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Original Research Article

Learner's perspectives and outcomes of peer role play as a teaching learning method for prescription communication skills in second year medical students at a tertiary teaching hospital in India

Meharban Asanaliyar, Latha Kamath, Ananya Chakraborty*

Department of Pharmacology, Vydehi Institute of Medical Sciences & Research Centre, Bangalore, Karnataka, India

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*Correspondence:

Dr. Ananya Chakraborty,

Email: drananya.chakraborty@gmail.com

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ABSTRACT

Background: Medical education in India is experiencing a positive shift from traditional curriculum to competency-based medical education. Among the different initiatives, inclusion of role-play with specific aim of improving prescription communication skills in the current curriculum, could lead to beneficial patient- response outcomes. This study aims to evaluate the undergraduate medical student's perspectives on implementing role-play for learning about prescription communication.

Methods: This was a cross-sectional observational study conducted in the department of pharmacology involving second-year medical students of Vydehi institute of medical science and research centre participating for a month-long duration. An internally validated questionnaire was used to assess students' perspectives on role-play in prescription communication. The outcome was evaluated based on students' performance in prescription writing and appropriate communication before and after the role-play session. The data obtained was analysed using the SPSS software.

Results: The mean score for the overall benefit of role play for prescription communication for all responding participants (n=163) was 4.2 out of 5. In this study, 89.4% of students agreed that role-play in prescription communication should be an essential aspect of their training in the curriculum and is worth taking this additional effort. 84.6% of students found that, the sessions helped to understand and share the pharmacology concepts better. Mean pre and post role play prescription writing assessment scores in students was 7.59 and 9.01 out of 10 respectively.

Conclusions: Role-play was well received by the students as a low-cost innovative teaching methodology for better understanding of Pharmacology concepts as mandated by the CBME curriculum. It helps in understanding the importance of teamwork and error-free prescription communication for future clinical practice. Overall, following appropriate demonstration, use of role-play showed significant improvement in student performance in prescription communication.

Keywords: Prescription communication, CBME, Perception, Role play

INTRODUCTION

Medical education in India and across the globe continues to prepare medical students to respond to the growing healthcare needs of the society.¹ In the past, medical education system had emphasised on a subject-centred, time-based curriculum and assessments were conducted as a summative approach without regular skill assessments

and feedback. As a result, the medical graduates had excellent knowledge but lacked practical skills required to interact with patients. Previous studies have stressed on the need for incorporation of strong communication skills that include gathering information forming relationships, expressing empathy, explaining and planning the therapy along with patients and care givers.² Towards this aim the competency based medical education (CBME) curriculum

was introduced in India in the year 2019. It suggested innovative teaching learning (TL) methods, formative assessments and a two-way feedback approach to be introduced in medical education for successful learning and practice.² For learning effective communication skill, role play was highlighted as a powerful teaching learning method in CBME. Role-play is a low-cost method for students to appreciate the complexities of patient-physician interactions for prescription writing.³ It promotes active learning and helps the students to effectively communicate to the patients.³⁻⁵ It also allows medical teachers to look at the learner's reactions in the context of real-life occurrences while also encouraging peer feedback. A study on implementing the CBME curriculum for the first MBBS disciplines claimed that role play was as an effective TL method. It increases students' enthusiasm for learning if it were carefully applied.⁶ Role-play, case-based learning, and reflective writing have proven beneficial and meaningful in earlier published studies.^{3,7} A research study with second-year medical students indicated that role play mode of learning proved to be essential for learning effective communication skills prior to initiation of therapy.⁸⁻¹⁰ Role play was also highlighted as a powerful method for learning effective communication skills and concluded as an effective teaching methodology in a study with third- and fourth-year medical students enrolled for community medicine.¹⁰ The above research studies on role-play were conducted before the CBME curriculum was implemented. With this background, our study was designed to learn about second year undergraduate medical students' perspectives on peer role-play as a teaching approach for prescription communication in a tertiary care teaching hospital.

METHODS

A prospective, cross-sectional, observational, questionnaire-based study was carried out in the department of pharmacology at Vydehi institute of medical sciences & research centre, Bangalore for a period of one month from 1 to 31 December 2021, during the practical class hours. In the first week, skill assessment on prescription writing was conducted following which students were oriented to prescription communication and oriented towards role play. They were divided into 15 groups each containing 15 students. A group leader was chosen by the students in each group, who was involved in the overall coordination of the group's role play. There were a total of 15 training cases (Table 1), from which 1 case was randomly allotted to each group for prescription communication role play. Students were given the liberty to select the performers for the play which required main roles of a physician, patient, and patient attender to be played. The remaining students were to play additional enactors or be observers. They were provided with a structured check list for the role play. On second, third and fourth weeks, on each day 5 groups were given slots for role play. Each slot lasted for 20 minutes (10 minutes was for presentation and 10 minutes for discussion). On each day after the role play the faculties moderated the

discussion and provide concluding constructive feedback. Post the session students were again given to write a prescription. To analyse the effectiveness of role play as a new way of teaching, we assessed the students' prescription writing performance scores before and after the role play session.

Table 1: List of training cases allotted to students for roleplay of prescription communication.

Training case
A 50-year-old male, suffering from Uncontrolled Type 2 DM. You have to start him on insulin.
A 55-year-old male with BP 160/100. Start him on Tab. Amlodipine.
A 55-year-old male with BP 160/100. Start him on Tab. Amlodipine and atenolol combination.
A 40-year-old female, start her on warfarin as a prophylaxis of Deep vein thrombosis.
A 24-year-old female, epileptic, start her on sodium valproate
A 45-year-old female, suffering from acute gastritis, Start her on Tab. Pantoprazole
A 50-year-old Male, with deranged lipid profile, start him on a statin.
A 26-year-old pregnant female, visited in her 2nd trimester with haemoglobin levels of 9gm%. Start her on Ferrous sulphate.
A 40-year-old female, with complaints of acute attack gout, Start her on Tab. Ibuprofen for pain
A 16-year-old female is a newly diagnosed case of bronchial asthma, prescribe her on Salbutamol inhaler.
A 10-year-old male is a case of bronchial asthma, prescribe her Salbutamol inhaler.
A 26-year-old married female, visits you for hormonal contraceptive advice. Start her on oral contraceptive pills.
A 12-year-old child diagnosed as epilepsy for the first time, start him on a suitable anti-epileptic drug.
A 25-year-old female with urinary tract infection. Start her on Nitrofurantoin.
A 60-year-old female, with high triglyceride level, start her on a fibrate.

Outcome assessment tools

Questionnaire: At the end of four sessions, students who attended training sessions and played at least one active role were handed over a pre-validated questionnaire which included the students' perspectives on; role-play as a T-L tool, benefits of prescription communication training sessions that had to be answered on a 5-point Likert scale with the categories "strongly agree" (score 5) to "strongly disagree" (score 1). In addition, students were asked as to how they perceived the importance of prescription communication skills before and after role-play sessions. There were questions related to-role-play as a T-L tool, benefits of prescription communication training sessions, challenges and student perspective. A pilot of

questionnaires that were used in the study was completed before the study commenced. We piloted the questionnaires to ensure that they were acceptable and comprehensible to participants, and that our methods of administration were feasible and reliable. Prescription writing skill assessment scores: To find out the effectiveness of Role play as a TL method in prescription communication. Students were given prescription writing exercise pre and post prescription communication classes and their scores before and after the session was tabulated and analysed.

Statistical analysis

Data on student's response were subjected to statistical analysis. Descriptive statistics like mean and median was used for continuous variables; frequency and percentage for categorical variables. Microsoft excel and SPSS software were used for data analysis.

RESULTS

In our study the total number of students who responded to the questionnaire were 163 out of 224 students.

Demographic details

Of the total respondents, we had 91 (55.8%) females and 72 (44.2%) males. The mean age of the participants was 20.44 ± 0.88 years. The participants were second year MBBS students.

Role play as a teaching tool- general perceptions

More than 85% (144/161) (Table 2) of students who participated in the study agreed that role-play in prescription communication would be an essential training required in the curriculum and is worth taking this additional effort. Additionally, more than 80% (1300/163) of students agreed that more sessions were needed to strengthen their prescription communication skill (Figure 1, Table 2). Significantly, 84.66% of students (138/163) (Table 2) graded in favour of strongly agree to agree on category (blue and green bar taken together) (Figure 1), indicating that they felt good about the inclusion of role-playing in the pharmacology curriculum. Only 25 out of 163 (<20%) students felt that incorporating role play as a teaching tool is a waste of time for the Pharmacology teaching methodology (Figure 1, Table 2).

Students' perceptions of the benefits of prescription communication role play sessions

The results of students' perceptions of the benefits of prescription communication role-play sessions survey is presented in (Figure 2, Table 3). More than 80% (134/163) felt confident in communicating with the patients, and about 77.3% (126/163) conveyed that they can effectively communicate medicine name, dose, duration, frequency,

mechanism, purpose, and adverse drug reactions (ADR) during patient follow-up consultations.

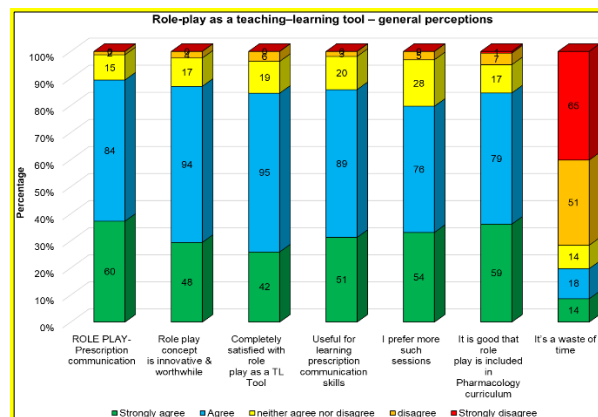


Figure 1: Roleplay as a teaching tool-general perception (numbers in bar graph indicates number of responses in each category).

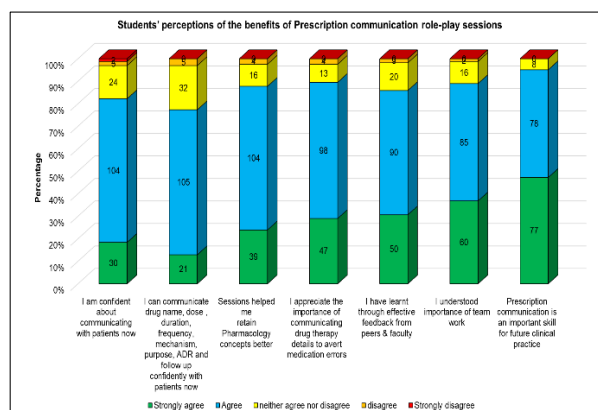


Figure 2: Student's perceptions in the benefits of prescription communication role-play sessions (numbers in bar graph indicates number of responses in each category).

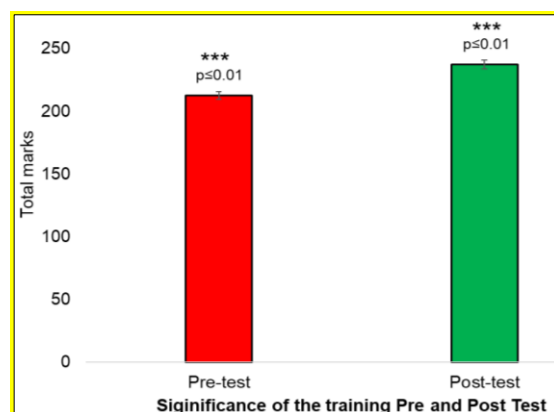


Figure 3: The final test scores for prescription communication among (n=163) students before and after training (p<0.01).**

Table 2: Role-play as a teaching tool-general perception.

Role-play as a teaching tool-general perception	Role-play-Prescription communication	Role-play concept is innovative & worthwhile	Completely satisfied with role play as a TL Tool	Useful for learning prescription communication skills	I prefer more such sessions	It is good that role play is included in Pharmacology curriculum	It's a waste of time
Strongly agree (%)	60 (37.27)	48 (29.45)	42 (25.93)	51 (31.29)	54 (33.13)	59 (36.20)	14 (8.64)
Agree (%)	84 (52.17)	94 (57.67)	95 (58.64)	89 (54.60)	76 (46.63)	79 (48.47)	18 (11.11)
neither agree nor disagree (%)	15 (9.32)	17 (10.43)	19 (11.73)	20 (12.27)	28 (17.18)	17 (10.43)	14 (8.64)
Disagree (%)	2 (1.24)	4 (2.45)	6 (3.70)	3 (1.84)	5 (3.07)	7 (4.29)	51 (31.48)
Strongly disagree (%)	0.0	0.00	0.00	0.00	0.00	1 (0.61)	65 (40.12)
Major Outcome (%)	144/161 (89.44)	142/163 (87.12)	137/162 (84.57)	140/163 (85.89)	130/163 (79.75)	138/163 (84.66)	32/162 (19.75)

Table 3: Students' perceptions of the benefits of prescription communication role-play sessions.

Students' perceptions of the benefits of Prescription communication role-play sessions	I am confident about communicating with patients now	I can communicate drug name, dose, duration, frequency, mechanism, purpose, ADR and follow up confidently with patients now	Sessions helped me retain Pharmacology concepts better	I appreciate the importance of communicating drug therapy details to avert medication errors	I have learnt through effective feedback from peers & faculty	I understood importance of team work	Prescription communication is an important skill for future clinical practice
Strongly agree (%)	30 (18.4)	21 (12.88)	39 (23.93)	47 (29.01)	50 (30.67)	60 (36.81)	77 (47.24)
Agree (%)	104 (63.8)	105 (64.42)	104 (63.80)	98 (60.49)	90 (55.21)	85 (52.15)	78 (47.85)
neither agree nor disagree (%)	24 (14.72)	32 (19.63)	16 (9.82)	13 (8.02)	20 (12.27)	16 (9.82)	8 (4.91)
Disagree (%)	3 (1.84)	5 (3.07)	4 (2.45)	4 (2.47)	3 (1.84)	2 (1.23)	0
Strongly disagree (%)	2 (1.23)	0	0	0	0	0	0
Major outcome (%)	134/163 (82.21)	126/163 (77.3)	143/163 (87.73)	145/162 (89.51)	140/163 (85.89)	145/163 (88.96)	155/163 (95.09)

Significantly, 87.73% (143/163) of students found the sessions aided better understanding of pharmacology concepts, and 89.51% (145/163) affirmed that it helped avert medication errors by communicating the importance of drug therapy in detail. Further, 88.96 % (145/163) of participants felt that the sessions also contributed towards better feedback from peers and faculty and acknowledged the importance of teamwork. About 95.09 % (155/163) of the participants opined that prescription communication is an effective primer for the future of clinical practice (Figure 2).

Prescription writing skill assessment scores

The significance of the scores in tests before and after the role-play training session for the pharmacology teaching curriculum was determined using an unpaired t test. The study found that the p-value was 0.01%, indicating that the training sessions significantly improved prescription communication (Figure 3).

DISCUSSION

To meet the increasing requirement of improving societal health and demands, a paradigm shift in medical education requires to integrate the curriculum with more emphasis on TL activities like "ability to do and perform" rather than "ability to only know". Medical educators can navigate to introduce these changes, quickly adapt and then implement the changes in the medical student community.¹¹ To improve the outcome of pharmacotherapy with adequate compliance and also assist students hone their communication skills, the physician-patient interactions should focus on discussions about the prescription medicines. The role play concept with hypothetical scenarios was employed during the pharmacology teaching sessions as a means of achieving the learning objectives to develop student - patient communication relationships for effective prescription writing. Studies by Lavanya et al and Manzoor et al, have shown that role play models are superior instead of being passive spectators because it helps students to be constructive and allows them to actively participate in improving professional and interpersonal behaviours.^{3,10} In the current study, nearly 90.1 per cent of students evaluated role-play as beneficial in strengthening Pharmacology knowledge and writing effective prescriptions without errors after completing a role-play session for prescription writing, compared to 75.9% on the pre-session questionnaire. Students highlighted both positive and negative aspects of previous and current experiences, with most reporting the former.

The positive aspects of the role-play technique, such as bringing people with diverse views together, learning through experience and shared understanding, lateral thinking and creating innovative solutions to challenges, can be attributed to these outcomes.

Students also reasoned that role-play prescription communication should form an integral part of the

pharmacology curriculum and found its usefulness extended to also understand the concepts better. After the training session, the majority of the students emphasized (>80%) that more sessions were needed to strengthen their prescription communication and felt good about its inclusion in the Pharmacology curriculum. Similar studies by Lavanya et al and Manzoor et al involving role-play as teaching tool confirmed the positive opinion of role play concept in improving the communication in teaching medical subjects.^{3,10} The current study outcome suggests that most of the students were confident in communicating with the patients concerning medicine name, dose, duration, frequency, mechanism, purpose, adverse drug reactions (ADR) and patient follow-up related issues. The role-play session helped to write the prescription better without errors. It promoted skill development and patient empathy, and overall, the students developed a positive attitude towards the role-play concept. Adoption of peer role-play techniques by Pharmacology teachers as a teaching tool could serve as a communication primer for the future of clinical practice leading to higher patient compliance during therapy.

CONCLUSION

Role-play was well received by the students as a low-cost innovative teaching methodology for better understanding of Pharmacology concepts as mandated by the CBME curriculum. It helps in understanding the importance of teamwork and error-free prescription communication for future clinical practice. Overall, following appropriate demonstration, use of role-play showed significant improvement in student performance in prescription communication.

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