

Original Research

The assessment of mentorship programs on pharmacy students' leadership roles and performance in experiential education

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Received (first version): 10-Apr-2023

Accepted: 11-May-2023

Published online: 02-Aug-2023

Abstract

Objective: The purpose of this study was to determine the perception and to assess the impact of mentorship programs on students' performance and development in pharmacy education during experiential education. **Methods:** Students from all the schools of pharmacy and from different academic years across pharmacy programs in Lebanon were included. The study involved a survey that included a variety of questions and of different structures including the use of Likert-scale questions and multiple-choice grids that assessed the aim of this study. **Results:** Out of 260 students, the results indicated that 228, 227, and 219 students agreed/strongly agreed that clinical mentors in experiential education help students develop communication skills, promote their professional development, and develop leadership skills, respectively. In addition, 239, 224, 217, and 217 students agreed/strongly agreed that mentors influence students in advancing performance in experiential training, pursuing leadership positions, promoting general academic performance, and engaging in extracurricular activities, respectively. **Conclusion:** Mentorship is crucial for students' performance in experiential education and supports them to take on leadership roles to become prospective pioneers of the pharmacy profession. Mentoring programs are perceived to have positive outcomes which supports the need to evaluate their impact on students.

Keywords: mentorship; leadership; pharmacy students; experiential education; assessment

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INTRODUCTION

Mentoring is a key contributor to promoting the mentee's career success and providing psychosocial support.¹⁻³ It aims to reduce the gap of experience and skills-set between the mentor and the mentee, where the mentor recognizes the mentee's skills, attributes, and potentials then creates a nurturing relationship that leads to the mentee's full maturation and development.⁴ Mentoring is widely practiced in academia and occurs in two main forms: informal and formal mentoring.⁵⁻⁸ Informal mentoring ensues when two individuals share the same interests and ideologies, leading to a spontaneous mentorship.^{5,6} It is not established, governed, or structured by an organization, which is in contrast to formal mentoring.^{6,7} On the other hand, formal mentoring assigns individuals to their mentors based on similar interests and ideologies in a pre-determined mentor-mentee relationship.⁵ Mentors need to provide personal, emotional and professional support to mentees, give constructive feedback on performance, and advocate for the mentee in the workplace.^{4,5,9-11} Internal mentors from within an institution are generally preferred due to a pre-existing relationship with a potential mentee, in addition to the mentor's understanding of the organization's history, culture, policies, and processes.¹² However, external mentors from other institutions/agencies may be required for the growth and prosperity of senior faculty members and administrators.¹²

In pharmacy education, clinical preceptors/mentors are required to fulfil many different roles in experiential education that include but are not limited to, serving as mentors, coaches, communicators, collaborators, facilitators, leaders,



researchers, and clinical experts.¹³⁻¹⁵ Clinical mentors also aim to provide guidance on effective strategies to handle challenges that interns (or mentees) may face during their practice, train them on being actively engaged in the internship, keep an eye on potential opportunities, and prepare them to advance and develop in their practice by providing feedback to improve their performance.^{13,16-18} The American Association of Colleges of Pharmacy (AACP), American Society of Health-System Pharmacists (ASHP), and American College of Clinical Pharmacy (ACCP) developed competency standards in pharmacy education that target the advancement of students and clinical pharmacists.¹⁹ All three associations share common grounds on several areas of the established competency frameworks, which include direct patient care, pharmacotherapy knowledge, professionalism, and continuing professional development.¹⁹ Clinical mentors play a crucial role in establishing these competencies by supporting, teaching, assessing, and guiding students during their experiential training.²⁰

Mentorship programs should be evaluated periodically to assess the outcomes and improve the general structure for future mentorships.¹² The main points that should be evaluated include the mentee's performance, quality of the mentor-mentee relationship, frequency of meetings, and mentor job satisfaction.^{12,16,21}

In Lebanon, first- and second-year pharmacy students complete pharmacy practice experience (PPE) under the supervision of the Order of Pharmacists of Lebanon (OPL). The OPL makes sure that students in the first two years are attending their practice sites and fulfilling the required number of practice hours, however no mentoring guidelines are in place. Third, fourth, and fifth-year students of the Bachelor of Pharmacy (BPharm) program and Doctor of Pharmacy (PharmD) students complete PPE courses under the supervision of both their school and the OPL.²² In this stage of their education, students are required to meet the learning objectives and complete modules set by their respective university without the presence of formal mentoring programs. To our knowledge, a gap in research exists regarding the status and perceptions towards mentorship in pharmacy education in Lebanon and the MENA region. The purpose of this study was to determine the perception and to assess the impact of mentorship programs on students' performance and development in pharmacy education during experiential training. It also aimed to determine mentors' influence on students to take on leadership roles.

METHODS

This was a descriptive cross-sectional study on a sample of pharmacy students attending pharmacy schools in Lebanon. Data collection took place through an electronic survey that was shared by email and WhatsApp groups in Lebanon that included pharmacy students. A snowball sampling approach was followed in which participants were asked to share the survey (voluntarily) with other pharmacy students, to reach the highest number of responses possible. Multiple reminders were sent on the groups for participants to complete the survey, and its link was opened from the 1st of May 2021 to the

12th of June 2021, a period of 43 days.

Pharmacy students from all five universities in Lebanon that have a pharmacy program, including Beirut Arab University (BAU), Lebanese American University (LAU), Lebanese International University (LIU), Lebanese University (LU), and University of Saint-Joseph (USJ) were invited to take part in the study. Students were distributed among all years of study within the BPharm and the PharmD programs, knowing that in most of these universities the PharmD program is a one-year add-on (sixth year) to the five-year BPharm program. Students who did not complete any pharmacy practice supervised by their school or the OPL were excluded from this study.

The survey was administered through Google Forms and consisted of three sections. The first section gathered general demographic information of the participants in addition to their perception of a mentor's role and the goals of mentorship. In the second section, students were asked if they had mentors and to describe their relationship with their mentor if they had one. In addition, students were asked about their preference of having internal and/or external mentors. Then, a set of Likert-Scale questions were asked to assess the influence of mentors on students to engage in extracurricular activities, promote academic performance, and advance skills acquired in experiential training. A multiple-choice grid was used to assess the students' perspectives on mentorship, and to assess the extent of agreement/disagreement to which participants perceive as possible criteria to match a mentor with a mentee. Another multiple-choice grid was used to assess the extent to which students agree/disagree that clinical mentors (preceptors) help students develop a set of skills in experiential education. The third section focused on the assessment and evaluation of the mentoring programs in experiential education in the pharmacy program. A set of Likert-Scale questions addressed the extent to which participants agreed/disagreed to the importance of evaluating the students' competency development in experiential learning. Participants were also asked to choose their top three points necessary to be evaluated in experiential training. A similar approach was used to collect responses of participants about their top three learning outcomes that need to be evaluated at the end of a mentoring program in experiential training. The final item of this section aimed to identify the most suitable method to assess the outcomes of a mentoring relationship.

Data was analysed using SPSS version 25. Descriptive statistics was used to evaluate the outcomes. Data was expressed by their percentages and frequencies for categorical variables. The comparison between the outcomes utilized the comparison of percentages and frequencies.

This study was approved by the Institutional Review Board (IRB) of the Lebanese International University (2020RC-033-LIUSOP).

RESULTS

Two-hundred and sixty pharmacy students were enrolled in this study including 218 females (84%) and 42 males (16%) distributed among all five schools of pharmacy in Lebanon



and among all academic years within the BPharm and PharmD programs. One hundred and sixteen (44%) students were from LIU, 59 (23%) students from BAU, 36 (14%) from LAU, 26 (10%) from LU, and 23 (9%) from USJ. As for the distribution of students among the first, second, third, fourth, fifth, and PharmD years, the results showed that 47 (18%), 37 (14%), 57 (22%), 57 (22%), 36 (14%), and 26 (10%) students in these academic years, respectively. The perception of students in the pre-professional years (1st and 2nd year) was found to be similar to those in the professional years (3rd, 4th, 5th, and PharmD) as was seen by the similarity of percentages when analysed, therefore they were combined in the analysis.

One-hundred and twenty-four (48%) students did not have a mentor, while 136 (52%) students had a mentor at their school. The students' responses on the perception of mentoring in those who have a mentor and those who do not have a mentor were similar, therefore, the results were combined in the analysis. Of those who have a mentor, 102 (75%) reported having a formal mentorship rather than an informal one. As for the students' perspective on the extent of which mentoring occurs at their school, 52 (20%) students rated it as low, 157 (60%) students rated it as medium, and 51 (20%) of students rated it as high.

Fifty (19%) students reported that they prefer internal mentors from within the school/institution, 13 (5%) students preferred external mentors, while 197 (76%) students preferred having both.

The influence of mentors on students in advancing performance in experiential training, promoting general academic performance, engaging in extracurricular activities, and pursuing leadership skills is described in Figure 1.

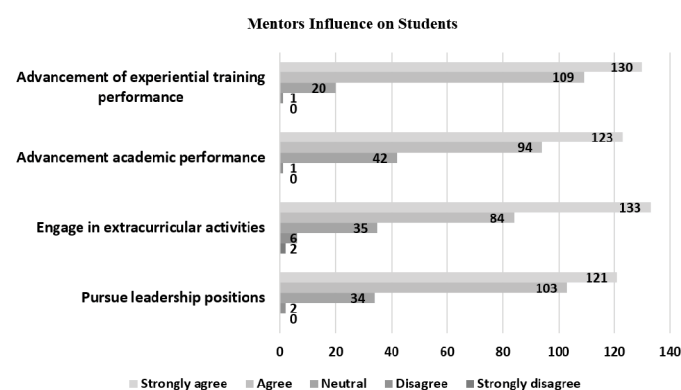


Figure 1. Students' perceptions of mentor's influence

More than half of the students disagreed or strongly disagreed that a mentor should be matched to a mentee based on same gender and/or religion. On the other hand, more than half of the participants agreed or strongly agreed that mentors should be paired with mentees based on same interests and/or values (Table 1).

Figure 2 describes the students' responses about the impact of clinical mentors on helping students to develop a set of skills in experiential training. The findings indicated that the majority of the students agreed or strongly agreed that clinical mentors in experiential education help students develop communication and leadership skills, seize opportunities, deal with challenges at the practice site, implement theoretical knowledge in practice, provide constructive feedback, and promote professional development during experiential learning.

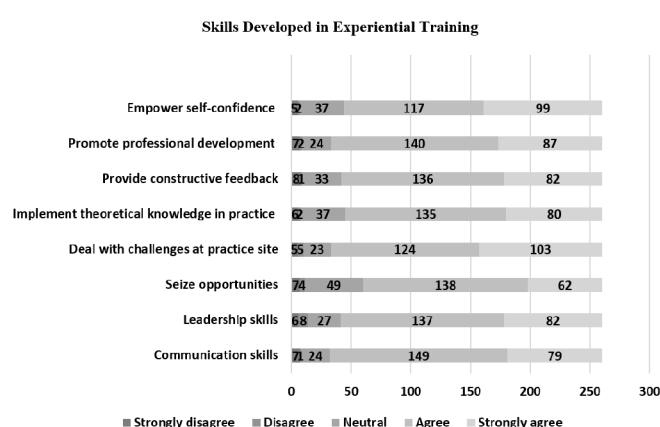


Figure 2. Students' perspective on skills developed by students in experiential training under the guidance of a clinical mentor

Furthermore, two hundred and eight (80%) students agreed or strongly agreed that the objectives of a mentoring relationship should be assessed periodically, while 43 (17%) students were neutral, and only 9 (3%) students disagreed or strongly disagreed. On the other hand, 231 (89%) students agreed or strongly agreed that the impact of clinical mentors on students' competency development during experiential training should be evaluated, while 26 (10%) students were neutral, and only 3 (1%) students disagreed or strongly disagreed about this. Most of the participants chose mentee's performance, quality of the relationship, and mentor's performance as the top three points, respectively, that need to be evaluated in a mentoring program in experiential training (Figure 3).

Table 1. Students' perspective of matching mentors with mentees					
Matching Mentors with Mentees					
	Number of Strongly Disagree Responses (%)	Number of Disagree Responses (%)	Number of Neutral Responses (%)	Number of Agree Responses (%)	Number of Strongly Agree Responses (%)
Gender	80 (31)	77 (29)	86 (33)	10 (4)	7 (3)
Religion	121 (47)	71 (27)	55 (21)	8 (3)	5 (2)
Interests	14 (5)	23 (9)	54 (21)	114 (44)	55 (21)
Values	18 (7)	22 (8)	75 (29)	91 (35)	54 (21)

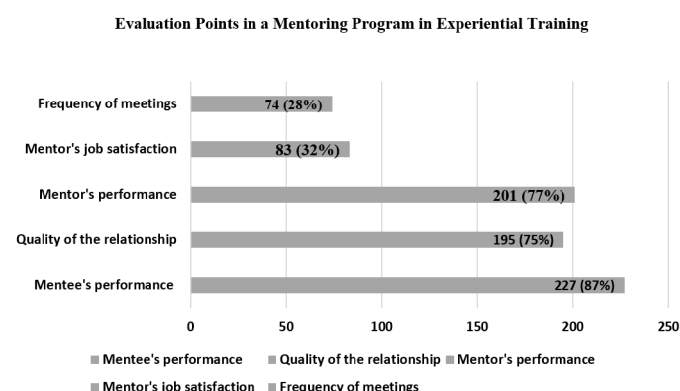


Figure 3. Students' perspective on evaluation points in a mentoring program in experiential training

The top three learning outcomes that need to be evaluated at the end of a mentoring program in experiential training included demonstrating skills of self-awareness, self-assessment, and self-development, followed by engaging in innovative activities by using creative thinking to envision better ways of accomplishing professional goals, and exemplifying the professional values of pharmacy (Figure 4).

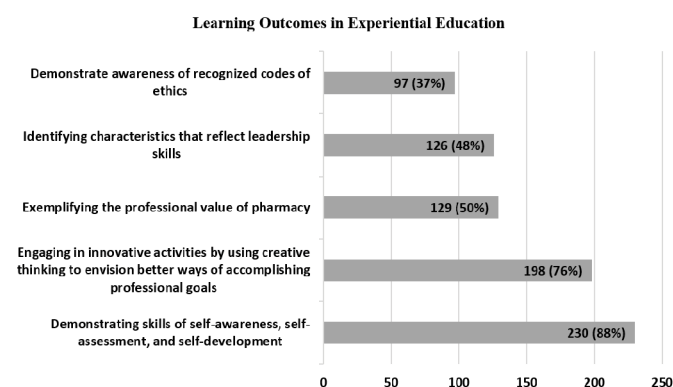


Figure 4. Students' perspective on learning outcomes in experiential education

Moreover, most of the students (64%) reported that conducting a mentor/mentee interview with an administrator is the most suitable method for assessing the outcomes of a mentoring program, while 18 (7%) students chose the written format and 76 (29%) students chose the questionnaire format.

Additionally, the majority (185 students) of respondents identified a mentor as a leader, while 182 students chose a coach, 147 students selected role model, and 86 students chose evaluator. The results showed that 68 students identified a mentor as all four traits combined. In addition, the students were given nine items to select the top five goals in a mentoring relationship between a mentor and a mentee. Two hundred and nineteen students selected that the mentor provides professional support to a mentee, while 194 (75%) students said provide guidance, 183 (70%) students chose improve the mentees skills and attributes, 180 (69%) students picked give constructive feedback, 136 (52%) students selected provide emotional support, 129 (50%) students went for nurture overall development, 104 (40%) students chose promote

career success, 79 (30%) students selected reduce the gap of experience, and 76 (29%) students said promote the mentee in the workplace.

DISCUSSION

Finding that many students don't have mentors shows the importance of developing well-structured mentoring programs with clear guidelines at schools of pharmacy in Lebanon. Our findings are in alignment with several studies that emphasize the need for developing structured mentoring programs with clear guidelines and objectives.^{12,23,24} Our sample represents around 11% of pharmacy students in Lebanon which can illustrate some pharmacy trends in Lebanon in terms of gender and university distribution.

Several studies align with our findings that those who are mentored feel inspired to continue with the legacy of mentoring others.²⁵⁻²⁸ The results are further supported by showing that students who experienced mentoring motivated them to learn, inspired them to follow their goals, and improved their general well-being.¹²

Most students preferred being mentored by both internal and external mentors which is advantageous because while internal mentors are familiar with the institution's policies and objectives, external mentors can provide different experiences and decrease the chances of bias in mentoring relationships, as described by Law et al.¹²

Moreover, the finding that most students agree or strongly agree that mentors are vital in advancing performance in academics, practice, extracurricular activities, and leaderships roles further proves the significance of mentoring programs. In Frei's study, it was pointed out that mentoring contributes to the advancement of students even beyond the framework of a course, which is in alignment with the findings of this study.²⁹ Several studies reported that mentoring in experiential education is significant for the advancement of pharmacy practice, intending to develop highly competent pharmacists that will serve to optimize therapeutic plans and foster patient care through effective interprofessional collaboration within the healthcare team, which is in agreement with our findings.^{19,20,30}

Additionally, students reported that mentors should be matched with mentees based on same values and/or interests, and not gender. The Lebanese population is very diverse regarding the various religions practiced, however the students reported that religion is not a significant factor to pair a mentor to a mentee. Moreover, this supports diversity in mentorships, and does not leave a certain gender or religious group as underprivileged or discriminated against regarding their chances of being mentored, perhaps opening venues for diversity and inclusiveness in the mentorship experience. Furthermore, Abudayyeh et al mentioned that female mentees may experience greater satisfaction in reaching their goals when matched to a female mentor, which contradicts the findings in this study even though most of the participants were females.³¹

The results have also indicated that most of the students agreed/strongly agreed that clinical mentors help students develop key skills that are necessary in experiential training. Engle et al mentioned that direct patient care is a crucial competency to optimize health outcomes, which comes in agreement with the competencies identified in this study.¹⁹ McDonough and Bennett pointed out that it is significant for students to enhance their communication skills in practice to optimize patient counselling and interprofessional collaboration, which supports our findings.³² Enhancing leadership skills and empowering self-confidence provides competent leaders that will help in optimizing patient care and advancing the profession. Yue et al and Engle et al pointed out that professionalism requires exhibiting the highest standards of integrity, honesty, objectivity, and respect when dealing with patients which is consistent with our findings.^{19,20} Training students to deal with challenges in practice enhances their problem-solving and critical thinking skills. All these skills and their significance in experiential education illustrate the crucial role clinical mentors exhibit in training students during their pharmacy practice experience.

Most of the participants prioritized that the mentee's performance, quality of the relationship, and mentor's performance as the top three points to be evaluated in a mentorship. Learning outcomes should be measured and evaluated in mentorships during experiential training because it is fundamental to assess that they are met, to enhance students' competencies in pharmacy practice. 'Demonstrating skills of self-awareness, self-assessment, and self-development' was reported as the most important learning outcome to acquire in experiential training and aligns with the continuing professional development competency highlighted by the ASHP, ACCP, and AACCP competency frameworks.¹⁹ Apart from that, Metzger et al presented findings of an AACCP survey that the main points that need to be evaluated in a mentoring program include the mentee's performance, mentor-mentee relationship, and mentoring program advancement and productivity, which support the findings presented in this study.¹⁶

Several factors contribute to the effective assessment of mentoring programs. For example, as indicated in Deutsch and Spencer's study, the duration of the mentorship and frequency of meetings are used to assess the quality of the mentoring relationship, which are also in agreement with our findings.²¹

It was reported that the top goal of a mentorship is the professional development of the mentee, which is achieved by having a mentor that exhibits outstanding attributes that collectively serve in the mentee's best interests. Zeitoun et al and Ramani et al pointed out that clinical preceptors are required to fulfil many different roles such as mentors, collaborators, facilitators, leaders, researchers, and clinical experts, which come in alignment with the findings of this study.^{13,14} Several studies come in agreement with the goals of a mentoring relationship reported by students in this study such as providing personal and professional support to mentees and advocating for the mentee in the workplace.^{5,10,11,27,33} The findings in studies conducted by Deutsch & Spencer, DuBois & Neville, and Grossman & Rhodes pointed out that strong emotional

connection between the mentor and mentee provides grounds for the advancement of the mentee's competency and value, making it important to assess the connection between the mentor and the mentee, since having a close relationship also fosters the quality of the mentorship.^{21,34,35} The latter findings come in agreement with the findings in this study that mentors provide emotional support and nurture the overall relationship with the mentee to promote the mentee's success in their prospective professional careers.

Regarding the method of evaluation, the finding of interviews being favoured over the questionnaire and written form in all three groups could be due to the opportunity for more interaction and elaboration of ideas that comes with this method. Furthermore, this supports that having a conversation (i.e. interview) is preferred instead of a self-reflection (i.e. questionnaire or written form) to discuss such important topics as mentorship outcomes, reflecting students' serious interest in being mentored and benefitting from this relationship.

One major strength of this study is the inclusion of pharmacy students from all pharmacy schools and academic years in Lebanon to assess the impact of mentorship programs on students' performance and development in pharmacy education and experiential training.

On the other hand, one of the limitations is the snowball sampling technique, it may have been associated with a possible risk of selection bias. However, it is believed that this bias is minimized as our sample included students from all schools of pharmacy in Lebanon. In addition, since data collection was done by a self-administered questionnaire, information bias is possible. With this initial investigation, and the findings exploited about mentorship, it is warranted to further explore the attributes of mentor-mentee relationship among Lebanese pharmacy students using a refined analysis and a more purposeful survey.

CONCLUSION

In conclusion, mentoring programs are crucial for students' performance in experiential education and support students to take on leadership roles and being prospective pioneers of the pharmacy profession. This study may serve as starting point for developing well-structured, formal mentoring programs with clear guidelines in schools of pharmacy in Lebanon that are dedicated to advancing pharmacy education and practice.

AUTHOR'S CONTRIBUTIONS

Mohamad Rahal: Original draft, Supervision; Naser Z. Alsharif: Validation; Samar Younes: Review and editing; Fouad Sakr: Formal analysis; Nisreen Mourad: Review and editing; Dalal Hammoudi Halat: Visualization; Marwan Akel: Investigation; Ismail Jomha: Original draft, Conceptualization, Methodology

ABBREVIATIONS

AACP American Association of Colleges of Pharmacy
ACCP American College of Clinical Pharmacy



ASHP American Society of Health-System Pharmacists
BAU Beirut Arab University
BPharm Bachelor of Pharmacy
LAU Lebanese American University
LIU Lebanese International University

LU Lebanese University
OPL Order of Pharmacists of Lebanon
PharmD Doctor of Pharmacy
PPE Pharmacy Practice Experience
USJ University of Saint-Joseph

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