medical education. Study by Bindu *et al.*,^[4] included 98 final- year students. Role play was found to be the most preferred tool (33%) for teaching communication skills to the students. Majority of the students (88.78%) and faculty (91.67%) felt that role play helped in teaching communicating skills. Comparison of pre- and post- role play scores on communication skills showed statistically significant improvement, which was in coherence with the current study where there was similar statistically significant improvement in pre and post-tests results.

Other studies by T. Pourghaznein *et al.*,^[5] Dadgar Moghadam M and Khadem-Rezaiyan M^[6], Singh K *et al.*,^[7] and Clare Knowles *et al.*,^[8] found that role plays is better than lectures, e-learning, oral presentations and beneficial in creating an instant connect to real life situations, student ownership and active participation, visual and auditory impact, removal of communication barriers with teachers, and delivery of simplistic and effective message.

These results imitate similar findings as the current study where student reflect more satisfaction with role play.

According to study by Hidayati L *et al.*,^[9] the result of the student's response to role-playing emphasised it to be helpful in cultivating positive attitude and training students as a prospective teacher. These findings are in cohesion with the findings of current study.

This study concluded that the role-play is an impactful tool to improve student learning and can be used as a teaching-learning model. The students' response to the implementation of role play reflected that it was an easy to understand method and can be applied in the learning process more frequently. It has the flexibility for implementation at all levels, it accelerates the understanding of learning materials, it trains students as an independent, responsible agent of learning. Current study favours the inclusion of role play as a teaching learning material along with other existing methods as learning is contributed better by collective methods.

Conclusion

Role play imparts better communication skills with same knowledge in comparison to conventional lectures. It can be used along with conventional teaching to improve communication and attitude with improvement in knowledge too. Role play is interesting, engaging, better and motivating teaching method according to reflection of students. It explains well about real scenarios, facilitates experimentation and imagination in teaching. Reflection of students and teachers show role play should be incorporated in medical education in collaboration with other techniques to enhance the learning of students.

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