

## Original Research

# A qualitative focus on community pharmacists' attitudes and barriers toward continuing professional development: implications for professional practice

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### Abstract

**Background:** Continuing professional development and continuing education are important components of professional practice for pharmacists. Mandatory continuing professional development requirements have been introduced in several countries, including Jordan. However, information on the uptake of continuing professional development is lacking, particularly in the Jordanian context. **Objective:** This study's principal aim was to investigate community pharmacists' views of continuing professional development and to explore pharmacists' perceptions of the most common facilitators and barriers to participation in continuing education. **Methods:** A series of seven focus group sessions were undertaken with groups of four to seven community pharmacists. Focus group transcripts were thematically analyzed using a qualitative data analysis method. **Results:** The study included 34 pharmacists out of 95 who received invitation letters. Four key themes were identified: (1) community pharmacists' attitudes toward continuing professional development; (2) perceived motivating factors for continuing professional development; (3) experienced barriers to continuing professional development; (4) and potential strategies for improving pharmacists' continuing professional development. In terms of attitudes, participants generally understood the concept of continuing professional development. Motivating factors were mainly attributed to personal, work-related, and service provision-related factors. However, experienced barriers that could prevent community pharmacists from participating in continuing professional development despite their motivation were: barriers pertaining to workload, barriers pertaining to pharmacists, and barriers related to lack of resources. **Conclusion:** Practicing pharmacists need support now, and changes to undergraduate education are warranted to keep abreast of current developments and changes to practice. Despite limitations, the distinctive nature of this study would have a valuable contribution to the field of professional development. It can inform theory, policy, and practice relating to pharmacists' continuing professional development at both a professional level and governmentally, helping the relevant parties make informed decisions.

**Keywords:** continuing professional development; continuing education; community pharmacist; qualitative; focus group

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## INTRODUCTION

Continuing education (CE) and continuing professional development (CPD) are often used interchangeably, although there is a clear distinction between these concepts.<sup>1,2</sup> Continuing education is defined as a formal, structured educational activity aimed at improving professional practice and is an essential component of CPD.<sup>1,2</sup> Continuing professional development (CPD) involves an ongoing cycle of learning to improve skills and knowledge that leads to improved performance during employment.<sup>3</sup> In 2002, the concept of CPD was formally described for pharmacists by the International Pharmaceutical Federation (IPF) as "the responsibility of the individual pharmacist to systematically maintain, develop, and enhance skills, knowledge, and attitudes to ensure continued competence as a professional throughout the career."<sup>4</sup> This emphasizes pharmacists' responsibility for their professional development to improve their professional practice.<sup>4</sup>

Shortly after mandatory CPD introduction into the pharmacy profession, several studies were conducted to identify factors associated with pharmacists' views and attitudes toward CPD. Power et al, conducted a qualitative study of registered pharmacists in Scotland. In this study, a small number of community pharmacists (n=21) indicated that pharmacists did not fully participate in CPD and needed further support.<sup>5</sup> This



study found that in comparison to primary care and hospital pharmacists, community pharmacists spent less time on CPD and needed the most support to increase their motivation for CPD and their confidence and ability to participate in CPD.<sup>5</sup> In another study, Bell et al, examined how pharmacists in Northern Ireland perceive CPD.<sup>6</sup> A questionnaire was sent to all pharmacists in Northern Ireland (n=1689; response rate 24%), and factors such as lack of time, compensation, lack of substitutions, and lack of understanding of CPD were cited as barriers to participation.<sup>6</sup> Similar and additional barriers to participation were identified in studies conducted in Middle Eastern countries, such as the United Arab Emirates (UAE),<sup>7</sup> Qatar,<sup>8</sup> Egypt,<sup>9</sup> and Jordan.<sup>10,11</sup> They suggested that pharmacists are motivated to participate in learning activities, however, lack of time and workload, cost, location and type of courses offered, factors related to individual motivation, and a lack of understanding of CPD are fundamental reasons for nonparticipation in learning activities.<sup>8,9,12-15</sup> While most pharmacists cited "lack of remuneration" as the main barrier that prevented them from participating in learning activities in the United Kingdom and Northern Ireland,<sup>6,16,17</sup> few felt that "lack of funding" was a barrier.<sup>18</sup>

As pharmacists become more familiar with the mandatory CPD system, intrinsic motivation (personal desire and enjoyment) facilitates learning the most.<sup>19-21</sup> This CPD system requires pharmacists to be more self-directed, and motivation influences all stages of self-directed learning.<sup>19-22</sup> Powe et al, highlighted other factors that affect pharmacists seeking professional development: positive workplace support, access to learning resources, confidence in the CPD process, and motivation to participate in the CPD process. A statistical difference was found between pharmacists working in different settings for all four factors.<sup>23</sup> They concluded that pharmacists working in community settings needed the most support for CPD, while those working in primary care needed the least support.<sup>23</sup>

In Jordan, CPD has become fundamental and mandatory for license renewal for all healthcare professionals like physicians, pharmacists, and nurses. This change was in response to the Jordanian government inquiry.<sup>24</sup> Since 2019, the regulations for CPD were revised, and renewal of pharmacist licensure every five years is now mandatory and requires completion of 100 hours of CE activities, starting at renewal and every five years after that.<sup>24</sup> The new system requires a targeted approach to CPD and encourages participation in specific CE courses to address pharmacists' knowledge and skill gaps.<sup>24</sup> Therefore, the study's main objective was to investigate community pharmacists' views of CPD, identify the suboptimal factors they encounter during uptake in practice, and propose strategies and recommendations to address their needs.

## METHODS

A qualitative study based on face-to-face focus group interviews was conducted over eleven months, beginning in April 2021 and ending in February 2022. A purposive convenience sample was used to include all community pharmacists involved in CE activities and willing

to provide a detailed description of their personal experience, provided written informed consent was given.

### Ethics approval

The Institutional Review Board (IRB) at the University of Jordan Hospital granted ethical approval for this study (No. 252/2022-13/9/2022 (renewed)).

The researcher (AH) contacted the pharmacist-in-charge at each pharmacy through publicly available pharmacy telephone contacts and asked him/her to pass research packs to all pharmacists who worked there during the study period. Community pharmacists were recruited by sending a standard invitation letter and research information to the potential research participant's workplace. Pharmacists who replied by phone or email and expressed initial willingness to participate in the study received written information about the study and were asked to schedule a mutually convenient time for the focus group interview at a prearranged location. There were seven focus groups; each group consisted of four to seven pharmacists. Participants in these sessions were randomly selected and were encouraged to freely express their opinions and experiences related to continuing professional development. However, the number of interviews was not predetermined but was based on the point at which the data were considered saturated (ie, participant recruitment and interviews continued until no new themes emerged and saturation was reached).<sup>25</sup> No incentives were offered to participants who voluntarily participated.

A semi-structured interview guide was developed based on a review of the literature. Interview guide questions were open-ended, non-leading, and focused on three key areas: pharmacists' views and attitudes about CPD, barriers to and drivers of CE activities, and potential strategies for improving pharmacists' CPD. Prompts and follow-up questions were asked as appropriate. Written and verbal consent were obtained from all participants, assuring them of data confidentiality and the right to withdraw at any time. During these sessions, another research team member took extensive field notes. At the end of each session, the researcher clarified and confirmed quotes and field notes with participants.

The interviews usually lasted about 90 minutes. The researcher (AH) conducted all audio-recorded interviews. Anonymized audio records were transcribed verbatim by an independent company. Transcripts were reviewed for accuracy following transcription. Data were analyzed using thematic framework analysis by RH. Data analysis began with repeated listening and reading the transcripts to identify all the concepts and themes by which the data can be examined and compared to examine the similarities and differences in detail.<sup>25</sup> The next stage involved a comparison between cases aimed at identifying the variety of experiences between respondents and exploring whether typologies exist, looking for patterns within the data, common explanations, or experiences between respondents to refine the categories further.<sup>25,26</sup> The first author kept a journal of reflections and thoughts on the interpretations of the data, which included diagrams of possible relationships between



the emerging categories to guide or reflect on the analysis.<sup>27</sup> The data and analytic categories were further refined through discussions with the other authors to ensure that the analysis was thoroughly grounded in the data.

## RESULTS

Of the 95 recipients of the invitation letters, 34 pharmacists participated in this study. The demographic information of participants is summarized in Table 1.

Demographic	n (%)
<b>Gender</b>	
Male	8 (23.5)
Female	26 (76.5)
<b>Years of practicing as community pharmacist:</b>	
< 5 Years	19 (55.9)
5 - 10 Years	8 (23.5)
> 10 Years	7 (20.6)

Four major themes were identified and confirmed through data analysis; community pharmacists' attitudes toward CPD, perceived motivating factors for CPD, experienced barriers to CPD, and potential strategies for improving pharmacists' CPD.

### Community pharmacists' attitudes toward CPD

Three main sub-themes focus on presenting pharmacists' attitudes and experiences toward CPD in which they are engaged. The subthemes that emerged were: Meaning and purpose of CPD, participation in learning activities, and pharmacists' perceptions of the CPD cycle.

**Meaning and purpose of CPD:** All participating pharmacists indicated that the concept of CPD was clear to them; however, many could not distinguish between CE and CPD. For the majority, CPD was currently thought to be mandatory, and participation in learning activities was considered crucial for CPD. The common perception of CPD was "a collection of CE certificates and records of course attendance for career advancement." For other participants, CPD was "an ongoing process of self-development that includes evaluating work performance, identifying knowledge deficits, and learning." As reflected by interviewees, there was some foreseen usefulness from the uptake of CE and other learning activities in practice. Most respondents repeatedly viewed the CE and CPD as essential to continued competence. For example, a female community pharmacist with less than five years of practice declared that "being able to apply the skills and knowledge she has acquired or will acquire through the learning activities in practice is essential to her work and the community pharmacy profession." Another female pharmacist stated that she wanted to "feel more confident in her profession and believed that CPD would give her the confidence to properly counsel patients and other healthcare professionals." Some pharmacists expressed concern about keeping the CPD portfolio up to date and relevant, believing that records of activities on CE were only valid for initial interviews and had little or no use after that.

**Participation in learning activities:** Overall, responses ranged from participation in CPD to participation in CE to not wanting to participate in any learning activities. CPD participating pharmacists were able to assess their learning needs, identify learning objectives, and plan their learning activities to realize their goals: "CPD is an assessment of my needs and helps me plan my CE's to fill my skills and knowledge gaps." On the other hand, CE participating pharmacists attended workshops and online lectures but did not identify learning objectives: "So you focus on an area you are not very knowledgeable in, an area you have never done before and try to tackle it." Few pharmacists declared that they had attended CE in the past but had stopped attending workshops for some reason. These pharmacists were all pharmacy owners who described their participation in learning activities as, "Well, I mean, my main interest was clinical skills, so I went through all these work modules that were offered by JPA [Jordan Pharmacists Association] six years ago, I was very keen, but then I have not participated in anything lately."

Pharmacists' feelings towards the introduction of mandatory CPD were explored. Almost all participating pharmacists agreed with and supported the introduction of mandatory participation in CPD. They accepted the proposed changes in pharmacy: "It was necessary to ensure the competence of pharmacists, as this change would ensure my participation and that of others." However, some pharmacists were uncertain about the feasibility of the proposed system for CPD and felt that the system was imposed on them without consultation. In addition, many pharmacists discussed who should be responsible for CPD, and there seemed to be a consensus among participants that national or local guidelines for CPD were needed. For example, they could select a topic from a course booklet provided by the JPA. One pharmacist stated, "I think it needs to be a combination of local requirements and not something that is not going to be useful in this particular area." While many felt that "At least two if not all the three parties should be involved in deciding what pharmacists should learn." Some pharmacists thought that the type and level of knowledge should be uniform, at least at the local level, while others thought that they would choose subjects of study based on their preferences and interests based on needs.

**Pharmacists' perceptions of the CPD cycle:** While many felt that their learning should not be assessed and that a competent pharmacist would be able to apply the skills or knowledge they acquired in practice, other pharmacists with different years of experience held different views on the different methods of assessing learning needs. For example, a male pharmacist with only a few years of experience stated that he understood the approach the JPA expected him to follow to achieve competency. This pharmacist acknowledged that learning needs often arise during a workday and must be addressed immediately. A few pharmacists interrupted this pharmacist, stating that "there is no time to assess learning needs or plan for learning." A few other pharmacists perceived that logbook entry could be used for CPD assessment. Pharmacists were prompted to discuss planning for learning needs and how they would achieve competency in practice. For example, many



pharmacists declared that it is the responsibility of community pharmacists to identify what they need to accomplish to become and remain competent. Other pharmacists insisted that the environment in which individuals work could influence their CPD. In this context, some pharmacists who had previously worked in a hospital explained that this was easier to accomplish compared to a hospital or chain pharmacy than in a community pharmacy or independent pharmacy.

**Perceived motivating factors for CPD:** Perceived motivational factors were mainly attributed to three interrelated factors: (1) personal factors, (2) work-related factors, and (3) service provision-related factors.

All interviewed pharmacists were consistent in describing the perceived benefits of CPD. For example, some senior pharmacists declared that “not everything relevant to community pharmacy practice had been taught at the university and that they had spent most of their working hours dispensing medicines and making sure the business was profitable. Therefore, CPD was essential to help them acquire skills and knowledge they had not learned or to ensure they did not forget what they had once learned at the university and keep up to date on current treatments and policies.” Pharmacists gave examples from their experiences of how participation in CPD could impact their work life: “The biggest impact would be increased confidence in the advice and service you provide. The more knowledge you have, the more you feel able to give, whether it is to colleagues in the profession or patients. And that, in turn, would improve your relationship with patients and colleagues.” In addition, the pharmacists in this study were thought to be intrinsically motivated and preferred to undertake challenging learning and professional activities to embrace new roles and provide new services that were and are introduced into community pharmacy.

**Experienced barriers to CPD:** The barriers that could prevent community pharmacists from participating in CPD despite their motivation can be summarized under three main sub-themes: barriers pertaining to workload, barriers pertaining to pharmacists, and barriers related to lack of resources.

Analysis of pharmacists' responses reflects a common consensus that a common barrier to participating in CE activities was lack of time and the ability to allocate time during daily work. Most participating pharmacists did not have dedicated time for any learning activities. Many pharmacists revealed that: “It was difficult for the pharmacists to study during their working day and after work, and we expected CPD to create stress and extra workload into our busy schedule. Therefore, many pharmacists would prioritize work that had to be done, work they were paid to do”.

For other pharmacists, it was more about having family commitments that would hinder the uptake of CPD, and they believed that studying should be done during the working day. In contrast, few pharmacists felt that CE activities had to be done in their own time because they are paid to do a job that does not include CPD. Furthermore, few pharmacists talked from their experiences of how CE did not always have

an application in community pharmacy and that skills and knowledge obtained through previous training courses for community pharmacy had not been transformed into services; this might lead him and others not to participate and perceived that their efforts had been wasted. Among interviewed pharmacists, some older pharmacists tended to refer to age and years of experience as barriers to personal development. As such, they perceived that studying becomes more difficult with age and that learning takes longer than it did when the pharmacists were younger. One older pharmacist revealed that “compared to a newly qualified pharmacist, years of practice would make pharmacists competent and at some point, in their careers they would reach a limit of competence where they could not improve anymore.”

All pharmacists explicitly referred to the availability of resources as constituting the problem. Given funding for CE and learning activities as an absent resource in the community pharmacy setting, many pharmacists clarified that “they did not wish to learn something due to lack of remuneration.” Moreover, others wanted to receive financial support for CPD participation. In this regard, few pharmacists felt that the lack of coverage by other staff, “part-time pharmacists,” prevented some pharmacists from attending workshops or meetings or studying during the working day. Even if they could find a cover for their absence from the pharmacy, some thought they could not afford this financially and would lose their salary if they wanted to participate in learning activities during a working day.

**Potential strategies for improving pharmacists' CPD:** A change in the health care systems is needed at the level of government, the professional level (The JPA for pharmacists), the organizational level – the pharmacy in which the pharmacist is employed-, and the individual level. Pharmacists highlighted that “changes in attitudes to CPD are only partly within pharmacists' control; the stakeholders and policymakers are all playing their role in making CPD an effective change to practice.” In this way, the change will occur from both a top-down process of cultural change and a bottom-up process of individual influence. A pharmacist stated: “increasing the number of graduates who enter the profession with an understanding of CPD and those members of the profession who would have actively adopted the concepts themselves.”

There were similarities in what pharmacists perceived of the support they were looking for from their employers. For example, many pharmacists suggested that those who employ pharmacists should support employees about CPD by providing opportunities to share learning and discuss CPD in team meetings, and the appraisal process. Doing so would confirm that CPD and the learning it derives from are valued and encourage individuals to commit regularly. In this context, many pharmacists assumed that funding for participation in learning activities would encourage pharmacists to participate and also encourage those who had not previously participated in CE in the past to begin. Some perceived that CPD should be recognized as “work” and integrated into pharmacists' workday to make it easier for all community pharmacists to participate.



Few pharmacists proposed a financial reward recognizing pharmacists' contributions to health care.

## DISCUSSION

One of the principal themes of our findings is that participating pharmacists understood and practiced the principles of CPD and were positive towards the concept either as training to become accredited or as keeping up-to-date with developing services. They declared that participating in learning activities would help them to develop professionally, keep up to date, refresh skills and knowledge, and enhance confidence and job competence, in agreement with findings from previous studies,<sup>5,6,18,21,28-30</sup> supposing CPD is a self-directed learning process and a very individualized activity. Moreover, they wanted to continue participating in CE learning activities to improve patient care and further support current and potential professional roles in community pharmacy settings. It was clear from our findings that many pharmacists are not participating in the necessary steps of the CPD cycle, including evaluation of learning and having a personal development plan. However, few expressed how they assessed their learning needs. Similar findings were reported in previous studies of community pharmacists' views and attitudes toward CPD to show that community pharmacists were not fully engaging in each step of the CPD cycle,<sup>5,18,28,29,31,32</sup> suggesting pharmacists may require facilitation and support in their CPD.

Different reasons motivated respondent pharmacists to participate in learning activities. The desire to learn and competency was the most motivating reasons to participate in continuing education, thus reflecting the purpose of personal development. Similarly, Hanson and DeMuth (1991) described that 'personal desire to learn or intellectual curiosity' almost always facilitated pharmacists' participation in learning activities. However, professional licensure maintenance requirements were also important reasons to participate.<sup>21,33</sup> While motivational factors to participate in learning activities were stable over time, a shift from voluntary to mandatory participation may change pharmacists' motivation to participate in learning activities.<sup>29,33,34</sup>

Compared to hospital-based pharmacists, this study identified that community pharmacists were spending less time on CPD and as the sector requiring the most support to increase their motivation for CPD and their confidence and ability to participate in CPD. Based on self-report methods for CE and CPD, Mottram et al, and Power et al, found that community pharmacists participated for 30 and 40 hours, respectively, and hospital pharmacists participated for about 45 and 66 hours, respectively, per year.<sup>5,18</sup> The fact that 64% of participants had to refuse to participate in this CPD study due to work pressure confirms time pressure to be a recognized barrier to CPD. This observation re-iterates findings in previous work.<sup>10,20,28,35</sup> Furthermore, it was clear from this research and other work<sup>12,16-18,21</sup> that the community pharmacists expressed an apparent dissatisfaction with the financial resource and remuneration system which was in place, indicating that payment for CE courses or payment for a part-time pharmacist to cover their

absence should be considered. If a pharmacist is encouraged to attend, then the dual problems of working time pressure and reimbursement will require attention. Many barriers remain to be resolved before community pharmacists realize their full potential. Most predominant are the barriers concerning job constraints, family constraints, and lack of relevance to learning opportunities. Factors such as lack of motivation or interest and negative attitudes toward the compulsory nature of CE operate as actual barriers as perceived by research respondents. There is research evidence to suggest that many pharmacists put forward the same reasons in the UK and other middle east countries,<sup>5,9,11,13-15,36-38</sup> but the priority order was not comparable, indicating the fact that the significant barriers are logistic rather than lack of interest.

The limited number of pharmacists in each group may have limited the views obtained using this methodology. A further limitation may be associated with the fact that those pharmacists who volunteered to participate generally participated in regular CE and may have had particular views concerning CE that are not shared by the community pharmacists in general. Instead of individual interviews, focus groups were used, which would not have offered the same confidentiality as individual interviews; the pharmacists may have felt inhibited to discuss their professional perceptions and attitudes in others' presence.<sup>39</sup>

## CONCLUSIONS

The results from this study contribute to informing the forward pathway for the profession. The pharmacy profession stakeholders and employing organizations still have much work to do to achieve a professional culture where CPD is accepted as part of the pharmacists' ongoing registration process and as vital support to their learning and development. Additionally, it is uncertain whether pharmacists can embark on CPD without support and facilitation, as perceived barriers to participation exist. Practicing pharmacists need support now, but new generations of pharmacists could be introduced to self-assessment of competence during the undergraduate pharmacy course. This research would suggest the appropriate steps that need to be taken to develop a competency framework for undergraduates.

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### Competing interests

All authors have completed the ICMJE uniform disclosure form



at [www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf) and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

#### Credit author statement

Rima Hijazeen: Conceptualisation, project administration, investigation, methodology, analysis and interpretation of data, writing- original draft preparation; Ahmad A. Hammad: Conceptualisation, acquisition of data, analysis and interpretation of data, writing- original draft preparation, writing- reviewing and editing; Jakub N. Khzouz: Writing- original draft preparation, writing- reviewing and editing, supervision; Eman A. Hammad: Methodology, validation, data curation, writing- original draft preparation, supervision; Angel R. Sweis: Project administration, validation, acquisition of data, data curation, supervision

#### Data availability

Given the sensitive nature of the study interviews, raw data are not publicly available. Interested persons may contact the corresponding author for more information.

#### Ethical approval

The Institutional Review Board (IRB) at the University of Jordan Hospital granted ethical approval for this study (No. 252/2022-13/9/2022 (renewed)). The procedures used in this study

adhere to the tenets of the Declaration of Helsinki.

#### Consent to participate

Informed consent was obtained from all individual participants included in the study.

#### Access to data

All authors had full access to all of the data in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

#### Transparency declaration

The lead author affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

#### Contribution to literature

The findings support the assumption that participating in learning activities would help community pharmacists to develop professionally and enhance confidence and job competence. Many barriers to participation in continuing education (CE) remain to be resolved before community pharmacists can realize their full potential. The findings have valuable insights for researchers, the pharmacy profession stakeholders, employing organizations, and school of pharmacy curriculum developers.

## References

1. Murphy C, Cross C, McGuire D. The motivation of nurses to participate in continuing professional education in Ireland. *J Eur Ind Train*. 2006;30(5):365-384. <https://doi.org/10.1108/03090590610677926>
2. Rouse MJ. Continuing professional development in pharmacy. *J Pharm Technol*. 2004;20(5):303-306. <https://doi.org/10.1177/875512250402000509>
3. Friedman A, Phillips M. The role of mentoring in the CPD programmes of professional associations. *Int J Lifelong Educ*. 2002;21(3):269-284. <https://doi.org/10.1080/02601370210127864>
4. Federation IP. FIP statement of professional standards: continuing professional development. Published online 2002. [https://doi.org/10.1300/j354v19n02\\_12](https://doi.org/10.1300/j354v19n02_12)
5. Power A, Johnson BJ, Diack HL, et al. Scottish pharmacists' views and attitudes towards continuing professional development. *Pharm World Sci*. 2008;30(1):136-143. <https://doi.org/10.1007/S11096-007-9156-5>
6. Bell HM, Maguire TA, Adair CG, et al. Perceptions of CPD within the pharmacy profession. *Int J Pharm Pract*. 2001;9(Supplement\_1):55. <https://doi.org/10.1111/j.2042-7174.2001.tb01115.x>
7. Hasan S. Continuing education needs assessment of pharmacists in the United Arab Emirates. *Pharm world Sci*. 2009;31(6):670-676. <https://doi.org/10.1007/s11096-009-9330-z>
8. Wilbur K. Continuing professional pharmacy development needs assessment of Qatar pharmacists. *Int J Pharm Pract*. 2010;18(4):236-241. <https://doi.org/10.1111/J.2042-7174.2010.00034.X>
9. Mohamed Ibrahim OH. Assessment of Egyptian pharmacists' attitude, behaviors, and preferences related to continuing education. *Int J Clin Pharm*. 2012;34(2):358-363. <https://doi.org/10.1007/S11096-012-9616-4>
10. Abuloha S, Sharaydih R, Wazaify M. Exploring the needs, barriers, and motivation of Jordanian pharmacists towards continuing education. *Trop J Pharm Res*. 2019;18(12):2687-2693.
11. Basheti IA, Mhaidat NM, Alqudah R, et al. Primary health care policy and vision for community pharmacy and pharmacists in Jordan. *Pharm Pract (Granada)*. 2020;18(4). <https://doi.org/10.18549/PHARMRACT.2020.4.2184>
12. Bell HM, Maguire TA, McGartland LF. Perceptions of continuing professional development within the pharmacy profession. *J Soc Adm Pharm*. 2002;19(3):87-98.
13. Haughey SL, Hughes CM, Adair CG, et al. Introducing a mandatory continuing professional development system: an evaluation



- of pharmacists' attitudes and experiences in Northern Ireland. *Int J Pharm Pract.* 2007;15(3):243-249. <https://doi.org/10.1211/ijpp.15.3.0012>
14. Donyai P, Herbert RZ, Denicolo PM, et al. British pharmacy professionals' beliefs and participation in continuing professional development: a review of the literature. *Int J Pharm Pract.* 2011;19(5):290-317. <https://doi.org/10.1111/j.2042-7174.2011.00128.x>
  15. Hasan S. Continuing education needs assessment of pharmacists in the United Arab Emirates. *Pharm World Sci.* 2009;31(6):670-676. <https://doi.org/10.1007/S11096-009-9330-Z>
  16. Mottram DR, Rowe PH. Evaluation of the impact of recent changes in postgraduate continuing education for community pharmacists in England. *Int J Pharm Pract.* 1996;4(2):123-128.
  17. Ward PR, Seston EM, Wilson P, et al. Perceived barriers to participating in continuing education: the views of newly registered community pharmacists. *Int J Pharm Pract.* 2000;8(3):217-224.
  18. Mottram DR, ROWE P, Gangani N, et al. Pharmacists' engagement in continuing education and attitudes towards continuing professional development. *Pharm J.* 2002;269(7221):618-622.
  19. Driesen A, Leemans L, Baert H, et al. Flemish community pharmacists' motivation and views related to continuing education. *Pharm World Sci.* 2005;27(6):447-452. <https://doi.org/10.1007/S11096-005-0950-7>
  20. Hanson AL, Bruskiwitz RH, DeMuth JE. Pharmacists' perceptions of facilitators and barriers to lifelong learning. *Am J Pharm Educ.* 2007;71(4):67. <https://doi.org/10.5688/aj710467>
  21. Alkhateeb FM, Attarabeen OF, Alameddine S. Assessment of Texan pharmacists' attitudes, behaviors, and preferences related to continuing pharmacy education. *Pharm Pract (Granada).* 2016;14(3):1-9. <https://doi.org/10.18549/PharmPract.2016.03.769>
  22. Schunk DH, Zimmerman BJ. *Self-Regulated Learning: From Teaching to Self-Reflective Practice.* Guilford Press; 1998.
  23. Powera A, Grammatikib A, Batesed I, et al. Factors affecting the views and attitudes of Scottish pharmacists to continuing professional development. *Int J Pharm Pract.* 2011;19(6):424-430. <https://doi.org/10.1111/J.2042-7174.2011.00135.X>
  24. Health JM of. No Title. In: Health JM of, ed. *Renewal System for Health Professionals.* ; :1935-1940. <http://pm.gov.jo/newspaper> (accessed 23 March 2023).
  25. Pope C, Ziebland S, Mays N. Analysing qualitative data. *BMJ.* 2000;320(7227):114-116. <https://doi.org/10.1136/BMJ.320.7227.114>
  26. Lewis J, Ritchie J, Ormston R, et al. Generalising from qualitative research. *Qual Res Pract A Guid Soc Sci students Res.* 2003;2:347-362.
  27. McGhee G, Marland GR, Atkinson J. Grounded theory research: literature reviewing and reflexivity. *J Adv Nurs.* 2007;60(3):334-342. <https://doi.org/10.1111/j.1365-2648.2007.04436.x>
  28. Haughey SL, Hughes CM, Adair CG, Bell HM. Introducing a mandatory continuing professional development system: an evaluation of pharmacists' attitudes and experiences in Northern Ireland. *Int J Pharm Pract.* 2007;15(3):243-249. <https://doi.org/10.1211/IJPP.15.3.0012>
  29. Attewell J, Blenkinsopp A, Black P. Community pharmacists and continuing professional development: a qualitative study of perceptions and current involvement. *Pharm J.* 2005;274(7347):519-524.
  30. Poudel RS, Piryani RM, Shrestha S, et al. Opinion of hospital pharmacy practitioners toward the Continuing Pharmacy Education program: a study from a tertiary care hospital in central Nepal. *Integr Pharm Res Pract.* 2017;6:157-161. <https://doi.org/10.2147/ijprp.s145026>
  31. Bell HM, Maguire TA, Adair CG, et al. Perceptions of CPD within the pharmacy profession. *Int J Pharm Pract.* 2001;9(S1):55. <https://doi.org/10.1111/J.2042-7174.2001.TB01115.X>
  32. Austin Z, Marini A, Croteau D. Continuous Professional Development: A Qualitative Study of Pharmacists' Attitudes, Behaviors, and Preferences in Ontario, Canada. *Am J Pharm Educ.* 2005;69(1):4. <https://doi.org/10.5688/aj690104>
  33. Cunningham DE, Luty S, Alexander A, et al. The future of CPD for general practitioners, registered pharmacy staff and general practice nurses in Scotland-qualitative responses from a national survey. *Educ Prim Care.* 2020;31(1):7-14. <https://doi.org/10.1080/14739879.2019.1690400>
  34. Swainson D, Silcock J. Continuing professional development for employee pharmacists: a survey to compare practice in the hospital and community sectors. *Pharm J.* 2004;272(7289):290-293.
  35. Ward PR, Seston EM, Wilson P, et al. Perceived barriers to participating in continuing education: the views of newly registered community pharmacists. *Int J Pharm Pract.* 2000;8(3):217-224. <https://doi.org/10.1111/J.2042-7174.2000.TB01008.X>
  36. Abuloah S, Sharaydih R, Wazaify M. Exploring the needs, barriers, and motivation of Jordanian pharmacists towards continuing education. *Trop J Pharm Res.* 2021;18(12):2687-2693. <https://doi.org/10.4314/tjpr.v18i12>
  37. Wilbur K. Continuing professional pharmacy development needs assessment of Qatar pharmacists. *Int J Pharm Pract.* 2010;18(4):236-241. <https://doi.org/10.1111/j.2042-7174.2010.00034.x>
  38. Mottram DR, Rowe PH. Evaluation of the impact of recent changes in postgraduate continuing education for community pharmacists in England. *Int J Pharm Pract.* 2011;4(2):123-128. <https://doi.org/10.1111/J.2042-7174.1996.TB00853.X>
  39. Smith F. *Research Methods in Pharmacy Practice.* Pharmaceutical Press; 2002.

