Training for Collaborative Care: How Hospital Team Members View Pharmacy Students

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ABSTRACT

Background: Interprofessional education activities are prevalent across health professional curricula in Canada. Students develop collaborative roles through structured on-campus programming; however, the ways in which established teams engage learners in hospital settings are unknown.

Objective: To explore how mixed-discipline professionals describe expectations and experiences related to collaborating with pharmacy students who join their team for training.

Methods: Mixed-discipline team members of an acute medicine clinical teaching unit were interviewed according to a semistructured interview guide. Participants described encounters with pharmacy trainees and shared expectations of the students' collaborator roles in patient care. Audiorecordings of the interviews were transcribed and coded independently by 2 researchers, who synthesized the data and used the template analysis method to derive themes.

Results: Fourteen team members from various disciplines were recruited. Participants' descriptions of collaborative roles were organized into 2 main themes: pharmacy students as informants and pharmacy students as a bridge. A third integrative theme, engagement, encompassed how team members described pharmacy trainees enacting these roles. Team members sought pharmacy students' medication-oriented expertise (e.g., dosing, compatibilities), and physicians often relied on the students' familiarity with study data to guide treatment choices. Nonphysicians capitalized on pharmacy student proximity to physicians to understand such decision-making and inform their own patient care. Accounts of pharmacy students' consultations with team members for patient assessments or to access other multidisciplinary knowledge were infrequent.

Conclusions: Most team members' expectations of pharmacy students in terms of the collaborator role lacked routine engagement or shared decision-making. These views represent challenges to the development of skills in collaborative care in workplace-based learning, which might be addressed through intentional interprofessional exercises assigned by preceptors. Further study is required to understand the potential of practice-based interprofessional education initiatives.

Keywords: collaborative care, interprofessional teams, pharmacy student training

RÉSUMÉ

Contexte : Les activités de formation interprofessionnelle sont répandues dans les programmes d'études des professionnels de la santé au Canada. Les étudiants développent des rôles collaboratifs grâce à des programmes structurés sur les campus; cependant, on ne sait pas comment les équipes de fournisseurs de soins de santé font participer les apprenants en milieu hospitalier.

Objectif : Étudier comment des professionnels de disciplines variées décrivent les attentes et les expériences liées à la collaboration avec les étudiants en pharmacie qui se joignent à leur équipe pour se former.

Méthodes : Les membres de l'équipe mixte d'une unité de formation clinique en médecine aiguë ont été interviewés selon un guide d'entretien semi-directif. Les participants ont décrit leurs rencontres avec des stagiaires en pharmacie et ont communiqué leurs attentes concernant les rôles collaboratifs des étudiants dans le domaine des soins aux patients. Les enregistrements audio des entretiens ont été retranscrits et codés indépendamment par 2 chercheurs qui ont synthétisé les données et utilisé la méthode d'analyse de modèles pour en dériver les thèmes.

Résultats : Quatorze membres de l'équipe provenant de diverses disciplines ont été recrutés. Les descriptions des rôles collaboratifs offertes par les participants ont été organisées en 2 thèmes principaux : les étudiants en pharmacie « informateurs » et les étudiants « passerelles ». Un troisième thème d'intégration, « l'engagement », englobait la façon dont les membres de l'équipe décrivaient les stagiaires en pharmacie jouant ces rôles. Les membres de l'équipe recherchaient l'expertise des étudiants en pharmacie en matière de médicaments (par exemple, dosage, compatibilités), et les médecins s'appuyaient souvent sur leur familiarité avec les données d'études pour guider les choix de traitement. Les non-médecins tiraient parti, eux, des échanges entre les étudiants en pharmacie et les médecins pour comprendre ce processus décisionnel et informer leurs propres soins aux patients. Les comptes rendus des consultations des étudiants en pharmacie avec les membres de l'équipe pour l'évaluation des patients ou pour accéder à d'autres connaissances multidisciplinaires étaient peu fréquents.

Conclusions : Les attentes de la plupart des membres de l'équipe à l'égard des étudiants en pharmacie en termes de rôle de collaborateur manquaient d'engagement de routine ou de prise de décision partagée. Ces points de vue représentent des défis pour le développement des compétences en soins collaboratifs dans l'apprentissage en milieu de travail, qui pourraient être abordés par des exercices interprofessionnels intentionnels confiés par les précepteurs. Une étude plus approfondie est nécessaire pour comprendre le potentiel des initiatives de formation interprofessionnelle fondées sur la pratique.

Mots-clés : soins collaboratifs, équipes interprofessionnelles, formation des étudiants en pharmacie

INTRODUCTION

Teams represent the basis for contemporary health care. Cooperative communication and interdependent work involving members with complementary expertise have benefits for patient safety and clinical outcomes.[1] Unsurprisingly, collaboration-oriented skills and abilities appear as educational outcomes at graduation for many health professions, as well as in interprofessional competency frameworks.[2,3] For example, core competencies or capabilities outlined for pharmacists and other medical and social care providers in North America, Australia, and Great Britain include interprofessional communication, role clarification, teamwork, conflict resolution, and ethical practice.[3,4] In Canada, expectations of graduating pharmacists to create and maintain collaborative professional relationships for health services delivery are outlined by both national accrediting bodies (for education programs) and regulatory organizations.[5,6] As such, campus-based interprofessional education (IPE) programming for trainees, whereby "students from two or more professions learn about, from and with each other",[7] is being adopted in pharmacy curricula throughout the country to help prepare trainees to function in multidisciplinary teams.[8] Yet it remains unclear, in practical terms, how collaborative care is taught or reinforced, once pharmacy students reach actual patient care settings for off-campus training.[9,10]

Workplace-based learning is fundamental to pharmacy students' development of practice competencies, especially those that are not readily simulated in other parts of the curriculum.[11] Workplace-based learning necessitates trainee enactment of interprofessional competencies within established teams under real practice conditions. For example, pharmacy trainees join teams in hospital settings to devise and provide advice on medication treatment plans and to monitor and evaluate drug safety and effectiveness for patients who are also receiving care from other health professionals.[5] Providing this type of pharmacist care requires team interaction with clear communication and the negotiation of care priorities with others. Unfortunately, the experiential curriculum may be falling short in terms of capitalizing on opportunities for health professional trainees to develop and enact the comprehensive skill set required for shared care in the workplace-based learning environment. As examples, medical, nursing, and physiotherapy trainees are among those learners who have reported inability to informally engage with hospital team members or to exercise conflict resolution.[12-14]

Workplace participatory practices theory provides a framework through which we might learn how students engage interprofessional team members in the conduct of clinical work.[15] One aspect of this perspective views the workplace as offering certain opportunities for learning, and access to such participation involves negotiated interactions with established members. For pharmacy students in hospital training settings, the participatory practices required for collaborative care involve establishing "positive relationships, negotiating overlapping responsibilities, and joining in respectful, shared decision-making".[2]

In this study, we explored how mixed-discipline professionals describe their experiences and expectations of the collaborative roles of pharmacy students who joined their team. Our goal was to gain a greater understanding of how interprofessional competencies are viewed and how their development among pharmacy students in hospital settings might be augmented.

METHODS

Methodology

We adopted a social constructivist perspective to underpin the design and analysis of semistructured interviews with participants representing different perspectives, in this case, team members from various health disciplines (referred to here as "mixed-discipline professionals"). Through this lens of investigation, participants constructed and shared their own interpreted reality of experiences with pharmacist trainees, which may be stimulated through contrast with expectations of students from their own discipline.

Participants and Setting

Study data were collected at a major Canadian teaching hospital affiliated with the University of British Columbia, where students from nearly 100 health professions and medical subspecialties train in team contexts. Mixed-discipline team members on the 2 adult acute medicine clinical training units (total of 54 beds) were invited to participate between December 2018 and August 2019. In addition to the 4 pharmacists affiliated with these units, patient care is provided by 3 each of dietitians and physiotherapists and 2 each of occupational therapists and social workers. A speech language pathologist and a wound care nurse are accessible by consult. A roster of more than 50 nurses cover shifts, and 9 internists serve as the regular attending physicians. These clinical staff are exposed to many and varied health professional trainees in their day-to-day practice and often supervise workplace-based learning of students within their respective disciplines.

Training on this service is a core clerkship experience for students within several disciplines and medical subspecialties and may last a few weeks to several months, depending on the professional program. Pharmacy students from the University of British Columbia who join the acute medicine unit are in their fourth (and final) program year and are completing an 8-week inpatient clerkship. By this point, trainees will already have completed at least 20 weeks of experiential education over the prior 3 years. In any given month, team pharmacists may be supervising 1 to 3 pharmacist trainees in this clinical learning environment.

Data Collection

Consenting participants were drawn from a convenience sample of health professionals who had worked as part of the acute medicine team for 1 year or more, with purposeful sampling from the distinct disciplines to ensure a broad range of experiences. Information about the study and an invitation to participate were distributed by email by both the director of the acute medicine unit and discipline-specific department heads; in addition, posters advertising the study were positioned throughout the unit.

The semistructured interview guide was informed by the social constructivist perspective[16] and included questions exploring the *collaborator* role expectations that health professionals express for pharmacy students joining the team (Box 1). Two pilot interviews were performed to test the wording and length of the interview guide. The volunteers for these pilots were a nurse and a dietitian from another unit in the hospital; their interviews were not included in the data analysis reported here.

One researcher (K.W.) conducted all of the study interviews, which were audiorecorded and lasted on average 36 (range 28–41) minutes. These recordings were transcribed verbatim by a third-party service, and the transcriptions were verified and finalized by a research assistant and the same researcher (K.W.).

Data Analysis

The interview transcripts were subjected to template analysis, which involves the development of a coding "template" or summary of themes that the researchers derive from the data set.[17] Following repeated reading of and familiarization with the transcripts, open coding of the data was carried out by the interviewer (K.W.) and the research assistant, who worked independently to develop preliminary coding structures. The first author (K.W.) then developed an initial template derived from the open data-coding process, which was sensitized by a priori themes derived from *collaborator* roles previously described in pharmacy and interprofessional competency frameworks.[2,3] However, our coding template was developed according to how team members constructed these roles through actual experiences with pharmacy students in the practice curriculum.

The authors (K.W., T.P.) worked separately to analyze the first 3 interview transcripts and met to agree upon a common coding template. The subsequent interviews were coded by the first author. We practically exhausted the study population of eligible participants from certain health professions on the team (i.e., dietitians, occupational therapists). We sought enrolment of representatives from other health professions (1 nurse and 1 physician) to achieve informational redundancy (i.e., no new information to yield additional and distinct codes). We shared (through blinded group email) our finalized themes with participants, worked with them to select suitable supporting comments, and offered an opportunity for their further input before moving on to final data synthesis and interpretation. The authors maintained dialogue with each other throughout the analysis process to ensure consistent application of the coding template and to deliberate on interpretations of the data.

The first author (K.W.) is a pharmacist who previously provided inpatient team-based care and supervised pharmacist trainees and whose research now focuses on curriculum evaluation in practice settings. The second author (T.P.) is a pharmacist providing patient care at the study institution, who also coordinates undergraduate pharmacy student placements across the patient care units at this site.

Ethics approval was obtained from both the University of British Columbia Behavioural Ethics Review Board and the research institute that has operational jurisdiction over the tertiary care centre in question.

BOX 1. Semistructured Interview Guide

1.	How long have you been working in this particular team-care setting?
2.	Have or do you currently train students in your own profession?
3.	Do you work or remember working with pharmacy students training on this unit?
4.	What types of activities do you observe pharmacy students conducting on your unit?
5.	In what ways do you encounter and interact with pharmacy students?
6.	What are your expectations of pharmacy student communication during these encounters/interactions?
7.	What are your expectations of pharmacy student collaboration during these encounters/interactions?
8.	What are features of a "team-ready" pharmacist trainee?
9.	What are your expectations of a "team-ready" trainee from your own profession?
10.	Do you have anything you wish to add?

RESULTS

We interviewed 14 team members (3 dietitians, 3 nurses, 2 occupational therapists, 4 general internist physicians, 1 physiotherapist, 1 social worker), who reflected on their encounters with and the work of pharmacy students. The only male participants were 3 of the 4 white physicians. All others were white females, except for 2 Asian-Canadian females (a dietitian and an occupational therapist). All of the team members were experienced in supervising students from their own discipline who joined the unit to train, but had not necessarily formally participated as facilitators in IPE. Participants' descriptions of collaborative roles were

organized into 2 main themes: the pharmacy student as *informant* and the pharmacy student as a *bridge*. A third integrative theme, *engagement,* encompassed how team members described pharmacy students enacting these roles.

Informant

All study participants indicated that pharmacy students training on the unit were a source of medication information. This expertise was sought by participants across the various disciplines. For instance, nurses and dietitians often looked to pharmacy students for clarification about drug properties, such as compatibilities with concurrently administered medications or with nutritional feeds. Drug dosing and drug effects (e.g., interactions, adverse drug reactions) were particularly relevant to the care provided by nurses and physicians (medical students, residents, attending physicians). Collectively, participants were interested in patient-specific treatment updates relevant to discharge planning during multidisciplinary rounds.

Physician participants expressed broader expectations for the collaborative roles of pharmacy students. On this unit, the pharmacy students were expected to join the attending physician, residents, and medical students during bedside rounds and to actively contribute to decision-making. Pharmacy students were regularly viewed as extensions of the medical team who augmented the quality of care decisions. Physicians not only wanted information related to appropriate and evidence-based medication selection and dosing, but also relied upon pharmacy students' holistic view of the patient's drug therapy.

> One of the things I find really useful though is when the pharmacy student is using their expertise to independently identify the important issues and, um, instead of [only] being sort of a resource who I can ask or we can come to with specific questions, they come to me, like, "Have you thought about, you know, evidence-based therapy for heart failure in this person?" (Physician 2)

> I will kind of think of the pharmacy student as more of a closer part of the team, if that makes sense. Like physically attached to us in a way. Like where we are, they should be. (Physician 1)

Bridge

Other health professionals witnessed and capitalized upon the proximity to prescribers described by Physician 1 (see above). From this perspective, the collaborative pharmacy student tendered insight into physician plans and could often offer insight into the rationale underlying a plan. Team members were accustomed to such information-sharing by the pharmacists with whom they worked and projected this expectation onto the trainees under their colleagues' supervision.

> One thing that is really good is if it's a major medication change, they will go and say, "Hey, we changed this because.…" That really helps foster that sharing of knowledge, because the nurse won't necessarily know the rationale of why that happened. (Nurse 2)

Participants expressed greater confidence in the safety and appropriateness of drug therapy when pharmacy personnel were contributing to care. Team members also used the pharmacy student to dispatch or reinforce messages to prescribers. For example, nurses asked the pharmacy students to reiterate documented patient issues or concerns when decisions were being made during physician rounds.

Engagement

Although well acquainted with the professional role of pharmacy students, multidisciplinary team members participating in this study described various levels of engagement with these students on the unit. As previously described, they welcomed these learners in structured interprofessional settings (rounds), but their presence did not appear routine, and nonphysicians did not necessarily expect active participation.

> I have never been introduced to a pharmacy student. They just kind of show up, and you can tell they are a student because they talk less [laughs]. They just kind of sit there quietly. (Occupational Therapist 1)

Participants were pleased when pharmacy students actively sought their knowledge and patient assessment when recommending or monitoring drug therapy, but these were largely reported as anomalous encounters. Although information was freely exchanged for parallel practice, truly interdependent care involving pharmacy students seemed infrequent.

DISCUSSION

On an acute medicine clinical teaching unit where learners from many health professions train, it was reassuring to find that team members did not overlook pharmacy students' contributions to care. Their attendance at bedside and multidisciplinary rounds was recognized, and their drug information knowledge was being accessed. However, we found that descriptions and performance expectations of collaborative roles, especially among nonphysician participants, reflected limited actual engagement or interprofessional practice with pharmacy students.

The interactions with pharmacy students described by participants would not strictly qualify as defined episodes of shared care. Such interprofessional collaborations would entail reciprocal information transmission to jointly arrive

at decisions,[3,11] and these features were not evident from participant interviews. Conversely, the on-campus IPE curriculum is replete with exercises in which pharmacy students and diverse nonphysician trainees (e.g., dietitians, occupational and physical therapists, social workers) actively cooperate to prevent and resolve issues in simulated patient cases.[18] A gap between the formal IPE curriculum modelling interprofessional care and how collaborative skills for pharmacy students continue to develop in the actual clinical learning environment is apparent. In the following paragraphs, we consider the reasons underlying these findings and propose remedies that could be implemented in the hospital learning environment.

In practice, consistent opportunities for genuine sharing of care between team members and mixed-discipline learners can be thwarted by prioritization of competing demands and the limited time available to fulfill intradisciplinary roles.[19] Relationships facilitating cohesive teamwork among health professionals are built over time, and the relatively few weeks that pharmacy students are members of the team may not be sufficient.[20] Lack of interdependence in patient decision-making may also stem from learner relegation (benevolent or otherwise) to the periphery of practice by this community of acute medical care providers.[15] Indeed, although health professionals may readily affirm that their team constituents support common goals of providing safe and effective patient care, they may not view themselves as part of a wider teaching community of practice for pharmacy students or other learners outside their own professional discipline who train on the unit.[21]

Recognizing the untapped potential for interprofessional contributions to learners' training with teams, Stalmeijer and Varpio proposed a framework of Landscapes of Healthcare Practice (LoHCP), promoting "deliberate, intentional and guided boundary crossing".[22] The LoHCP framework aims to situate and reinforce health professional students' membership in a community of patient care (such as an inpatient team), with the students going on to develop interdisciplinary knowledge and a shared understanding of the community's goals, skill sets, conduct, and resources. In the same vein, our data showed how pharmacists on the care team might readily reinforce the developing collaborative care skill set of pharmacy students under their supervision in this particular clinical learning context. Specific examples to drive purposeful mixed-discipline engagement in the hospital care environment begin with the preceptor ritualizing the introduction of new pharmacy students to other team members when they join the patient care unit for training. Preceptors can require that pharmacy students provide an updated nursing assessment when presenting patient cases and explicitly demonstrate that they have identified and consulted relevant team members when proposing a drug therapy and associated monitoring plan. Preceptors may also help facilitate exercises whereby pharmacy students conduct joint patient history-taking or discharge counselling with other health professionals.[23] These interprofessional care assignments may be embedded as mandatory clerkship activities in the experiential curriculum as structured attempts to purposefully extend the design of multidisciplinary cooperation for on-campus IPE activities.

More challenging initiatives facilitating collaborative care and LoHCP may lie beyond those under the control of any individual supervisor or program, such as systems-level adoption of formal interprofessional models of clinical supervision or interprofessional-based clerkships. However, we recognize how the hospital pharmacy preceptor can adopt straightforward and effective strategies to promote integration of their pharmacy students into daily team-based care.[24,25] To optimize such efforts, further workplace-based study is needed to understand the joint care relationships between established team members and pharmacy students. Such inquiry would inevitably encompass the influences of the hospital pharmacist's own positionality on the team and the effects of these influences on the pharmacy students under their preceptorship.

Limitations

The perspectives of the mixed-discipline team members at this large teaching hospital may differ from those of health professionals who serve on teams caring for other inpatient or outpatient populations. Participants' stated collaborative expectations and interactions with pharmacy students may not reflect what might be recorded through direct observation of actual encounters on the unit. We studied collaborative care expectations and experiences with pharmacy students in practice to help inform potential local or discipline-specific changes to IPE; however, team members' interactions with learners from other professions and associated descriptions of collaborative roles may demonstrate greater consistency with authentic shared care.

CONCLUSION

In this study, the mixed-discipline team members' expectations of pharmacy students were bound to the provision of medication information and only infrequently progressed to shared decision-making. Physicians were more likely than others to collaborate with pharmacy students. Challenges to the development of collaborative care skills in the clinical learning environment were evident, but intentional interprofessional exercises assigned by clinical supervisors may support more frequent and more meaningful interactions with team members and promote the interdependent care that is modelled in campus-based IPE activities. Further workplace-based study remains necessary to understand the joint care relationships between established team members and pharmacy students and thus to optimize supervisor- and system-level initiatives.

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