Research Report

EFFECTIVENESS OF VIDEO-BASED LEARNING VERSUS ROLE PLAY FOR TEACHING FAMILY EDUCATION IN DEPRESSION TO PHASE III MEDICAL STUDENTS

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Background: Family education is an essential component of comprehensive care in depression. Innovative and effective teaching methods are required to equip medical students with the skills needed to deliver family psychoeducation. This study compares the effectiveness of video-based learning and role-play in teaching family education for depression. This study compared the effectiveness of video-based learning versus role-play in teaching family education for depression among Phase 3 MBBS students, with the effectiveness assessed using an Objective Structured Clinical Examination (OSCE). **Materials and Methods:** A total of 127 Phase 3 MBBS students were divided into two groups. One group (n = 66) received psychoeducation through video-based learning, while the other group (n = 61) received training through role-play. Post-intervention, students were assessed using an OSCE designed to evaluate psycho education skills. The mean OSCE scores and the number of students who passed the OSCE (based on predefined passing criteria) were compared between the two groups using appropriate statistical methods. **Results:** The video-based learning group had a mean OSCE score of 12.62 ± 3.732, while the role-play group scored 11.41 ± 3.509. A total of 47 students (72.3%) passed the OSCE in the video group, compared with 39 students (62.9%) in the role-play group. The difference in mean scores was not statistically significant ($p > 0.05$). **Conclusion:** Both video-based learning and role-play are effective for teaching family education on depression to MBBS students; given their comparable effectiveness, educators can select either method based on practical considerations.

Keywords: Psycho education, Medical Education, Video-based Learning, Role Play

INTRODUCTION

Communication skills are one of the very important soft skills medical students have to acquire during training. Effective communication helps doctors accurately understand their patients' symptoms, concerns, and medical history. This, in turn, helps make accurate diagnoses and effective treatment plans. Effective communication ensures smooth collaboration with patients and their family, leading to better health outcomes. It also helps patients to make informed decisions about their health. Teaching medical students communication skills was never given much importance in our earlier medical curriculum; these soft skills were considered to be imbibed by the students

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during the years of medical education. A study conducted by Choudhary and Gupta found an improvement in patient satisfaction after providing basic training in communication skills and counseling to medical students.[1] Communication skills are all the more important in a psychiatry setting due to the complexity of symptoms, etiology, and prognostic factors. Explaining to the patient and their family members regarding serious mental illness like schizophrenia or any other psychotic disorder becomes very difficult. Medical graduates should have good communication skills while educating family members regarding treatment and prognosis due to the stigma associated with psychiatric conditions.[1]

The National Medical Commission (NMC) has introduced Competency-based Medical Education (CBME) for the MBBS course in India. They have published documents outlining the topics, competencies to be acquired, and Teaching-Learning Methods (TLMs) for all subjects taught in the course. The Curriculum in Psychiatry has been revised by extending clinical postings from two to six weeks. 19 topics and 117 outcomes are specified in Psychiatry. Several topics in the Communication / Attitudes aspects have been included in the curriculum, in addition to the cognitive outcomes. Family Education in all major psychiatric disorders is one such skill included in Volume II of the Competency-Based Medical Education (CBME) Curriculum document.[2] These are core skills to be demonstrated at the "Shows How (SH)". Communication skills acquired by these sessions can get generalized and help the students to improve their ability to engage with patients and counsel them about many conditions. This approach takes a more active role in teaching communication skills to MBBS students.

Family Education, which is usually referred to as psychoeducation by psychiatrists, is a specific form of communication or counseling in which the therapist engages in a discussion about the illness, its causes, treatments, prognosis, and complications in a supportive and empathetic environment. This is an important part of the training of a young doctor. The skills gained here can be generalized to many situations in which a doctor must provide information, communication, and education to patients and their family members. The curriculum did not give much importance to such skills, but this is being drastically changed with the advent of the CBME curriculum. But still, there is a lack of clarity about which TLMs are best, and balancing outcomes with time constraints and a shortage of faculty is a real challenge. Using pre-recorded videos is one method that can be helpful in this context.

Bedside clinics and DOAP (demonstrate-observe-assist-perform) sessions are the suggested Teaching/Learning methods (TLM) for acquiring this skill and outcome, to be assessed through skills assessment according to the guidelines in the National Medical Commission (NMC) document. Integration with the Attitude, Ethics and communication (AETCOM) module is also suggested; other options include role-plays and video demonstrations of such sessions.[3] Peer–assisted role-plays can be done by students based on a guide, and watching their own friends doing it makes them more involved. Video demonstrations could also help achieve these outcomes. There is evidence that these methods can provide health education in various health and mental health-related conditions. Role-plays have also been found to be an effective tool for teaching communication skills to medical students across various settings.

Ahsen et al. used videos and role-plays to teach communication skills to 4th-year medical students in Pakistan regarding health conditions.[4] An OSCE conducted six months later also showed continued benefits, but it did not include a comparator group. Bhattacharyya D et al have used role-plays and DOAP sessions to teach screening and brief interventions to persons with alcohol dependence. However, they used only a pre-post comparison with a two-group parallel design to compare two different interventions.[5] Volabailu R et al. have shown that role-play can be successfully used in pharmacology to teach prescription-related communication skills to MBBS students.[6] Baes Saab and colleagues have reported that video-based learning is a useful method to teach counseling skills to medical students to interact with psychologically distressed individuals.[7] A systematic review and meta-analysis done in 2018 "found low-quality evidence showing that digital education is as effective as traditional learning in medical students' communication skills training.[9]Another study from Karnataka by Holla and Geetha found that role-play is better than traditional methods to teach medical students.[10] There is a lack of clarity in this study, as they used role-plays and lectures in the two study groups. One group received traditional lectures, and role-plays were added for the other group. Outcome assessment was using MCQs, and thus it appears that they were trying to impart knowledge in the cognitive domain using role-play as a supplement to lectures. However, no studies comparing video-based learning with role-plays for teaching family education to medical students on psychiatric disorders were found. Therefore, this study was planned to compare the effectiveness of – peer-assisted role-play based or Video-demonstration-based sessions, in teaching Family Education to Phase III medical students by comparing the two groups a) on the marks obtained in OSCE and b) the proportion of students who were able to score pass marks in the OSCE and to compare student's perception regarding both the teaching/learning methods and their confidence in doing the task.

MATERIALS AND METHODS

This comparative study on two TLMs was conducted at the Department of Psychiatry, Government Medical College, Kozhikode, from March to June 2024. The study commenced after getting institutional ethics committee approval. Phase III Part I MBBS students posted to Psychiatry during the months of April and May 2024 were included in the study. Each batch of around 44–52 students was posted for about 14 days. Those who were unable to attend on the study days and those who refused consent were excluded.

Sample size was calculated using the formula: $N = 2 * SD^2 (Z_{\alpha/2} + Z_{\beta})^2 / D^2$; where Standard Deviation (pooled SD) = (1.28+2.62) ÷ 2 =1.95and D = expected mean difference = 1 form earlier studies.[7,8] Calculated sample size was 59 per group, so at least 118 students were required. The study included127 MBBS students from Phase III.

Students who were posted for 2 weeks in the psychiatry department during Phase III were divided into two groups by using random numbers, and written consent was obtained. A brief lecture on the symptoms, diagnosis, and management of Depression at the level of a general practitioner was delivered to the entire cohort by a faculty member on all study days before randomization into two groups. An introduction to the study was given, and the procedure was detailed to them.

Group 1-video-based learning: Group 1 was shown a pre-recorded video covering details about depression and family education. This video was prepared by the investigator and validated through peer review from colleagues. The video has a doctor psycho educating the bystander of a patient diagnosed of depression. A psychiatry resident played the role of the doctor, and an intern played the role of a family member of the patient. In the video, the doctor establishes rapport and discusses the symptoms and management of the patient. The doctor also clarifies all the doubts at the end and concludes the session. The video briefly covered all aspects of a family education session at the level of an undergraduate medical student. This helped to acquire knowledge about communication skills, establish rapport, and develop therapeutic alliances.

Group 2 - Peer-assisted role-play. Role-play is a Teaching/Learning Method in which participants are presented with a situation and encouraged to act out the roles of the characters involved, thereby exploring the emotional and experiential aspects of the situation.[11] Group 2 was made to do peer-assisted role-play sessions based on a role-play guide on family education and counseling in depression. This guide was prepared by the first author, reviewed by faculty in the department, and found to be adequate in content. The guide outlined the points to include in the role-play. The role-play guide also includes essential information on depression, including its symptoms, causes, treatment options, and prognosis. The role-play guide contained instructions on building rapport and concluding the session. One student acted as a doctor and another as a family member while the rest of the group watched. The role-play was done under the supervision of a faculty member. Both groups had role-play and video sessions on the same day simultaneously; each group got approximately 20 to 25 minutes for the session.

The study tools were all peer-reviewed. They included a video, role-play handouts, an OSCE checklist, and a Likert-type scale (scoring from 1 to 5) for assessing their liking of the method and their confidence in conducting family education.

Assessment of outcomes was conducted using the Objective Structured Clinical Examination (OSCE).[12] This is a well-established and accepted method for assessing clinical or procedural skills of a student.[13] The checklist for use in the OSCE was prepared by the principal investigator. It was circulated among the other investigators and selected faculty members in the department; all the suggestions and comments received were again reviewed by the team of investigators to prepare the final checklist. A total of 15 domains were included, which included mutual self-introduction, asking about family background, asking about symptoms, especially mood symptoms, biological symptoms, cognitive symptoms, asking about energy and activity levels, asking about past episodes, explaining the biopsychosocial basis of etiology, discussing drugs and side effects, and emphasizing follow-up. The above-mentioned domains were rated 0 or 1. Key points such as establishing good rapport, stating the name of the disease, informing about the prognosis and treatment options, and giving reassurance were rated on a 0, 1, 2 scale. Total marks in the OSCE were 20, and 10 or above was required for a pass.

OSCEs were administered the same day as the video and role-play session to evaluate their ability to perform tasks. An intern was given a class on major depressive disorder, and

training was given regarding acting like a family member. Each student got a maximum of 15 minutes to complete the OSCE session. The instructions about the OSCE were given to students before the assessment. A faculty member sat as an observer and scored this using a checklist. The assessors were blinded to the students' exposure. A total of 6 exposures were done. Each batch had around 40 students, and all were assessed on a single day. Proficiency in Malayalam was assessed by self-report from the students. Soon after the sessions, feedback was collected from the students. A Likert scale with three questions and five anchor points for each was used for the feedback. The video was shown to Group 2 after this.

Comparison of OSCE marks between the two groups of students exposed to the two T/L methods was performed using an unpaired t-test. Comparison of the proportion of students who got pass marks was done using the chi-square test. The Likert-type scale for perception of students and their confidence regarding both methods were analyzed using Fisher's exact test. Analysis was done using SPSS version 16.

RESULTS

A total of 127 Phase III Part I MBBS students were included in the study; 66 in Group 1 and 61 in Group 2. No student refused consent to participate in the study, though a few were absent on the study days. They were divided into two subgroups using random numbers. All participants (including three non-Malayalam students) reported good proficiency in Malayalam, the language used for the intervention in the study. All participants, except for three students, were Malayalam-speaking natives of Kerala. The other three participants were non-Keralites, but could communicate in Malayalam.

The video-based group had 66 students (52%), while the role-play group had 61 (48%). Both groups were comparable on age and gender. (Table 1)

Table 1: Comparison of Age and Gender Across the Two Groups

	Group		**Test/ Significance**
	Video based	**Role-play**	
Age	21.76±1.3	21.66±0.87	t=0.613 p= 0.507
Gender			
Male	21(31.8%)	21(34.5%)	X^2=0.755; d.f=1 p=0.097
Female	45(68.2%)	40(65.5%)	

The Video group fared marginally better both in terms of marks obtained in OSCE and percentage of pass, but it did not reach the level of statistical significance. Pass percentage was 47(71.2%) and 39(63.9%) in the respective groups. (Table 2)

Table 2: Comparison of OSCE marks and pass percentage among the 2 groups

	Group		Test/ Significance
	Video based	Role-play	
OSCE mark	12.6±3.7	11.4±3.5	t = 0.062 p=1.881
Pass	47(71.2%)	39(63.9%)	X^2=0.381; d.f=1 p=0.768
Fail	19(27.8%)	22(36.1%)	

Both groups were comparable in terms of level of acceptance of the TLM and their confidence in doing the task. (Table 3)

Table 3: Liking and Confidence of TLM across the Two Groups

	Group		Test/ Significance
	Video based	**Role-play**	
Liked the T / L method			
1	0	0	Fisher Exact=0.142 d.f.=3 p =NS
2	1(1.5%)	0(0%)	
3	8(12.1%)	16(26.2%)	
4	44(66.7%)	36(59.0%)	
5	13(19.7%)	9(14.8%)	
Confidence in using the T / L method			
1	0	0	Fisher Exact=0.486 d.f.=3 p =NS
2	3(4.5%)	7(11.5%)	
3	22(33.3%)	17(27.9%)	
4	33(50.0%)	31(50.8%)	
5	8(12.1%)	6(9.8%)	

DISCUSSION

The findings of this study indicate that both video-based learning and role-play are effective methods for teaching family education in depression to Phase III medical students. This aligns with several previous studies demonstrating the efficacy of these methods for teaching counseling and communication skills across various health-related conditions. However, our study uniquely attempted to directly compare the two methods to determine whether one yields a superior outcome, especially given the constraints of limited clinical posting durations in Psychiatry. Kolb and Fry's experiential learning theory, which emphasizes the importance of integrating affective, symbolic, perceptual, and behavioral learning environments, provides a robust theoretical foundation for our study.[14] Role-play engages students affectively and behaviourally by simulating real-life scenarios where they must respond and adapt dynamically. Video-based learning, on the other hand, supports symbolic and perceptual learning by allowing students to observe and analyze scenarios in a controlled setting.

Recent studies corroborate the findings that these methods enhance learning outcomes in medical education. For instance, a systematic review by Bosch et al. highlights that simulation-based education, including role-playing, significantly improves communication skills and clinical competencies among medical students.[15] Similarly, a meta-analysis by Kyaw et al confirms that digital education tools, including video-based learning, are effective in improving knowledge and skills in health professions education.[16] Our study showed marginally better performance in the video-based learning group, but this did not reach statistical significance. This suggests that both methods are comparably effective in enhancing student performance in Objective Structured Clinical Examinations (OSCEs). This is consistent with findings from Wind et al, who reported no significant difference in communication skill acquisition between video-based and role-play methods among medical students.[17] However, a notable difference was observed in students' preferences and confidence levels. The video-based learning group expressed a higher liking for the method and greater confidence in using it. This preference could be attributed to the passive nature of video learning, which allows for repeated viewing and analysis of complex scenarios without the immediate pressure of performing in front of peers and instructors. Studies like those by Green et al suggest that video-based learning can reduce anxiety and increase self-efficacy in students by providing a safe and controllable learning environment.[18]

Conversely, role-play offers unique advantages in fostering empathy and real-time problem-solving skills, which are crucial

in clinical practice. A study by Nestel and Tierney found that role-play enhances emotional engagement and the ability to apply theoretical knowledge in practical situations, which may contribute to long-term retention and application of skills.[19] Given the limited duration of Psychiatry postings for medical students, it is essential to maximize the effectiveness of teaching methods within this constrained timeframe. Our findings suggest that educators can flexibly choose between video-based learning and role-play based on available time and resources without compromising the quality of education. This flexibility is particularly valuable in resource-limited settings where one method may be more feasible than the other.

For optimal outcomes, combining both methods where feasible might provide a more comprehensive learning experience by leveraging the strengths of each approach. Following the blended learning approach, as suggested by Cook et al, integrating multiple teaching methods can enhance learning outcomes by catering to diverse learning preferences and reinforcing knowledge through different modalities.[20]

One limitation of our study is the relatively small sample size, which may limit the generalizability of the findings. Future research should consider larger, multi-center studies to validate these results. Additionally, exploring the long-term retention and application of skills learned through these methods would provide deeper insights into their effectiveness. Inter-rater reliability and confidence intervals were not presented in the study. Furthermore, we could conduct pre- and post-tests in subsequent studies. Further research could also investigate the impact of integrating patient interactions with these teaching methods. Studies like those by Bearman et al suggest that combining simulation-based methods with real patient interactions can significantly enhance clinical skills and professional development in medical students.[21]

CONCLUSION

In conclusion, both video-based learning and role-play are effective for teaching family education in depression to Phase III medical students, with no significant difference in learning outcomes. Given the comparable effectiveness, educators can select either method based on practical considerations. However, integrating both methods, when possible, along with actual patient interactions, could provide the most comprehensive educational experience. Future research should continue to explore the long-term impacts of these methods and optimal integration strategies in medical education. Based on the results, it can be recommended that MBBS students can be trained in counselling and family education for relatives of patients with Depression using either video-based learning or peer-assisted role-play based on availability of personnel.

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