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Patient-Taught Workshop to Develop Calgary-Cambridge Communication Skills in Hospital Pharmacy Residents: Implementation and Outcomes

Helene Dupont[1]*, Marc A. Lefevre[1]

[1]Department of Pharmacy Education and Professional Practice, Faculty of Pharmacy, University of Montpellier, Montpellier, France.

***E-mail** ✉ helene.dupont@outlook.com

Abstract

Over recent decades, interactions between pharmacists and patients have transformed, and the expansion of clinical pharmacy has led pharmacists to assume more patient-centered roles. Fulfilling these roles demands particular competencies, including skills in patient-focused communication. Assessing students' abilities in patient-centered communication within academic environments is difficult, and alternative or complementary evaluation strategies may be required to address the limitations of conventional preceptor assessments or objective structured clinical examinations (OSCE). At the same time, interest in actively involving patients in the education of healthcare professionals has increased, yet reports describing patient-led teaching within pharmacy settings remain scarce. Therefore, the purpose of this study was to design and implement a patient-teaching workshop and to evaluate its effect on pharmacy students' patient-centered communication competencies. The workshop was co-created by four patients, an experienced clinical pharmacist, and an education sciences lecturer, and was delivered within a hospital pharmacy residency program. The primary educational goal was to develop the three competencies described in the Calgary–Cambridge guide to the medical interview: (i) establishing a relationship, (ii) performing a structured interview, and (iii) collecting relevant information. The learning process included reflection on participants' perceptions of pharmacist–patient communication, an initial simulated interview, didactic instruction, and a second simulated interview. Following each simulation, patients and peer residents evaluated learners using a competency assessment chart and provided individualized feedback. Evaluation methods consisted of comparing scores from the first and second interviews and analyzing responses from an anonymous post-workshop questionnaire. A total of 47 residents and 19 patient teachers participated in the workshop. Scores for all three competencies increased after the second simulated interview, as assessed by both patients (+25%) and peer residents (+29%).Residents reported high overall satisfaction and indicated that they gained knowledge about interview techniques and interpersonal skills that support relationship building with patients. The "involvement of patients" was identified as the most valued aspect in most evaluation forms (87%), and participants highlighted the importance of collaborative and interprofessional learning during the workshop. Three key themes emerged: (1) patients' expertise, (2) credibility, and (3) relationship, demonstrating that students perceived patients as trustworthy and legitimate sources of knowledge within this educational setting. This patient-teaching strategy enhanced patient-centered communication competencies among pharmacy residents and strengthened collaborative partnerships between patients and pharmacy students.

Keywords: Patient-led education, Pharmacy, University curriculum, Communication Skills

Introduction

Enhancing communication between healthcare professionals and patients is linked to improved clinical outcomes [1]. The pharmacist–patient relationship has evolved substantially in recent decades, and the growth of clinical pharmacy has enabled pharmacists to assume patient-centered responsibilities [2]. Pharmaceutical care encompasses therapeutic decision-making related to medication use for individual patients. Throughout this process, pharmacists collaborate with patients and other

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healthcare professionals to design, implement, and monitor treatment plans aimed at achieving defined therapeutic outcomes [3]. Delivering patient-centered care requires targeted competencies and education, including effective patient-focused communication and the ability to conduct structured interviews.

Assessing students' competencies in academic contexts is complex and remains debated in pharmacy practice education. In particular, evaluations conducted by traditional preceptors have been criticized due to concerns regarding consistency and accuracy [4]. In response, the objective structured clinical examination (OSCE), originally developed for medical education, has been incorporated into pharmacy curricula. OSCEs enable the evaluation of clinical skills and non-technical competencies, such as professionalism and communication, within simulated scenarios. They may be used for both formative and summative assessment throughout pharmacy programs. Compared with other evaluation methods, OSCEs demonstrate relatively strong reliability, validity, and objectivity. Nevertheless, standardized and idealized OSCE scenarios may not fully reflect real-world practice, and variability in standardized patient performance can affect student outcomes [5, 6]. Consequently, additional assessment approaches are needed to address these limitations.

There is increasing recognition of the value of public and patient involvement in the education of healthcare professionals, and trainees generally support greater patient participation in teaching activities [7]. Patient-led education refers to the active participation of real patients in professional training, where they share their personal healthcare experiences. This approach supports the acquisition of practical skills for working with patients and complements the theoretical and scientific components of healthcare education [8]. Despite this, patient involvement in pharmacy education has been reported infrequently and has often been passive, such as serving as subjects in case studies or bedside teaching sessions. Growing interest in more active patient engagement reflects its potential to enrich students' understanding of future professional environments by acknowledging patients as experts in their own conditions [9]. Levels of patient participation in healthcare education vary widely, and multiple models describe these roles. The "Montreal model," developed at the University of Montreal, conceptualizes a continuum of patient engagement ranging from information sharing to full partnership, where patients and faculty jointly design programs and co-teach sessions [10]. Similarly, Towle *et al*. proposed a taxonomy to classify degrees of involvement and clarify patient roles [11], including patient-teachers who contribute to educational delivery, curriculum development, and evaluation.

Accordingly, the objective of this study was to create a patient-centered communication workshop involving patient-teachers and to examine its impact on learners' communication competencies.

Materials and Methods

This investigation was conducted within a residency-level teaching unit dedicated to clinical pharmacy in a hospital pharmacy training program.

Development and structure of the workshop

The educational intervention was jointly created by four patients, one senior clinical pharmacist, and one academic specialist in education sciences. Initially, the pharmacist and education lecturer designed a preliminary teaching framework, which was subsequently reviewed by four patients enrolled in the University expert patient program. The general organization of the workshop was validated by the patients. It was collectively agreed that facilitation responsibilities would be shared between the clinical pharmacist and the patient participants. In particular, patients were assigned full responsibility for leading the experiential learning activities described below. Following patient feedback, additional components were integrated, including a specific session allowing students to reflect on patient participation and the introduction of standardized instruments to support role-play activities.

The primary educational aim was to develop the three core competencies defined in the Calgary–Cambridge medical interview framework: (i) relationship establishment, (ii) structured interviewing, and (iii) information acquisition [12]. The workshop had a total duration of four hours and was organized into four sequential phases.

- **Step 1:** The session opened with reminders regarding confidentiality and mutual respect, followed by participant introductions. The competency framework was then presented to establish shared expectations and clarify faculty performance standards. A 15-minute group brainstorming activity on pharmacist–patient

communication was used as an introductory exercise, involving both residents and patients.

- **Step 2:** Participants engaged in a simulated medication history interview through role play. Patient teachers assumed the role of patients and subsequently shared feedback with residents based on their lived experience of the interaction.
- **Step 3:** A theoretical session on patient-centered communication principles was delivered by the clinical pharmacist using a slide presentation, with patient teachers contributing illustrative examples from their own healthcare experiences.
- **Step 4:** A second medication history role play was conducted, with patients interacting with different residents than in the initial simulation. Patients provided individualized feedback, followed by a group-based debriefing discussion.

Patient teachers were volunteers recruited from the alumni network of the local University of patients, and all had completed the University expert patient program. Prior to the workshop, each volunteer received an individual briefing regarding resident profiles and session objectives. No scripted scenarios were provided in order to maintain authenticity, spontaneity, and realism during both simulations and feedback discussions.

Assessment and outcome measures

After each simulated interview, learner performance was independently evaluated by patients and peer residents using a structured competency assessment tool. This instrument was adapted from the Calgary–Cambridge interview guide [12] and included 14 evaluated skills: six related to competency (i) relationship building, four related to competency (ii) structured interviewing, and four related to competency (iii) information gathering. Each skill was rated on a five-point scale ranging from 1 (not achieved) to 5 (fully achieved). For comparative purposes, competency scores were transformed into a standardized total score out of 100. Differences between first and second interview scores were analyzed using the Wilcoxon–Mann–Whitney test, and associations between patient and peer assessments were examined using Pearson correlation coefficients.

Participant satisfaction, reflective learning processes, and perceived self-efficacy were additionally explored using an anonymous post-workshop questionnaire composed of open-ended questions. Qualitative responses were examined through content analysis to identify recurrent concepts, expressions, and thematic patterns.

Ethical approval was obtained from the pedagogical committee of Aix-Marseille University–School of Pharmacy, which oversees educational research authorization and ethical compliance. Verbal informed consent was collected from all participants and validated by the committee. Ethical conduct adhered to the principles of the Declaration of Helsinki.

Results and Discussion

The workshop was attended by 47 pharmacy residents, including nine men and 38 women aged between 22 and 25 years. Nineteen patients participated as patient teachers, including the four involved in the workshop design. Patient assessments demonstrated significantly higher scores following the second interview compared with the first across all competency domains: (i) relationship building (91.6 ± 11.1 vs 74.5 ± 15.5; $p < 0.001$), (ii) structured interviewing (87.5 ± 12.5 vs 69.7 ± 19.7; $p = 0.005$), and (iii) information gathering (82.9 ± 20.5 vs 65.8 ± 19.0; $p = 0.01$).

Peer resident evaluations similarly showed score increases after the second interview for all competencies: (i) relationship building (83.7 ± 12.6 vs 72.0 ± 20.5; $p = 0.036$), (ii) structured interviewing (79.4 ± 15.1 vs 51.2 ± 16.6; $p < 0.001$), and (iii) information gathering (76.9 ± 20.6 vs 66.6 ± 16.3; $p = 0.030$) **(Figure 1)**. After the second interview, peer-assigned scores were significantly correlated with patient ratings for all three competencies: (i) relationship building ($r = 0.706$; $p < 0.001$), (ii) structured interviewing ($r = 0.673$; $p < 0.001$), and (iii) information gathering ($r = 0.413$; $p = 0.032$). These findings indicate short-term competency gains following the educational intervention.

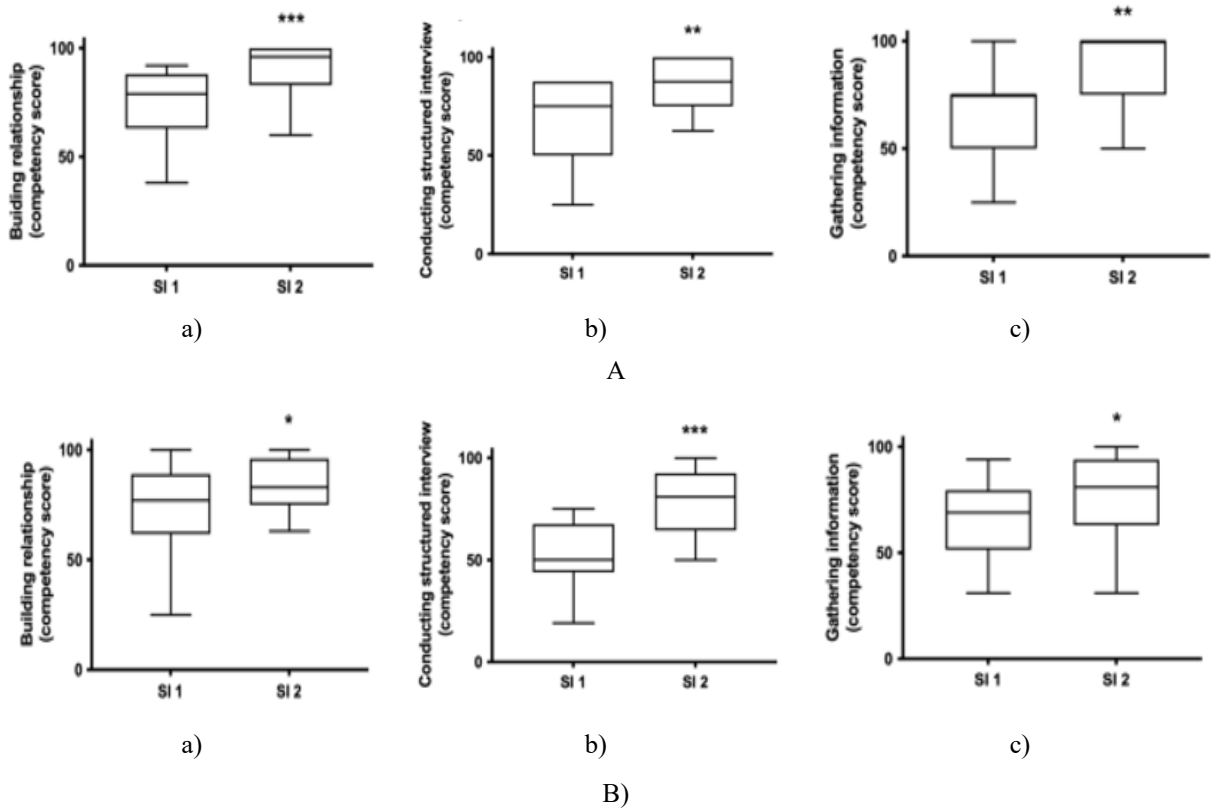

Figure 1. Development of communication skills as evaluated by patient instructors and fellow residents. Comparison of competency ratings provided by patients (A) and peers (B) across three domains—performing a structured interview (a), establishing rapport (b), and collecting information (c)—between simulated interview 1 (SI 1) and simulated interview 2 (SI 2). Results are illustrated using box-and-whisker plots (minimum to maximum; median indicated). *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

A total of 47 resident responses were collected from the questionnaire. Overall satisfaction levels were high, with residents emphasizing the value of the collaborative atmosphere and the role of interprofessional learning during the workshop. Participants reported gaining knowledge related to interview techniques as well as interpersonal competencies linked to professional posture when interacting with patients. These outcomes reflect a metacognitive learning process. In addition, residents indicated both their perceived ability and motivation to apply newly acquired skills in professional practice, demonstrating self-efficacy **(Table 1).**

Table 1. Representative quotations illustrating themes derived from the qualitative analysis of student reflections on the workshop, based on learning objectives of the pharmaceutical interview course as reported in open-ended survey items.

Theme	Subtheme	Illustrative paraphrased quotes
Satisfaction	**Perceived value of the collaborative atmosphere**	– "I valued the natural flow of interactions."– "I really enjoyed learning alongside patients in a pressure-free context, unlike hospital environments."– "The open and unrestricted dialogue was highly appreciated."
	Significance of interprofessional learning	– "Patients' perspectives on my interview and their feedback were extremely educational."– "Our learning extended far beyond theoretical knowledge."
Metacognition	**Knowledge related to interview conduct**	– "I learned how to properly structure and conduct a patient interview."– "I gained insight into formulating open-ended questions, introducing myself, and outlining the session."

	Interpersonal skills and professional attitude	– "Practicing attentive listening to patients' narratives."– "Understanding the role of non-verbal cues such as smiling, posture, and empathy in patient interactions."
Self-efficacy	**Application of skills in professional practice**	– "In the future, I intend to apply the communication strategies learned today during pharmaceutical interviews."– "I will use a structured interview approach, emphasizing patients' personal context while allowing them space to speak without excessive detail."

"The involvement of patients" was identified as the most appreciated component in most evaluation forms (87%), with participants highlighting it as a key feature of the session. Qualitative statements were grouped into three main themes. First, residents recognized patients' experiential knowledge in their interactions with healthcare professionals:

• "I learned how to translate patients' experiences into practical approaches"

• "I valued discussions about how patients perceive their relationship with pharmacists and their role within healthcare"

• "I plan to apply patients' advice regarding what should or should not be done during a pharmaceutical interview"

Second, residents described patients' viewpoints as authentic and trustworthy:

• "I enjoyed hearing a genuine point of view"

• "I appreciated conversations with real patients who had concrete experiences to share"

• "I valued discussions based on real-life situations"

Finally, residents reported increased confidence in the relationships established with patients during the workshop:

• "I appreciated the closeness to patients and the feedback they provided"

• "I valued the freedom to speak openly and ask any questions"

• "Everyone could express their feelings freely, without stereotypical language"

This study presents a competency-based educational workshop within a pharmacy curriculum, centered on three cross-cutting skills required for conducting pharmaceutical interviews and integrating patients as partners. The findings indicate a beneficial effect of the workshop on residents' perceptions within the pharmacy training program. First, residents responded positively to the workshop and reported high satisfaction, emphasizing its relevance [13]. In particular, the cooperative learning environment and the interprofessional dimension were frequently cited as the most valued elements. These observations align with prior literature on patient involvement in education [11-14].

Second, residents reported learning gains related to interview techniques and professional attitudes that support relationship-building. They indicated acquiring knowledge aligned with the three primary learning objectives of the workshop, reflecting a metacognitive learning process. Metacognition refers to individuals' awareness of the cognitive processes used to learn and plays a role in knowledge acquisition [15]. Finally, all participants identified concrete skills they could apply, demonstrating learning outcomes. They also expressed intentions to implement these skills in their professional settings to enhance communication, suggesting openness to change and confidence in their ability to modify behavior.

Perceived self-efficacy is defined as individuals' beliefs in their capacity to organize and execute actions necessary to achieve specific performance outcomes [16]. Notably, self-efficacy has been shown to influence both the adoption and sustained use of behaviors and to positively affect work-related performance [17, 18]. Consequently, these findings indicate potential for long-term retention of skills. Overall, the workshop addressed three levels of the Kirkpatrick evaluation model: relevance, learning, and competence [13].

The study design did not permit assessment of long-term performance in professional practice. Nonetheless, an improvement in competency scores was observed throughout the session, indicating short-term skill development and behavioral change. Importantly, behavioral change was assessed by both patients and peer residents. Given the absence of a gold standard for evaluating relationship development, assessment from multiple perspectives appears appropriate [19]. In this context, patient ratings may reflect satisfaction with learning and provide external validation of educational impact. However, previous research suggests that patient evaluations may lack sufficient discrimination among students, as patients often provide favorable ratings [20]. Therefore, peer resident assessments were included.

Peers possess insight into both academic and professional standards, and prior studies have demonstrated correlations between peer and faculty evaluations [21-24].

In this workshop, patients acting as partners were encouraged to present their own cases and/or improvise scenarios to enhance diversity. This approach aligns with principles of patient-centered care, which are seldom emphasized in traditional classroom teaching that often prioritizes patient similarities over differences [11, 25]. Compared with OSCEs, where standardized scenarios may not fully reflect real-life complexity and where scripted patient behavior may influence learners, this method enhanced training realism [5, 6, 26]. A distinctive feature of this study was the inclusion of patients as evaluators of student competencies. Following the assessment, individualized patient feedback constituted a central component of the learning experience. Patients functioned as independent coaches, separate from faculty, and their feedback was perceived as "true" by residents.

Residents acknowledged patients' expertise in professional relationships, regarded patient input as reliable, and reported increased confidence in their interactions with patients. Speaker credibility refers to the extent to which an information source is perceived as relevant, competent, and trustworthy by the recipient [27]. Expertise and reliability are, therefore, key dimensions of credibility. Accordingly, residents considered patients to be credible information sources within this educational framework [28]. These findings highlight that collaboration with patients in pharmacy education—particularly in assessment and individualized feedback—supports trust-building and competency development. As a complement to OSCEs, this type of workshop offers a transferable model for pharmacy schools seeking to strengthen patient-centered competency training and foster partnerships between patients and pharmacy students.

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