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## Effectiveness of Academic Role-play in Understanding the Clinical Concepts in Medical Education

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### ABSTRACT

Medical education was evolved drastically to meet the needs of current generation students. Role play is the effective method to teach the clinical concepts. Role play promotes active learning and critical thinking. It also improves the communication skills which are most essential in medical education. The current study was aimed to evaluate the effectiveness of role-play in understanding the clinical concepts in medical physiology. The topic was explained in the routine lecture using power point presentation and video. Post-assessment was performed using 30 multiple choice questions. The perception of the students was also obtained after the role play. There was a significant ( $P < 0.05$ ) increase in the performance of students in the MCQ test followed by the role play. 75% of students agreed strongly that role-play along with class lecture helps to acquire better clinical knowledge. 76% strongly agreed that the role play promotes active learning. 80% of students strongly agreed that they enjoyed the role play. 72% of students strongly agreed that role play helps them to remember the clinical concepts easily. 90% of students strongly agreed that it increased their communication skills and motivated them to work in a team. 75% of students preferred role plays for learning the clinical concepts, and 70% of the students recommended the roleplay to be implemented in the curriculum. The study results provide research evidence about the effectiveness of the role play in teaching the clinical concepts. Further detailed studies are recommended to adopt role play in teaching the clinical concepts in medical education.



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### INTRODUCTION

Role play has been widely used in medical education to improve the communication skills (Hargie *et al.*, 1997; Charlton *et al.*, 1993; Steinert *et al.*, 1993; Mann *et al.*, 1996; Nestel *et al.*, 2002). Role plays are highly recommended for the problem-

centred approach (Knowles *et al.*, 2005). Role play promotes active learning among the students (Nestel *et al.*, 2007). Role play was reported to promote the interaction between the students and motivates them to work as a team. It also helps to increase the communication between the teachers and students. As the students perform the role play with involvement, they can remember it for a long time (Iram Manzoor *et al.*, 2012). Academic role plays are different from regular gaming role plays as in academic role plays the participants have to involve in the problem and understand the concept behind the problem and plan how to execute it in a meaningful way that a layperson also can understand it easily. During the preparation for the role play the students involved will learn many things from themselves by searching books, internet and from teachers through discussions and even from

their team members. AS they are learning with interest and also executing it, they will remember this for a lifetime. Being a doctor, professional students have to come across so many cases. So, in the physiology department, we have planned role play for the clinical aspects like myasthenia gravis, Parkinson's disease etc. The current study was aimed to evaluate the effectiveness of role-playing in understanding the clinical concepts in medical physiology.

## MATERIALS AND METHODS

**Study participants:** Ninety-seven first year BDS students were included in the study after obtaining the written informed consent. Willing participants were included in the study.

**Study setting:** The study was conducted at Department of Physiology, Vishnu Dental College, Bhimavaram.

**Study design:** The topic selected for role play was myasthenia gravis. The topic was explained in the routine lecture using power point presentation and video. Pre-assessment was performed before the role play using 10 multiple choice questions. Students were divided into three batches, and each batch was instructed to perform role-play on myasthenia gravis. Professors from other departments were invited to judge the role-play. Post-assessment was performed using 10 multiple choice questions. The questions were different for pre and post-assessment. The perception of the students was also obtained after the role play.

## Outcome measures

Multiple choice tests for ten marks were conducted before and after the role play. A different set of questions were used before and after the role play. At the end of the test, perceptions of students were recorded.

## Ethical considerations

The present study was approved by the institutional research committee.

## Data analysis

Data were analysed using SPSS 20.0. Data were presented as mean and SD. Student t-test was applied to observe the significance of the difference between the groups. Perceptions of the students were expressed as frequency and percentages. A p value less than 0.05 was considered significant.

## RESULTS

Results are presented in table 1 and 2. Multiple choice question test marks were presented in table no 1. Perception of students was presented in table no 2. There was a significant ( $P < 0.05$ ) increase in

the performance of students in the MCQ test followed by the role play. 75% of students agreed strongly that role-play along with class lecture helps to acquire better clinical knowledge. 76% strongly agreed that the role play promotes active learning. 80% of students strongly agreed that they enjoyed the role play. 72% of students strongly agreed that role play helps them to remember the clinical concepts easily. 90% of students strongly agreed that it increased their communication skills and motivated them to work in a team. 75% of students preferred role plays for learning the clinical concepts, and 70% of the students recommended the roleplay to be implemented in the curriculum.

**Table 1: MCQ test marks before and after the ILDP program (\*\*P<0.001 is significant)**

Parameter	Before	After	P value
MCQ test marks	4±2	8±1	0.0001***

## DISCUSSION

The current study was aimed to evaluate the effectiveness of role-playing in understanding the clinical concepts in medical physiology. Significant improvement in the academic scores was observed followed by the role play. Majority of the students enjoyed and agreed on the role play helped them to learn better. They recommended including the role played in the academic curriculum. The current trend of medical education was shifting to active learning and student-centered approach. To make education more interesting, there is always a need to implement new educational technologies to motivate both students and teachers. Engaging the dental students in the role play not only promotes active learning but also improves the knowledge of the students on basic as well as clinical subjects. Further, the role play also improves the skills of communication so that the students will learn how to convey the clinical information in a simple way that the patient and his accompanying person can understand. This skill will make them a successful doctor (Skelton *et al.*, 1999). Role play not only increases the cognitive and psychomotor skills of the students but also increases the bond between the students and teachers. In professional colleges, the approach of students is less to the teachers (Knowles *et al.*, 2005). These type of activities increases the teacher and student relationship so that student can approach the teacher further if any clarifications in the subject (Maier *et al.*, 1985). This also gives the opportunity to the teachers to become student friendly and to understand the students much better. An earlier study reported that role-play helped in improvement in the knowledge and understanding in community medicine (Shankar *et al.*, 2008). Further, it was testified that the skills acquired due to role-play helpful in

**Table 2: Perception of the students about the ILDP program (Data was presented as frequency and percentage)**

Perception	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree(%)
Role play along with class lecture helps to acquire better clinical knowledge	75	15	5	0	0
Role play promotes active learning	76	10	10	4	0
Enjoyed the role play	80	10	10	0	0
Role play helps them to remember the clinical concepts easily	72	20	8	0	0
Role play increased their communication skills and motivated them to work in a team.	90	10	0	0	0
Recommend the roleplay to be implemented in the curriculum.	70	20	10	0	0

the future practice of the students (Lanea *et al.*, 2007). Role-play was a cost-effective technology that can be adopted in medical education. It helps the budding doctors to understand the perspectives of a doctor and a patient that helps them to understand the feeling from the patient side also. This is most important for an efficient doctor (Bosse *et al.*, 2010). Another study reported that role-play was very successful in teaching genetics (Joyner *et al.*, 2006). Students learn to tackle difficult situations by the role play. Implementing the role play in the academic curriculum to teach clinical cases is recommended by earlier studies (Lim *et al.*, 2008; Dieckmann *et al.*, 2008). The present study results support earlier studies as there is an improvement in the performance of the students and the majority of them liked and enjoyed it. The most important feature of role play is it motivates even the passive learners. It helps the students to overcome social inhibition. Hence, including role play in the curriculum to explain critical cases benefits both the students and teachers. However, the active participation of the students is most important for the success or failure of any new medical education method. So the students must be explained and trained about the role play and its benefits prior for successful implementation of role play.

## CONCLUSION

Learning in the classroom and performing the same in practice by taking the role of the patient or doctor and expressing their feeling will all together help the students to remember and handling the similar case easier in future practice. The study recommends the implementation of role play in the regular curriculum to teach the clinical concepts.

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