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(IJMOE)**www.ijmoe.com**ROLE-PLAY IN PHARMACY EDUCATION: ASSESSING
STUDENT PERSPECTIVES ON ENHANCING PATIENT-
PHARMACY PERSONNEL COMMUNICATION SKILLS**

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Abstract:

Effective communication is essential for healthcare providers, including pharmacy personnel, to ensure optimal patient care. This study explores the role of role-play as an instructional and evaluative tool in pharmacy education, focusing on its impact on communication skills. A cross-sectional survey involved 74 Semester 3 pharmacy students participating in role-play scenarios

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as patients and pharmacy personnel. Findings reveal a positive perception of role-play, with students recognizing its benefits in enhancing communication skills (mean: 4.01), confidence levels (mean: 3.93), and conflict resolution abilities (mean: 3.86). Students express a strong preference for the interactive (mean: 4.19) and collaborative nature of role-playing exercises (mean: 4.22). They emphasize the significance of communication skills in pharmacy practice and credit role-play for improving their understanding of effective communication (mean: 4.03). Identified challenges include concerns about time management (23.0%) and perceived inadequacies in acting skills (59.5%). Proposed solutions encompass providing clearer assignment details and flexible scenarios. Notably, 82.4% of participants advocate for the continued inclusion of role-play in the curriculum. In conclusion, this study underscores role-play as a valuable teaching and assessment tool in pharmacy education, fostering active learning and communication skill development. Addressing challenges and incorporating student suggestions into communication training can effectively prepare future pharmacy professionals for real-world patient interactions.

Keywords:

Communication, Education, Pharmacy, Role-Play, Skill

Introduction

Effective communication skills are indispensable for healthcare providers, including pharmacy personnel, as they are crucial in delivering high-quality healthcare services and ensuring safe medication use (Schackmann, 2023). The ability to communicate effectively is vital for establishing trust, providing accurate medication information, and fostering patient adherence to treatment plans (Kengar et al., 2022; McDonough & Bennett, 2006). Furthermore, the interaction between pharmacists and patients plays a pivotal role in delivering pharmaceutical care and enhancing medication adherence (Othman et al., 2023a).

Role-play has emerged as a prevalent teaching and assessment tool in pharmacy education to enhance students' communication skills. Peer role-playing is a cost-effective approach that allows students to comprehend the intricacies of interactions between patients and healthcare personnel in a "safe and professional" environment (Stevanny & Syakurah, 2022; Bosse et al., 2010; Mogra, 2012). It provides a simulated environment where students can practice and refine their communication techniques with patients, healthcare professionals, and colleagues (Lavanya et al., 2016). In role-play exercises, students assume specific roles and engage in realistic scenarios mirroring real-life interactions in a pharmacy setting (Kerr et al., 2021).

Despite the crucial role that effective communication plays in interactions between pharmacy personnel and patients, there is a notable scarcity of research on the efficacy of role-play as an educational assessment tool in patient-pharmacy personnel communication. Particularly lacking is an exploration of pharmacy students' perspectives regarding the effectiveness of role-play in this context. Thus, while the importance of communication skills development in pharmacy education is widely recognized, there remains a significant gap in understanding the specific impact of role-play exercises from the viewpoint of pharmacy students. The study focuses on pharmacy students' perspectives on the effectiveness of role-play as an educational assessment tool. It aims to address this gap by investigating pharmacy students' perceptions of role-play and identifying both its benefits and challenges.

The primary objectives of this study are to: (1) investigate pharmacy students' perspectives on the use of role-play as an educational assessment tool in patient-pharmacy personnel communication and (2) identify the benefits and challenges faced by students during their participation in role-play exercises. By exploring into students' experiences, this research seeks to gain insights into the effectiveness and impact (Idham et al., 2022) of role-play as an assessment tool on communication skills development (Hurst et al., 2013). The results of this study will provide valuable insights into the benefits (Kerr et al., 2021; Alshammari, 2020) and challenges (Nestel & Tierney, 2007) of using role-play as an assessment tool. Findings from this study will provide valuable insights into the position of role-play in enhancing communication skills development among pharmacy students and inform the design and implementation of future role-play exercises, ultimately enhancing communication skills development in pharmacy education.

Literature Review

This literature review aims to explore the existing body of research related to role-play in pharmacy education, specifically focusing on its impact on students' perspectives and the benefits and challenges associated with its implementation.

Communication Skills and Their Significance

Communication skills encompass the ability to convey information and ideas effectively and efficiently. They go beyond just speaking and writing, also involving active listening, comprehension, and interpretation of messages. Proficient communication skills are crucial for success in personal relationships, professional interactions, and academic environments. Simulation techniques can facilitate the teaching of good communication skills to students by bridging theory with practical application (Mogra, 2012). Effective communication entails using appropriate language, tone, and nonverbal cues to convey the intended message. Active listening plays a pivotal role in effective communication, as it fosters trust, mutual respect (Doas, 2015) and a better understanding of the communicated message and helps identify areas of confusion or misinterpretation. Additionally, written communication skills are essential, particularly in professional settings, where clear and concise language, proper grammar, and logical organization of ideas are valued.

In the workplace, effective communication skills enable individuals to collaborate seamlessly with others, build strong relationships, and resolve conflicts efficiently. Within healthcare settings, effective communication is of utmost importance for patient care, as it allows healthcare professionals to comprehend patients' needs and deliver appropriate treatment. As future healthcare providers, pharmacy students (Gilmartin-Thomas et al., 2020) must be equipped with essential communication skills (Chevalier et al., 2018) to ensure safe and effective medication use (Mak et al., 2020). Moreover, studies have shown a direct connection between effective communication skills and increased patient drug adherence and improved outcomes (Street et al., 2009). However, training in communication skills is an aspect that is often overlooked (Choudhary and Gupta, 2015).

Role-play as an Active Teaching and Learning Method

Among the teaching strategies that foster active learning, role-play has proven to be an effective method (Al-Aqeel, 2013). Role-playing involves participants assuming different roles and actively engaging in simulated scenarios, leading to better retention and application of the conveyed information. In this context, "role" refers to adopting a specific character in a given situation, while "play" emphasizes creating a secure and imaginative environment for learners

(Rayhan, 2014). Defined as an "experiential learning technique with learners acting out roles in case scenarios to provide targeted practice and feedback to train skills" (Joyner & Young, 2006), role-play allows students to immerse themselves in imaginative situations, fostering a strong connection to the context being simulated. This method empowers learners to develop and practice a wide array of essential skills, such as communication, problem-solving, decision-making, teamwork, negotiation, leadership, and empathy (Rao & Stupans, 2012). The interactive nature of role-play creates a safe space for learners to hone these skills through practical application.

Furthermore, role-playing enables learners to apply their knowledge and skills in a lifelike context (Kilgour et al., 2015a). By simulating real-life situations (Oberle, 2004), students can practice and refine their abilities to handle diverse scenarios they might encounter in their personal or professional lives, thereby enhancing their confidence in effectively managing such situations. The process of role-playing requires participants to think critically and solve problems within the context of the given scenario (Nikendei et al., 2005). This encourages learners to analyse situations, make decisions, and consider the consequences of their actions, nurturing critical thinking skills and fostering creative problem-solving approaches.

Indeed, role-play is a widely used technique for developing speaking skills in the classroom (Brown, 2001). Two key aspects of role-play are the active involvement of one or multiple individuals in each group and the goal-oriented nature of the activity. By engaging in role-play activities, students could practice speaking and interact with others in a simulated setting. They are given time to prepare and plan their responses, often utilizing scripts of varying complexities. The teacher's role is to guide the role-play activity and assess the students' responsiveness and ability to handle the given roles effectively. Role-play has been found to significantly improve students' communicative competence (Aini et al., 2020), as they assume clearly defined characters to make the role-play authentic and engaging. This encourages students to speak spontaneously, share opinions, and answer questions related to their roles.

Additionally, role-play involves students assuming specific roles, interacting in groups, creating a story, and presenting their role-play in front of an audience (Kilgour et al., 2015b). This activity shares similarities with drama, as students create dialogues with thematic content, characterizations, and interactions. Role-playing not only enhances learning but also stimulates students to understand complex issues from various perspectives (Westrup & Planander, 2013). In a nutshell, role-play is a valuable and engaging technique for teaching and practicing communication skills (Nuranda, 2018). It empowers students to assume different roles, engage in communicative activities, and interact with others, thereby bolstering their proficiency and confidence in using language effectively.

Role-play as an Effective Educational Assessment Tool

Role-play serves as a teaching strategy where students assume specific roles and engage in simulated scenarios to enhance their communication skills and gain a deeper understanding of real-life situations (Rao & Stupans, 2012). In pharmacy education, role-play has garnered recognition as a highly effective method for developing and assessing communication skills across various contexts, including patient counselling, interprofessional collaboration, and conflict resolution. Role-play, as both a teaching and assessment tool, provides a platform to simulate authentic communication scenarios (Hasan, 2008) within the pharmacy setting (Korayem et al., 2022; Kerr et al., 2021; Mardiah & Musharyanti, 2021). Several studies have investigated the impact of role-play as an educational assessment tool in pharmacy education.

For instance, Garg et al. (2017) conducted a study to assess the influence of role-play on students' communication skills and observed significant improvements in their ability to communicate effectively with patients. Similarly, Lavanya et al. (2016) explored the use of role-play to enhance students' confidence in counselling patients, reporting positive outcomes in terms of increased self-confidence and competence.

Role-play also offers educators valuable opportunities to observe how students react and respond in real-life scenarios. It allows learners to engage in spontaneous interactions, enabling educators to gain insights into their practical understanding of patient behaviours (Fossen & Stoeckel, 2016). Additionally, Veettil & Rajiah (2016) highlighted the substantial potential of role-play in enhancing students' clinical education and fostering the essential qualities needed to become proficient pharmacists. By incorporating simulation and role-play, students can apply theoretical knowledge into practice, bridging the gap between classroom learning and real-world situations. Role-play serves as a valuable educational tool in pharmacy education, enabling students to develop and showcase their communication skills in realistic scenarios. It offers a dynamic and interactive approach to learning, equipping students with essential competencies for their future roles as healthcare providers (Hurst et al., 2013).

Benefits of Role-play in Pharmacy Education

Role-play holds numerous advantages in the context of pharmacy education. Firstly, it provides students with a secure and controlled environment to practice their communication skills, allowing them to build confidence and competence before engaging with actual patients. This experiential learning approach, involving realistic scenarios, effectively bridges the gap between theoretical knowledge and its practical application, enabling students to apply their learning in authentic situations. The utilization of role-play brings life to descriptive teaching material, aids in the comprehension and exploration of complex health issues and enhances students' retention of information compared to traditional lectures (Joyner & Young, 2006; Calton et al., 2008).

Moreover, role-play fosters active learning by involving students in hands-on activities, stimulating critical thinking, and honing problem-solving skills. The collaborative nature of role-play encourages teamwork, with students frequently working in pairs or groups to enact various scenarios. By actively participating in role-play exercises, students have the opportunity to practice and receive feedback on their communication skills (Rao, 2011), facilitating their growth through observation and peer-to-peer evaluation (Luttenberger et al., 2014). This collaborative learning environment encourages reflection and deepens students' understanding of communication concepts, leading to enhanced learning outcomes. In addition to improving communication skills, role-play nurtures competencies essential for interprofessional collaboration, which is vital for providing comprehensive patient care. As an effective educational assessment tool, role-play enables the development and evaluation of students' communication skills within a realistic and supportive setting. Through role-play, students are empowered to hone their communication abilities, allowing them to effectively interact with patients, fellow healthcare professionals, and colleagues in the future (Mogra, 2012).

Challenges in Implementing Role-play

Despite the numerous benefits and educational value that role-play offers, its successful integration into pharmacy education may encounter several challenges. One primary challenge lies in the limited availability of resources and time constraints (Lavanya et al., 2016; Yazali

et al., 2022). Role-play demands dedicated preparation, organization, and debriefing sessions, which may present logistical difficulties within the existing curriculum structure. Additionally, faculty members need to possess the necessary skills and undergo proper training to effectively facilitate role-play activities and provide valuable feedback to students.

Another significant challenge relates to the subjective nature of role-play assessment. Evaluating students' performance in role-play scenarios can be susceptible to individual biases and varying interpretations of communication skills. To address this concern, it is crucial to develop clear assessment criteria and standardized rubrics to ensure fairness and consistency in the evaluation process (Yazali et al., 2022). Despite these challenges, the multitude of benefits that role-play offers, such as fostering essential skills, promoting active learning, critical thinking, and collaboration, and effectively bridging theory and practice, make it an invaluable tool in pharmacy education (Shankar, 2008). With continued research and professional development opportunities, the effective integration of role-play can be further enhanced to cultivate exceptional communication skills among future pharmacy personnel.

In summary, the literature review highlights the significance of communication skills in pharmacy education and the pivotal role of role-play as an effective teaching and assessment tool in fostering these skills. Effective communication is crucial for healthcare providers to deliver high-quality care and ensure patient safety, with role-play offering a practical approach to bridge theoretical knowledge with real-world application. Role-play enables students to immerse themselves in simulated scenarios, enhancing their communication skills, confidence, and problem-solving abilities. Despite its benefits, challenges such as resource constraints and subjective assessment methods exist. However, the benefits of role-play outweigh these challenges, making it an invaluable tool for cultivating essential competencies among pharmacy students.

Methodology

Study Design and Settings

This study employed a cross-sectional survey (Othman et al., 2022a) design to investigate the students' perspectives on the use of role-play as an educational assessment tool in patient-pharmacy personnel communication. The study participants consisted of semester 3 Diploma in Pharmacy students who were enrolled in the PHD214 Introduction to Public Health in Pharmacy course within the Universiti Teknologi MARA, Cawangan Pulau Pinang, Bertam campus. The study was conducted during the second semester of the academic year 2022-2023, spanning from October 2022 to February 2023.

All semester 3 students who enrolled in the course were invited to participate in this study. Minimum study sample size was determined to be 63 based on a calculation by Raosoft calculator that considered a 5% margin of error and a 95% confidence level (Othman et al., 2023c). This sample size was deemed appropriate to achieve sufficient representation and to provide meaningful insights into the students' perspectives on the use of role-play as an educational assessment tool in patient-pharmacy personnel communication.

As part of their role-play assignment, students were organised into groups of four individuals. Each group was assigned a specific scenario to work on exclusively. The assignment comprised two main components: the patient-pharmacy personnel communication role-play session and the self-reflection on their key learning aspects during the role-play (Table 1). In the first

component, students were encouraged to use their creativity to portray the roles of both pharmacy personnel and patients in pre-designed scenarios of pharmacy encounters. For the second component, students engaged in self-reflection, focusing on key learning points related to effective communication skills in pharmacy practice. The students recorded their role-plays as videos, which were then uploaded to YouTube. The duration of these recorded videos ranged from 15 to 20 minutes. To ensure clarity and consistency in evaluating the assignments, marking rubrics were provided as guidelines for the students to follow while working on their role-play assignment.

Table 1: Scenarios for Role-play

No.	Scenario
1	Counselling for a paediatric patient newly prescribed with inhaler(s) and aero chamber.
2	Dispensing a long list of medications (e.g. 5 – 6 medications) to an elderly patient with hearing impairment in a busy outpatient pharmacy.
3	Counselling for a patient with type 2 diabetes mellitus who worries that his/her anti-hypertensive medications may cause him/her to suffer from kidney failure.
4	An adult patient with long-standing hyperlipidaemia is making a fuss at the busy pharmacy front counter, insisting that the pharmacy staff had supplied him with the wrong medications. His previous statin tablets were white and round, but this time pink and oblong medications were given to him. Note that the pharmacy has recently changed its drug supplier company for generic statin medications.

Data Collection

Feedback questionnaire (in Google Form) was distributed through WhatsApp application (Najib et al., 2023; Othman et al., 2022b; Sulaiman et al., 2023) to solicit students' perspectives on the role-play assignment. The questionnaire was adapted and modified from Al-Aqeel (2013), Lavanya et al. (2016) and Yazali et al. (2022). The first section of the questionnaire collected students' demographic information such as age, gender, and grouping. The second section consists of 12 items anchored with a 5-point Likert scale to measure the students' perspectives on the use of role-play as an educational assessment tool in patient-pharmacy personnel communication. Additionally, 10 items in section three captured students' responses on the benefits and challenges of role-play as educational teaching tool. Likewise, students' views on the importance of communication skills before and after completing the role-play assignment task and suggestions for improvement were also collected. Students were provided with information about the purpose of the study, and their consents were obtained before data collection (Othman et al., 2022b; Othman et al., 2023b).

Data Analysis

All data collected were analysed using IBM SPSS version 22. Descriptive statistics, such as frequencies and percentages, were employed to summarise the demographic data. Regarding students' perspectives on the use of role-play as an educational assessment tool in patient-pharmacy personnel communication, the 5-point Likert scale data, tabulated into frequencies and percentages were analysed. The mean and standard deviation (SD) for each statement were also calculated. The calculated mean score was interpreted based on Table 2, whereby high mean score signifies high level of agreement (Othman et al., 2024). Students' suggestions on improving the assignment task were analysed using content analysis (Vaismoradi et al., 2013) with the aid of Microsoft Excel.

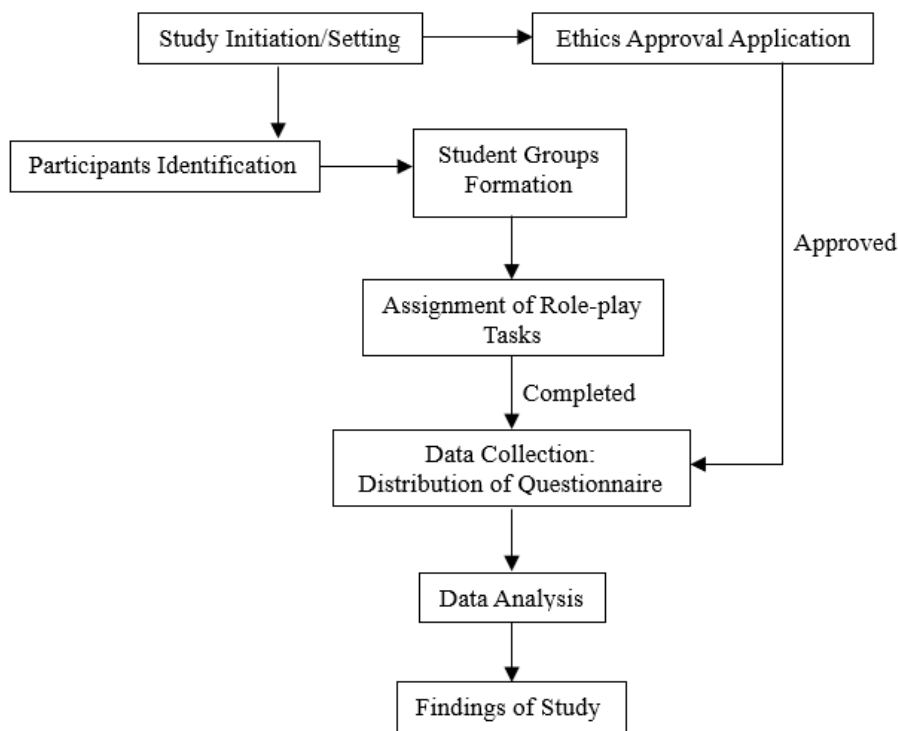
Table 2: Interpretation Of Calculated Mean Score

Mean range	Interpretation
1.00 - 1.80	Strongly disagree
1.81 - 2.60	Disagree
2.61 - 3.40	Neutral
3.41 - 4.20	Agree
4.21 - 5.00	Strongly agree

Likewise, several challenges were linked to the study, including the relatively small sample size limited to only one batch of students, time constraints during role-play sessions, and technical issues related to recording and uploading role-play videos. Figure1 illustrates the flow chart of the whole study processes.

Ethics Approval

This study obtained ethical approval from Universiti Teknologi MARA, Cawangan Pulau Pinang Research Ethics Committee (BERC) – BERC/3/2023 (UG/MR/166).

**Figure 1: Flow Chart of the Study Processes**

Results and Discussion

Demographic of Respondents

Table 3: Respondents' Demographic Characteristics (N =74)

Demographic		Frequency (n)	Percentage (%)
Gender	Male	12	16.2
	Female	62	83.8
Age (years)	19	10	13.5
	20	47	63.5
	21	15	20.3
	22	2	2.7
Group	A1	18	24.3
	B1	20	27.0
	C1	17	23.0
	D1	19	25.7

Table 3 displays demographic characteristics of the 74 respondents who participated in this study. The majority (83.8%) were females, and ages ranged from 19 to 22, with an average of 20 years. Participants were distributed across four groups: A1 (24.3%), B1 (27.0%), C1 (23.0%), and D1 (25.7%).

Participants' Perspectives of Role-play as Assignment Task

Table 4 depicts participants' perspectives of role-play for patient-pharmacy personnel communication assignment task. The participants' perspectives were measured using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The analysis focused on 12 statements related to the participants' perception of the use of role-play as an educational assessment tool in patient-pharmacy personnel communication.

The mean scores ranged between 3.86 to 4.22 demonstrated a consistently high level of agreement among the participants regarding the effectiveness of role-play across various statements. The mean score of 4.01 (37.8% strongly agreed and 41.9% agreed) for statement one reflects participants' positive perception on the utilisation of role-play had a favourable impact on their communication skills. This aligns with the findings by Mogra (2012), who reported that trainee teachers can acquire effective communication techniques through active participation in role-playing activities. Moreover, the preference for role-playing to enhance general communication skills is also supported by other studies involving medical students (Bosse et al., 2010; Manzoor et al., 2012). These studies have also highlighted the benefits of role-play in fostering effective communication skills among learners.

Similarly, when it comes to confidence levels, a significant number of participants (35.1% strongly agreed and 36.4% agreed) acknowledged that their level of confidence in communicating with patients had increased through role-play activities. The mean score of 3.93 further supports the positive perception of the participants regarding the enhancement of their confidence in patient communication. These findings clearly underscore the positive impact of role-play on the participants' communication abilities and self-assurance.

Previous research by Lavanya et al. (2016) demonstrated similar outcomes, where over 80% of the medical students stated that role-play interventions benefited them in acquiring communication skills between doctors and patients related to medication prescription. In the same vein, respondents in the study conducted by Yazali et al. (2022) agreed that role-play significantly contributed to their confidence in delivering medication therapy information. The students reported high levels of confidence while advising patients on drug therapy, paying attention to critical details such as the medicine name, purpose, mechanism, dosage details, preventive measures, and most importantly, follow-up instructions.

Likewise in this study, participants expressed high level of agreement that role-play significantly enhanced their ability to offer counselling to patients, effectively handle conflicts, and retain essential pharmacology concepts and drug knowledge. These findings are consistent with Tayem et al. (2016) who found that role-play efforts boost students' confidence in minimizing medication errors in the future. In summary, this study's findings echoed the existing literature that role-play approach is effective in elevating students' self-assurance when interacting with patients and delivering essential medication-related information.

Regarding counselling patients, most respondents corresponded (31.1% strongly agreed and 39.1% agreed) that their confidence had significantly increased through their role-play experiences. The mean score of 3.86 indicates an overall positive perception among the participants. This is in line with Lavanya et al. (2016) whereby over 90% students expressed gaining immense confidence while counselling patients about drug therapy especially on crucial details such as drug names, purposes, mechanisms, dosing specifics, precautions, and follow-up instructions. This heightened confidence is crucial in minimizing medication errors, as supported by findings from a similar study on medication communication (Tayem et al., 2016).

Additionally, a significant proportion of participants (41.9% agreeing and 29.7% strongly agreeing) attributed role-play to their improved retention of pharmacology concepts and drug knowledge. This finding underscores the efficacy of role-play as a tool for reinforcing and retaining vital information. The participants' agreement or strong agreement with these statements highlights the instrumental role of role-play in enhancing their skills and knowledge in these critical domains. Moreover, it is worth noting that role-playing not only develops practical skills but also fosters empathy for patients, as previously highlighted by Bosse et al. (2010).

The students' feedback highlighted the perceived significance of role-play as a vital teaching and learning strategy, particularly in comprehending and retaining complex pharmacological topics. This finding aligns with the study conducted by Yazali et al. (2022), where many students emphasized the importance of role-play in their learning process. Overall, the participants' responses demonstrated that role-play not only positively influenced their patient communication skills but also played a pivotal role in boosting their confidence in providing patient counselling and mastering pharmacology concepts. These outcomes underscore the multifaceted benefits of role-play in pharmacy education, nurturing both effective communication skills and retention of subject knowledge.

Moreover, the impact of role-play extended beyond enhancing conflict resolution skills, with most participants (41.9% agreeing and 28.4% strongly agreeing) acknowledging its positive influence in this area. The mean score of 3.86 further reinforces the participants' perception of

role-play as an effective approach to handling conflicts more adeptly. Similarly, Gjestvang et al. (2021) showed that incorporating role-play extensively in pharmacy education, where students actively assumed the roles of patients, healthcare professionals, and observers, alongside theoretical preparation, and reflective exercises, appeared to evoke essential humanistic values and attitudes. These values and attitudes play a crucial role in enhancing relational competence, particularly in managing conflicts effectively. Overall, the participants' responses clearly indicated that role-play not only positively influenced their confidence in handling conflicts and their grasp of pharmacology concepts but also significantly improved their patient communication skills. The comprehensive benefits of role-play in pharmacy education extend beyond mere skill development to encompass the cultivation of empathy for patients, making it an invaluable and versatile educational tool.

The participants' recognition of the importance of effective communication in providing counselling and delivering drug information to patients was evident in the analysis. A significant majority (46.0% strongly agreed, and 35.1% agreed) expressed a heightened awareness of the significance of communication in their future roles as pharmacy personnel. The high mean score of 4.10 reflects the participants' strong agreement on this matter. It is evident that appropriate consultations between patients and healthcare providers, especially regarding prescription medicines, positively increase patient adherence rates (Kripalani et al., 2011).

Table 4: Students' perspectives Of Role-Play For Patient-Pharmacy Personnel Communication Assignment Task

No.	Statement	Strongly Agree (5) N (%)	Agree (4) N (%)	Neutral (3) N (%)	Disagree (2) N (%)	Strongly Disagree (1) N (%)	Total score	Mean	SD	Perception
1	My ability to communicate with patients has improved in general.	28 (37.8%)	31 (41.9%)	9 (12.2%)	0 (0%)	6 (8.1%)	293	4.01	1.12	Agree
2	My level of confidence to communicate with patients has improved in general.	26 (35.1%)	27 (36.4%)	15 (20.3%)	1 (1.4%)	5 (6.8%)	287	3.93	1.11	Agree
3	My level of confidence to offer counselling to patients has increased.	23 (31.1%)	29 (39.1%)	15 (20.3%)	2 (2.7%)	5 (6.8%)	282	3.86	1.11	Agree
4	My level of confidence to deal with conflicts has increased.	21 (28.4%)	31 (41.9%)	17 (22.9%)	0 (0%)	5 (6.8%)	282	3.86	1.06	Agree
5	It helps me to remember my pharmacology concept and knowledge about drugs.	22 (29.7%)	31 (41.9%)	15 (20.3%)	1 (1.4%)	5 (6.8%)	281	3.85	1.08	Agree
6	I appreciate the importance of communication in providing counseling and disseminating drug information effectively to patients.	34 (46.0%)	26 (35.1%)	8 (10.8%)	0 (0%)	6 (8.1%)	299	4.10	1.14	Agree
7	I have learnt through self-reflection and feedback from my colleagues.	28 (37.8%)	32 (43.2%)	8 (10.8%)	1 (1.4%)	5 (6.8%)	295	4.04	1.09	Agree
8	I enjoy role-playing projects.	40 (54.0%)	19 (25.7%)	8 (10.8%)	2 (2.7%)	5 (6.8%)	306	4.19	1.16	Agree
9	If given a choice, I would prefer to do projects that include a role-playing activity.	34 (46.0%)	22 (29.7%)	9 (12.2%)	3 (4.0%)	6 (8.1%)	292	4.00	1.22	Agree

10	Role-playing helps me remember information more than traditional lecture method.	32 (43.2%)	25 (33.8%)	10 (13.5%)	2 (2.7%)	5 (6.8%)	294	4.03	1.14	Agree
11	I enjoy working with others during this role-playing project.	40 (54.0%)	23 (31.1%)	4 (5.4%)	2 (2.7%)	5 (6.8%)	308	4.22	1.13	Strongly agree
12	I prefer hands-on activities compared to learning from lecture notes.	38 (51.3%)	21 (28.4%)	8 (10.8%)	2 (2.7%)	5 (6.8%)	298	4.08	1.21	Agree

Additionally, most respondents agreed (43.2% agreed, and 37.8% strongly agreed) that they gained valuable insights through the reflective processes, underscoring the value of self-assessment and peer input in their professional development. The mean score of 4.04 supports the participants' positive perception of these learning experiences. The study by Ronning & Bjorkly (2019) found that role-playing in supervised groups facilitated reflection and insight not only for students in patient and therapist roles but also for peers observing the group sessions. Similarly, in another similar study, students enjoyed role-playing assignments and believed that it provided a dynamic way to enhance critical thinking through peer-based learning (Presti, 2019)

The participants' enjoyment of role-playing projects was clear, with a significant majority (54.0% strongly agreeing, and 25.7% agreeing) expressing their positive experiences with such activities. This finding aligns with Al-Aqeel et al. (2013) and underscores that role-play serves not only as an effective educational tool but also enhances student engagement and enthusiasm. The high mean score of 4.19 further reflects the participants' positive attitudes and enjoyment of role-playing activities.

Moreover, the participants showed a strong preference for role-playing activities, indicating that if given a choice, they would opt for projects that include a role-playing component. A considerable proportion of participants (46.0% strongly agreeing, and 29.7% agreeing) favoured projects involving role-playing tasks. The mean score of 4.00 indicates a strong inclination towards role-play among the participants. This preference further reinforces the positive perception of role-play as an effective assessment tool in patient-pharmacy personnel communication. A similar sentiment was found in a study by Charon & Fox (1995), where students preferred small group interactive activities over dictated lectures as the teaching method for ethics, as it allowed them to freely engage in subject matter discussions.

Furthermore, the results indicated that role-play was perceived as a more effective method for retaining information compared to traditional lecture methods. A substantial proportion of participants (43.2% strongly agreeing, and 33.8% agreeing) acknowledged that role-play helped them remember information better than traditional lecture-based approaches. The mean score of 4.03 supports this perception. Role-play is preferred by students possibly because it provides students a platform to actively participate and improve professional and interpersonal behaviours, fostering productivity rather than passive observation (Joyner & Young, 2006).

In general, the participants' positive experiences, enjoyment, and preference for role-play activities, combined with their perception of its effectiveness in information retention, affirm the value of role-play as an engaging and impactful educational tool in pharmacy education. Similarly, a significant majority of participants (54.0%) expressed strong agreement in their enjoyment of working with others during role-playing projects. This finding underscores the collaborative and interactive nature of role-play, contributing to a positive and enriching learning experience. The high mean score of 4.22 supports the participants' consensus on this aspect. These positive outcomes can be attributed to the advantageous characteristics of role-playing, such as bringing together individuals with diverse perspectives, facilitating experience-based learning and information sharing, promoting creative problem-solving, and encouraging thinking outside the box (Mogra, 2012).

Lastly, the participants clearly showed a preference for hands-on activities over learning solely from lecture notes. Slightly over half of the participants (51.3% strongly agreeing, and 28.4% agreeing) indicated their inclination towards interactive and practical learning approaches. The mean score of 4.08 strongly indicates their preference for interactive learning. This finding is consistent with a previous study conducted by Al-Aqeel (2013), where 70% of their respondents enjoyed role-play activities and valued collaborative work during role-playing projects. It highlights the students' shared preference for engaging in interactive and participatory learning methods instead of passive lecture-based formats.

Overall, the analysis of participants' perspectives overwhelmingly indicates a positive perception of the use of role-play as an educational assessment tool in patient-pharmacy personnel communication. Most participants agreed or strongly agreed with the statements, demonstrating their perceived benefits of role-play in improving communication skills, boosting confidence levels, honing conflict resolution abilities, enhancing knowledge retention, and fostering a deeper appreciation of the importance of effective communication in patient counselling. The positive outcomes of role-play, along with its collaborative and interactive nature, reinforce its significance as a valuable tool in pharmacy education.

Benefits and Challenges of Role-play as Educational Teaching Tool

Table 5: Students' Responses On Benefits And Challenges Of Role-Play As Educational Teaching Tool

No.	Statement	Yes	No
1	Role-play helps me to understand my subject better	74 (100%)	0 (0%)
2	Role-play helps me to visualise various real-life encounters	74 (100%)	0 (0%)
3	Role-play is fun	74 (100%)	0 (0%)
4	Role-play is engaging	74 (100%)	0 (0%)
5	Role-play is a way of interactive learning	74 (100%)	0 (0%)
6	Role-play concept is innovative and meaningful	73 (98.6%)	1 (1.4%)
7	Role-play is a waste of time	17 (23.0%)	57 (77.0%)
8	Role-play is useful for learning communication skills	74 (100%)	0 (0%)
9	Students poor acting skills is a drawback for role-play	44 (59.5%)	30 (40.5%)
10	Role-play may be included in the pharmacy curriculum	61 (82.4%)	13 (17.6%)

Table 5 presents the students' responses regarding the benefits and challenges of using role-play as an educational teaching tool. All 74 students (100%) agreed that role-play had numerous advantages, including improved subject understanding, visualisation of real-life scenarios, enjoyable and engaging learning experiences, and enhanced interactive learning. These findings align with previous research by Ladousse (2004), which highlighted role-

playing as a beneficial teaching approach that enhances engagement and enjoyment in the classroom, leading to better achievement of learning objectives.

Similarly, Al-Aqeel (2013) identified advantages reported by respondents, including improved understanding of ethical issues through role-play, challenges to their thinking, gaining multiple perspectives, and the fun aspect of learning. Students also appreciated how role-play made the learning process feel more like "real life" and enabled them to view situations from different angles. Other studies, such as those by Ma (2020) and Oberle (2004), also emphasized the practical application of role-playing activities in helping students to visualise real-world applications of communication skills.

The importance of role-play in learning communication skills was recognized by all respondents in this study (100%). This finding surpasses a study by Lavanya et al. (2016), which had around 90% agreement on the usefulness of role-play for communication skills, albeit in pharmacology cases. Participants in our study reported that the acquired skills through role-play would be beneficial in their future interactions with patients, echoing Shankar's (2008) study findings. Manzoor et al. (2012) suggested that role plays could effectively deliver both basic and clinical components of a medical curriculum while also fostering empathy toward patients, a sentiment echoed by Bosse et al. (2010).

An overwhelming majority of students, 73 out of 74 (98.6%), found the concept of role-play to be innovative and meaningful. They appreciated the idea of role-playing as an excellent method for teaching communication skills, similar to the study findings reported by Yazali et al. (2022) and Bosse et al. (2010). Meanwhile, only 17 students (23.0%) agreed that role-play is a waste of time, with 57 students (77.0%) disagreeing. This aligned with Lavanya et al.'s (2016) study, where only a small number of students (18.75%) felt that role-plays were a waste of time. Despite its popularity for promoting active learning, role-play does come with its challenges such as initial reluctance among some students to participate and time constraints as noted by Mogra (2012). Notably, 59.5% students expressed that students' poor acting skills could be a drawback for role-play. This issue was also reported as a potential limitation by Al-Aqeel (2013). Nonetheless, 61 out of 74 (82.4%) students agreed that role-play should be included in the pharmacy curriculum, in line with findings from Lavanya et al. (2013).

Importance of Communication Skills Before and After Role-play Assignment

Table 6 illustrates the students' perception of the importance of communication skills in pharmacy practice before and after completing the role-play assignment task. Initially, 68.9% of the students considered communication skills as important, while 20.3% perceived them as very important. Only 10.8% of the students felt that communication skills were not important at all. However, upon completing the role-play assignment, there was a significant shift in the students' views, with 68.9% considering communication skills as very important, and 31.1% viewing them as important. None of the students felt that communication skills were not important at all after completing the assignment. This change reflects a positive impact of the role-play assignment on the students' perception of the significance of communication skills in pharmacy practice.

Our study's results align with those of Yazali et al. (2022) and Lavanya et al. (2016), where none of the students viewed role play as unimportant. These findings suggest that the role-play

assignment task played a crucial role in helping the students to recognise the vital importance of communication skills in their future pharmacy practice.

Table 6: Students' View Of The Importance Of Communication Skills Before And After Completing Role-Play Assignment Task

Perceived importance of communication skills in pharmacy practice	Not important at all	Important	Very important
Before role-play assignment	8 (10.8%)	51 (68.9%)	15 (20.3%)
After role-play assignment	0 (0%)	23 (31.1%)	51 (68.9%)

Suggestions for Improvement of Role-play Assessment

Table 7 presents an analysis of participants' comments and suggestions, which have been categorized using thematic analysis into various themes. Based on these themes, several suggestions for improvement have been identified for future role-play assignments.

Table 7: Suggestions To Improve Role-Play As An Assessment For Patient-Pharmacy Personnel Communication Skills

Theme	Suggestions/Comments from Participants
Improvement of assignment detail	<i>'Hopefully there's an improvement in telling detail statement about assignment.'</i> <i>'Further explanation and briefing regarding assessment, as we only received rubrics and a simple set of instructions (however it did enable us to be more creative with the production quality of the roleplay videos).'</i> <i>'More improve and explanation for get remember what to do'</i>
Provision of a variety of props	<i>'Provide more access to props and locations to shoot.'</i> <i>'More props available to be used such as different medications.'</i> <i>'All students must do a roleplay with appropriate props settings and interesting scenario that given by the lectures.'</i> <i>'More 'hospital' prop provided to create a real hospital environment.'</i> <i>'More props, guidance in using the pharmacy skills lab'</i>
Diversifying scenarios and situations	<i>'Provide different and funny scenarios every semester, this assignment should be continued for the next semester '</i> <i>'Add more situations for the role-play '</i> <i>'Provide many situations.'</i> <i>'More choices of scenes '</i> <i>'I suggest that we should do a lot of variety of role-play in our education because it improves our communication skills.'</i> <i>'Provide more suggestions of scenarios that we can choose from, no worries this semester scenarios were quite fun too! '</i> <i>'Give more situation for student to choose and flexibility of duration able student'</i>
Enhancing communication skills	<i>'If doing it with friends, it improves out communication and role-playing skills.'</i>

	<i>'I suggest that we should do a lot of variety of role-play in our education because it improves our communication skills'.</i>
	<i>'As in role-playing, the patient ones must act in various of illness so that pharmacists can practice and get used to communicate with different kinds of people.'</i>
	<i>'Using variety of language during communication'</i>
Fostering student creativity	<i>'Less strict rules, let students create something creative freely'</i>
	<i>'Don't want it to be strict.'</i>
	<i>'There is no extra suggestion from me to improve the role-play. The only way to improve the role-play is based on the student's creativity'</i>

To enhance the assignment details, it is recommended to provide a more comprehensive explanation of the assignment requirements and offer a clear briefing and assessment guidance to ensure a better understanding of the assessment criteria. Providing access to a wider range of props and locations for role-play scenarios, including different medications and pharmaceutical items as props to create a realistic environment, and offering more 'hospital' props to simulate genuine hospital settings are essential measures to increase the authenticity of role-play exercises. Moreover, guidance on using the pharmacy skills lab effectively can be beneficial in providing a variety of props for students.

Next, to expand the scenarios given for role-play exercises, it is suggested to offer a more diverse range of situations, including both serious and light-hearted options. Additionally, providing multiple choices and flexible durations for role-play scenarios can accommodate different learning preferences and needs of the students. Encouraging students to engage in role-play exercises with their peers can help improve communication and role-playing skills. Emphasizing the importance of practicing communication with individuals from diverse backgrounds and conditions can foster adaptability and cultural competency. Exploring the use of different languages during role-play exercises can also enhance language skills and promote cross-cultural understanding.

Lastly, providing more flexibility and freedom for students to express their creativity in role-play scenarios can be achieved by avoiding overly strict rules and allowing them to explore innovative approaches in their assignments. This approach nurtures student creativity and encourages them to think outside the box. These suggested improvements align with the findings of Kilgour et al. (2015b), who emphasized the value of role-plays in challenging preconceived ideas, promoting creative thinking, applying theory to practice, making lessons enjoyable, and providing active learning experiences that increase student engagement and learning. Overall, implementing these suggestions can further enhance the effectiveness of role-play assignments in pharmacy education, fostering better communication skills and preparing students for real-world pharmacy practice.

Limitations of the Study

This study, while offering valuable insights into students' perspectives on role-play as an educational assessment tool in patient-pharmacy personnel communication, faces several study limitations that warrant acknowledgment. The relatively small sample size of Semester 3 students may limit the generalisability of findings to a broader population or different academic batches. Future research could enhance applicability by employing a larger and more diverse study samples (Al-Aqeel, 2013). Additionally, the reliance on self-reported data introduces the

possibility of social desirability bias, as participants might provide responses deemed socially acceptable. To address these limitations, future studies could explore varied contexts, employ qualitative research methods, and conduct comparative analyses. These endeavors would contribute to refining role-play as an effective educational assessment tool in pharmacy education.

Conclusion

This study has successfully achieved its objectives of investigating pharmacy students' perspectives on the use of role-play as an educational assessment tool in patient-pharmacy personnel communication and identifying the benefits and challenges faced by students during their participation in role-play exercises. The findings highlight the significant enhancement of pharmacy students' understanding and learning experiences regarding communication skills through role-play. Despite encountering challenges such as initial reluctance and time constraints, the study suggests that clearer instructions could optimize the implementation of role-play in pharmacy education. Moreover, students express a strong preference for role-play activities due to their innovative and meaningful nature, fostering collaboration and creative thinking. This study contributes valuable insights for educators to enhance students' preparation for real-world scenarios, ultimately promoting competent and empathetic healthcare providers. To address the identified challenges, solutions such as providing clearer instructions and offering flexible scenarios could be implemented, along with considering alternative data collection methods to mitigate biases. By incorporating these solutions, educators can optimize the benefits of role-play in pharmacy education and nurture proficient communication skills among future pharmacy professionals.

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Conflict of Interest

The authors declare that they have no conflicts of interest.

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