

# Leadership Development in Pharmacy Students: A Literature Review

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## ABSTRACT

**Background:** A deeper understanding of leadership competencies and development of these competencies in pharmacy students are essential to enable future pharmacists to take a more advanced role in patient care and serve as interdisciplinary team members and leaders. Such efforts are also needed to help guide succession planning.

**Objective:** To identify and describe the competencies and experiences involved in leadership development for pharmacy students.

**Data Sources:** A literature review was conducted using the MEDLINE, PubMed, and Google Scholar databases (from inception to November 2023), as well as syllabi from pharmacy leadership courses.

**Study Selection and Data Extraction:** Articles discussing leadership competencies in a health care setting and during pharmacy education and training were included. Competencies and experiences related to leadership development were extracted and organized into categories, with each category given a single descriptor.

**Data Synthesis:** A total of 34 resources were included in the analysis, which revealed the following 7 leadership competencies: leadership knowledge, self-awareness, collaboration, leading change, business skills, systems thinking, and lifelong learning.

**Conclusions:** Pharmacy students can develop their leadership abilities through a variety of experiences and activities aligned with the core leadership competencies identified here. Pharmacy schools in Canada can design and offer leadership placements to help enhance students' leadership skills. This study has highlighted activities that may help prepare pharmacy students for leadership roles in the changing landscape of pharmacy practice.

**Keywords:** pharmacy leadership, pharmacy students, pharmacy practice, leadership development, leadership competencies

## RÉSUMÉ

**Contexte :** Une compréhension plus approfondie des compétences en leadership et le développement de celles-ci chez les étudiants en pharmacie sont essentiels pour permettre aux futurs pharmaciens de jouer un rôle plus avancé dans les soins aux patients et de servir de membres et de chefs d'équipes interdisciplinaires. De tels efforts sont également nécessaires pour aider à orienter la planification de la relève.

**Objectif :** Identifier et décrire les compétences et les expériences à l'œuvre dans le développement du leadership pour les étudiants en pharmacie.

**Sources des données :** Un examen de la littérature a été réalisé à l'aide des bases de données MEDLINE, PubMed et Google Scholar (depuis leur création jusqu'en novembre 2023), ainsi que des programmes de cours de leadership en pharmacie.

**Sélection des études et extraction des données :** Des articles traitant des compétences en leadership dans un contexte de soins de santé et pendant la formation en pharmacie ont été inclus. Les compétences et les expériences liées au développement du leadership ont été extraites et organisées en catégories, chaque catégorie étant dotée d'un seul descripteur.

**Synthèse des données :** Au total, 34 ressources ont été incluses dans l'analyse, qui a révélé les 7 compétences de leadership suivantes : connaissances en leadership, conscience de soi, collaboration, conduite du changement, compétences commerciales, pensée systémique et apprentissage continu.

**Conclusions :** Les étudiants en pharmacie peuvent développer leurs capacités en matière de leadership grâce à différentes expériences et activités alignées sur les compétences de base en leadership recensées ici. Les écoles de pharmacie au Canada peuvent concevoir et offrir des stages de leadership pour aider à améliorer les compétences des étudiants en la matière. Cette étude a mis en évidence des activités qui peuvent aider à préparer les étudiants en pharmacie à des rôles de leadership dans le paysage changeant de la pratique pharmaceutique.

**Mots-clés :** leadership en pharmacie, étudiants en pharmacie, pratique de la pharmacie, développement du leadership, compétences en leadership

## INTRODUCTION

The development of leadership competencies and behaviours in pharmacy students is critical for the profession. While traditional pharmacy education has focused on technical skills and clinical knowledge, the shift toward integrated patient-centred care in Canada necessitates that

pharmacists take a more advanced role in patient care and serve as interdisciplinary team members and clinical leaders.<sup>1-3</sup> This shift highlights the importance of leadership development for pharmacy students, given that they will be involved in leadership activities regardless of whether they hold formal leadership positions.<sup>4,5</sup> Additionally, a lack of

succession planning for pharmacy management in Canada may result in a shortage of effective pharmacy leaders in the future, which further reinforces the need to prepare pharmacy students as future leaders.<sup>6</sup>

Pharmacy education and accreditation bodies in North America have highlighted various leadership outcomes, with pharmacy associations in the United States having emphasized the importance of leadership competency training for pharmacy students since 2013.<sup>4,7,8</sup> The Association of Faculties of Pharmacy of Canada changed the role of “Manager” to “Leader-Manager” as a core competency in the 2017 edition of its educational outcomes for first professional degree programs in pharmacy.<sup>5</sup> The Canadian Pharmacy Residency Board standards also include “Exercise Leadership” as a competency domain.<sup>9</sup> However, the limited number of residency seats in Canada make this training inaccessible to the majority of learners.

To address this gap, the LEADS in a Caring Environment capabilities framework of the Canadian College of Health Leaders outlines desirable competencies and capabilities for successful pharmacy leaders in health care organizations in Canada.<sup>10</sup> This framework, which describes cumulative behaviours for different levels of leadership practice, contains 5 domains: lead self, engage others, achieve results, develop coalitions, and systems transformation.<sup>10</sup> Some faculties of pharmacy in Canada are now using this framework as a guide for leadership courses and experiential learning placements to help prepare pharmacy students as future leaders.<sup>10-12</sup>

This literature review had 2 objectives: first, to provide a comprehensive description of the core competencies, capabilities, and behaviours needed for leadership development in pharmacy students; and second, to identify the skills, experiences, and activities that contribute to the development of these leadership competencies, as outlined in existing literature.

## METHODS

A search of the literature was conducted in June 2020 and updated in November 2023. The search was conducted using the MEDLINE, PubMed, and Google Scholar databases. The search terms used included “leader”, “healthcare”, “pharmacy”, “skill”, “behaviour”, “competency”, “capability”, “attribute”, “activities”, “curriculum”, “experiential”, “education”, “schools”, “graduate education”, “pharmacy schools”, “learner”, and “resident”. The search captured relevant articles published between 1946 and November 2023. Additionally, articles were identified from the citations of articles found in the primary database search.

A single reviewer (A.T.) reviewed the titles and abstracts of articles retrieved and performed initial full-text screening of articles deemed suitable for further consideration on the basis of title and abstract. The same reviewer

also determined which articles would be included for data extraction and analysis. Articles were included if they met the following inclusion criteria: English-language articles that discussed leadership competencies in a health care setting and English-language articles that specifically discussed pharmacy education and training. Grey literature, including sample syllabi, was included to capture a more comprehensive view of the current landscape of leadership development in Canadian pharmacy schools.

Included articles underwent a full-text review to extract definitions of and competencies associated with leadership development in pharmacy students, along with activities completed or thought to support leadership development. The collected data were then organized into categories based on similarities, and each category was given a single competency descriptor. For example, the descriptors of “advocate”, “innovation”, and “agent of change” were grouped under “leading change”.

## RESULTS

The database search yielded a total of 236 articles. Following review of the titles and abstracts, 105 articles were identified for full-text screening. Ultimately, 34 resources that discussed competencies of leadership development relevant to pharmacy students were included for data extraction and analysis: 13 cohort studies,<sup>4,13-24</sup> 6 qualitative studies,<sup>7,8,25-28</sup> 2 surveys,<sup>29,30</sup> 3 guidance documents,<sup>31-33</sup> 2 sample syllabi (one from the United States<sup>34</sup> and the other from Canada [Anwar M. *Pharmacy leadership placement outline*. University of Alberta, Faculty of Pharmacy; 2020. Experiential course syllabus created for Pharm 515/557 students on elective leadership placements]), 4 commentaries,<sup>11,12,35,36</sup> and 4 literature reviews.<sup>37-40</sup> Seven consistently represented leadership competencies emerged through review of the data: leadership knowledge, self-awareness, collaboration, leading change, business skills, systems thinking and lifelong learning.

To develop leadership competencies in pharmacy school curricula, a variety of activities and experiences were used, including workshops, book clubs, retreats, and self-reflection journals.<sup>7,13,15,16,18,19,23</sup> Many of the described activities were each found to support the development of multiple competencies. Notably, articles that described course or program evaluations showed that students benefited most from 3 specific activities: validated personality assessment tools identifying their strengths and limitations,<sup>4,7,8,13,15,19,23</sup> exposure to current pharmacy leaders,<sup>7,8,14-16,19,23</sup> and practising leadership skills and behaviours.<sup>4,7,8,14-16,18-21,26,33</sup> The following sections summarize the 7 core competencies and approaches used to develop leadership competencies in pharmacy students.

### Leadership Knowledge

Pharmacy leaders are expected to possess a sound understanding of leadership history, theory, and styles and to have

the ability to compile and organize their knowledge and skills over the course of their careers.<sup>7,8</sup> In the United States, 26 leadership instructors used the Delphi method to identify 4 competencies related to leadership knowledge that ought to be included in pharmacy student curricula.<sup>8</sup> The 4 competencies were explaining the importance of leadership in pharmacy; recognizing that leadership can come from those with or without formal title designations; distinguishing between leadership and management; and describing the characteristics, behaviours, and practices of effective leaders.<sup>8</sup> Various methods have been proposed to develop these skills, including didactic teaching, journal clubs, small-group discussions, leadership speaker sessions, retreats, mentorship, simulations, and shadowing a leader.<sup>4,7,11-16,19-21,27,29,39</sup> One study described observing students as they modelled effective leadership behaviours during an advanced pharmacy practice experience to help demonstrate the successful integration and application of didactic leadership coursework into practice.<sup>27</sup> Thus, leadership knowledge can be acquired, integrated, applied, and demonstrated in practice in various ways during the leadership development journey.

### Self-Awareness

Self-awareness is the conscious recognition of one's values, preferences, motivations, and beliefs, as supported by various sources.<sup>4,8,39,40</sup> Traynor and others<sup>25</sup> suggested that self-aware leaders exhibit credibility, an understanding of their strengths and weaknesses, integrity, and courage, and they use these skills to connect with others. Self-awareness enables leaders to align their goals with those of their organization, work more effectively toward mutual objectives, and focus on personal growth and development.<sup>8,35</sup>

Several approaches exist to foster self-awareness in students. One study aimed to develop personal leadership styles through small-group reflection and discussion.<sup>4</sup> Students reported learning more about themselves and their leadership abilities, as well as learning how to describe their own particular leadership style.<sup>4</sup> Similarly, an examination of an elective leadership course found that self-awareness insights helped students develop their leadership potential and effectiveness.<sup>13</sup> Three additional studies on leadership courses for pharmacy students found that self-awareness tools, such as the Myers-Briggs Type Indicator, the Barrett Values Assessment, StrengthsFinder, and the Kolb Learning Style Inventory, provided valuable insights into character, values, and communication styles and also helped cultivate empathy for others.<sup>7,12,27</sup> Therefore, self-awareness can help students discover their potential as leaders.

### Collaboration

Collaboration skills are widely acknowledged as essential competencies for pharmacy students to cultivate during their leadership education.<sup>4,7,8,21,31,36,37,40</sup> In health care,

effective collaboration is critical to communicating effectively, motivating peers, leading a team, working within interdisciplinary teams, and contributing positively to organizations.<sup>8,29,36,39</sup> According to a recent rapid review, interdisciplinary team-based training has been used to help develop collaboration skills—such as establishing the roles and responsibilities of team members, crafting a shared vision, resolving conflicts, solving problems, and managing resources—among practising health care professionals and students, including pharmacists and pharmacy students.<sup>39</sup> Furthermore, clearly defined goals, transparent communication, diverse relationships, shared leadership, and ongoing mentorship related to a shared challenge helped to enhance the skills needed to lead interdisciplinary teams.<sup>24</sup> Pharmacy education programs aim to develop students' collaboration skills through team projects, group study, and professional networking.<sup>8</sup>

According to Janke and others,<sup>8</sup> leadership activities that focus on teamwork should address team dynamics, the building of relationships, conflict resolution, and accountability. Chesnut and Tran-Johnson<sup>4</sup> suggested using the FISH! Philosophy and the Student Leadership Challenge to foster relationship-building among pharmacy students enrolled in a leadership development course. In another study, students' reflections indicated that these activities could help them to appreciate the importance of building relationships within organizations and when networking.<sup>13</sup> Pharmacy students can develop collaboration skills through team projects, small-group discussion, and reflection on leadership models.<sup>4,7,12,27</sup> At the University of Alberta, some elective leadership placement experiences (including the 2020 experiential course for Pharm 515/557 at the University of Alberta, noted earlier) offered a team-based approach for multiple students (peer-assisted and/or near-peer learning) to rotate among different co-preceptors.<sup>12</sup> These novel learning models enhanced opportunities for collaboration through learning as a group, receiving and giving feedback, creating an environment for psychological safety, and deepening professional relationships.<sup>12</sup> It is essential to focus on both working as a member of a team and learning how to lead teams effectively.

### Leading Change

Pharmacy students pursuing leadership roles are expected to develop the ability to be agents of change, which involves identifying opportunities for growth, initiating change, and contributing to the transformation of systems within their respective organizations.<sup>8,36</sup> Embracing change and promoting innovation can help student leaders support their organizations' strategic objectives.<sup>5,8</sup> However, to successfully lead change, students must understand organizational culture, build credibility, and foster diverse relationships.<sup>7,8,13,31,40</sup> Vest and Amerine<sup>36</sup> suggested that the transformation of knowledge and connections from broad to focused and deep

can support pharmacy leaders in managing change in terms of processes, strategy, culture, and structure.

Pharmacy student leadership programs often expose students to change concepts through discussions and projects that focus on change management and implementation. For example, students may be asked to craft a change vision and action plan as part of a project.<sup>4,13,19</sup> By discussing change management concepts and encouraging students to challenge the status quo, pharmacy programs can help students develop the competency of leading change.<sup>4,13,15,26</sup> Moreover, participating in and spearheading specific organizational change projects during leadership placements allowed students to apply change principles from the literature into practical action, delivering tangible value to wider pharmacy teams.<sup>11,12</sup>

### Business Skills

Pharmacy students require business skills to manage the financial resources of health care systems and to support positive patient outcomes.<sup>15,23</sup> These skills enable future pharmacy leaders to evaluate operational efficiency, optimize team structures, streamline workflow processes, and engage in complex negotiations to ensure that resources are optimally allocated to meet patient care needs.<sup>23</sup>

Augustine and others<sup>23</sup> recommended that pharmacy graduates develop proficiency in interpretation of financial reports, inventory management, definition of key performance indicators, and marketing. It is essential to introduce these skills early in training to prepare pharmacy students for management and leadership roles.<sup>14,15,23,29</sup> Lee and others<sup>11</sup> described business skills such as financial management, human resources, application of the principles of effective management, and medication-use systems as learning outcomes for a pharmacy leadership placement in a hospital environment. Activities related to the development of business skills, such as business case development, shift scheduling, attendance at professional meetings, and negotiation of job offers, can also be incorporated into experiential placements to equip pharmacy students with a comprehensive set of skills to manage and lead in various health care settings.<sup>14-16,19,22,23,36</sup>

### Systems Thinking

Systems thinking is a crucial skill for pharmacy students to develop as they enter leadership roles within the health care system.<sup>8</sup> Systems thinking involves understanding the complex and interconnected relationships within an organization, as well as the broader health care system.<sup>8,29,31,36,40</sup> To enact positive change, pharmacy leaders must have a thorough understanding of organizational culture and decision-making processes and must be able to identify key stakeholders and anticipate the impacts of change on various groups within the organization and beyond.<sup>4,8</sup> In particular, by working on organizational challenges during

leadership placement experiences, students can demonstrate systems thinking skills that will help to enhance pharmacy practice in particular and health care more generally.<sup>11,27</sup>

Shadowing a pharmacist who is a known change agent or leader can be a valuable experience for pharmacy students, as it gives them the opportunity to observe and learn from experienced practitioners who have successfully navigated cultural, historical, and political challenges to bring about positive change within their organizations.<sup>4</sup> Direct observation can help students develop a more nuanced understanding of how to achieve results within complex health care systems, as well as gaining insight into the various strategies and approaches that can be employed to effect change.<sup>4</sup> Participating in a leadership placement also allowed students to gain a deeper understanding of and appreciation for the role of a pharmacist in the health care system beyond the clinical practice setting.<sup>12</sup> Ultimately, by cultivating a systems thinking mindset and gaining exposure to real-world scenarios, pharmacy students can better prepare themselves to take on leadership roles and contribute to positive change within the health care system.

### Lifelong Learning

Pharmacy students must be committed to ongoing professional development, particularly if they wish to become leaders who can drive change and innovation in the field of health care.<sup>25</sup> According to 2 studies, leadership development requires a lifelong commitment to self-efficacy, reflection, mentorship, growth, and advocacy.<sup>25,29</sup> Van Diggel and others<sup>40</sup> proposed that lifelong learning strategies, such as receiving and incorporating feedback, can help in identifying and cultivating desirable leadership behaviour and habits. Successful pharmacy leaders have reported that their leadership style was mostly influenced by experience.<sup>26</sup> As such, learning experiences ought to be designed to allow students to hone their leadership skills, reflect on their performance, and receive constructive feedback to improve their abilities,<sup>8</sup> for instance, by offering preceptor mentorship, coaching, encouragement, and the creation of a psychologically safe environment that supports pharmacy student leaders to develop their authentic leadership style.<sup>12</sup> Therefore, students should be exposed to safe environments where they can expand their leadership capabilities, receive feedback, and continue to cultivate their leadership style throughout their careers.

Information is now emerging on formal experiential leadership learning opportunities for pharmacy students in Canada.<sup>11,12,30</sup> According to a survey conducted by Ho,<sup>30</sup> some pharmacy schools offer administrative/management leadership placements to help develop a knowledge base in administration, management, and/or leadership. Although such rotations were thought to support the development of leadership skills, it was not deemed necessary to mandate non-direct patient care rotations.<sup>30</sup> However, the long-term

professional impact and outcomes of leadership placement experience remain unclear.

## DISCUSSION

Seven core leadership development competencies emerged from this literature review: leadership knowledge, self-awareness, collaboration, leading change, business skills, systems thinking, and lifelong learning. In their systematic review, Reed and others<sup>38</sup> identified 16 leadership competencies, describing them as a combination of knowledge, skills, abilities, and other characteristics. Several of the competencies overlapped, such as leadership characteristics and leadership knowledge, social insight and systems thinking, relationship-building and collaboration, self-regulation and self-awareness, persuasion and leading change, and learning orientation and lifelong learning. Although Reed and others<sup>38</sup> did not explicitly mention business skills, they noted the importance of negotiation, strategic planning, decision-making, and personnel management abilities.

Our literature review identified broad overarching competencies, such as self-awareness and leading change, whereas the review by Reed and others<sup>38</sup> was more specific in highlighting skills such as relationship-building and persuasion, which are necessary for leading change. Additionally, their research illuminated characteristics such as service orientation, team orientation, and ethical orientation that were not apparent in our review.<sup>38</sup> Moreover, differences in the depth and breadth of the identified competencies emerged between our research and that conducted by Reed and others.<sup>38</sup>

In our literature review, we aimed to identify the methods used to foster leadership competencies in pharmacy students. We found that numerous activities were employed to develop multiple competencies simultaneously. For instance, small-group discussions and networking activities were commonly applied to enhance leadership knowledge, collaboration, and systems thinking.<sup>4,13,15</sup> Additionally, strength-based assessments and direct observation of current leaders were valued by students as effective means of cultivating self-awareness and leadership knowledge.<sup>12</sup>

Although the focus of this review was on 7 core competencies, our analysis also revealed the emergence of other critical leadership skills, including emotional intelligence, advocacy, and strategic planning. Although these competencies were not examined as extensively as the core 7 in our review, it is important to acknowledge their significance in the context of pharmacy leadership. Of particular interest is the concept of emotional intelligence, which encompasses the ability to understand, use, and manage emotions when reflecting on one's own actions and interacting with others.<sup>17,41</sup> A high level of emotional intelligence relies heavily on self-awareness, self-management, social awareness, and relationship management, which are

key building blocks for effective leadership.<sup>17,41</sup> Smith and others<sup>17</sup> observed an increase in Emotional Intelligence Appraisal scores among 3 cohorts of pharmacy students before and after completing an optional leadership degree program. As such, it is essential for students to experience and nurture these competencies in an educational environment, as they provide a foundation for future growth and development as effective pharmacy leaders.

Valuable insights can be gleaned from the motivations, behaviours, skills, and trajectories of current pharmacy leaders to help inform competency and program development for pharmacy students. In a recent study, Gaballa and others<sup>42</sup> outlined key themes among pharmacy leaders, including personal characteristics, support systems, driving forces, and success predictors. These authors identified certain personal attributes as being important, such as effective communication, conflict resolution, negotiation skills, genuine professional interest, and a belief in one's leadership potential, suggesting opportunities for further education and training in these domains.<sup>42</sup> Leadership supports were described as mentors and a network of peers who helped uncover current pharmacy leaders' potential, encouraged the exploration of leadership roles, and withheld judgment. Drivers for growth as a leader came from a desire to enact positive change and a principled response to situations. Furthermore, positive reinforcement mechanisms encompassed optimism in the face of setbacks, the presence of champions and believers, an ability to find joy in early accomplishments, and organizational commitments to aid leaders through failures. Predictors of success in leadership roles were characterized by avoiding over-reliance on charisma or charm, preferring data-driven over instinct-based decision-making, wanting to understand others rather than to exert control over them, and demonstrating holistic thinking coupled with strategic vision.<sup>42</sup> As such, understanding the multifaceted aspects of growth gleaned from current pharmacy leaders can help to shape educational pathways for cultivating skills and experiences in future pharmacy leaders.

It is important to recognize that leadership development is a continuous process that evolves throughout one's professional career. No single course, workshop, or lecture can fully prepare students for leadership roles.<sup>18</sup> Rather, it is a journey that requires consistent practice, dedication, and intentional effort. Interpersonal and relational skills, which are essential for creating change and exerting influence, are particularly nuanced and challenging to master, especially within complex hierarchical structures such as those found in integrated hospital networks.<sup>18,23,26</sup> Therefore, the mastery of leadership competencies requires a sustained commitment to lifelong learning, practice, and development.

This review was limited by several factors. First, the search strategy might not have encompassed all terms used to describe pharmacy leadership development; furthermore,

we included only English-language materials. As such, the search may not have captured all of the relevant literature. Second, it is worth acknowledging that the study of leadership is not an exact science, which limits our ability to draw definitive conclusions. For example, there are sparse quantitative data validating personality profiles and limited data comparing those who do and do not participate in leadership development experiences and the subsequent leadership outcomes. Additionally, the initial search, the title and abstract review, and the inclusion of articles were performed by one author, which may have introduced bias. As such, all data collection and analysis were completed from an individual perspective, without participation by or consensus from another reviewer, which could have influenced the results.

## CONCLUSION

This literature review revealed 7 core competencies and specific activities required to develop leadership skills in pharmacy students. While some Canadian pharmacy schools offer elective leadership placements, the impact of these placements on learners' careers and long-term outcomes remains under-reported. Further investigation is needed to explore the effectiveness of leadership development experiences in pharmacy schools for cultivating successful future pharmacy leaders. Opportunities to pave the way for a new generation of pharmacy leaders, equipped with the skills and vision to transform the health care system and positively impact patient lives, are upon us.

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