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Exploring the Potential of Microcredentials for Pharmacists' Continuing Professional Development: Views from Practitioners and Academics Worldwide

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Abstract

Microcredentials (MCs) are brief, focused courses that certify an individual's attainment of particular skills or knowledge. Pharmacy schools are well-positioned to support the continuing professional development (CPD) of pharmacists by incorporating MC-based training within their curricula. This study aimed to investigate pharmacy professionals' perspectives on the necessity and feasibility of MC programs worldwide. A total of eleven semi-structured telephone interviews were conducted with pharmacy practitioners, policymakers, and academic staff across seven countries. Participants were recruited via purposive sampling to capture insights from diverse pharmacy sectors. All interviews were audio-recorded, transcribed verbatim, and analysed using a general inductive approach. Interviewees viewed MCs in pharmacy as a forward-thinking approach aligned with the increasing digitalisation of the field. They noted that MCs offer accessible opportunities to acquire skills and knowledge relevant to pharmacy practice and can serve as an alternative route to fulfilling traditional CPD requirements. Many participants suggested that universities are well-suited to deliver MCs; however, challenges such as recognition, time constraints, and resource limitations were highlighted as potential obstacles to uptake and implementation. The study sheds light on pharmacy practitioners' and academics' views on MCs and their potential contribution to pharmacy education and practice. These findings can inform the development of MCs suitable for global CPD purposes. The study is particularly timely given the exploration of alternative teaching and learning models triggered by the COVID-19 pandemic.

Keywords: Microcredentials, Nano-credentials, Digital-badges, Mini-badges, Pharmacy

Introduction

Healthcare has undergone rapid transformation in recent decades, necessitating lifelong learning (LLL) for healthcare professionals through continuing education (CE) and CPD programs. Adapting to evolving healthcare demands is essential for delivering safe and effective care. In pharmacy, these changes are reflected in regularly updated treatment guidelines, new drug introductions, and expanding cognitive services aimed at improving patient outcomes.

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Most healthcare professionals hold formal qualifications such as diplomas or bachelor's degrees. However, novel methods for acquiring skills, knowledge, and credentials are emerging, engaging millions of learners. These "alternative credentials" include microcredentials (MCs) and industry-recognised certificates. MCs are typically short, self-paced courses enabling learners to develop or enhance skills and knowledge relevant to their profession [1], often culminating in a digital badge upon completion [2]. Terminology varies among providers, including digital badges (DBs), nano-credentials, and nano-degrees, all validating the mastery of specific competencies [3]. First introduced at a 2010 conference in Barcelona, Spain, MCs have since gained international attention as a potential disruptive innovation in education [4].

MCs address the need for continuous skill and knowledge updates, especially in rapidly evolving healthcare settings [5]. By segmenting learning into manageable

units, MCs enable busy professionals to continue their education while documenting progress in a verified manner [6]. They also provide pathways for specialization [6], for instance, in anticoagulation or anticonvulsant clinic services [7]. Traditionally, such specialization required post-licensure education, certification, and training [8], but MCs offer a credentialed alternative, enhancing accessibility to advanced skill acquisition [9]. While MC adoption in pharmacy remains limited, there is potential for broader implementation, driven by expanding pharmacist roles, increased specialization, and the need for continuous competency development [10].

As MCs are still emerging globally, several barriers exist, including establishing credibility, gaining acceptance among learners and professional bodies, integrating with existing workflows, and addressing time and resource constraints [11-13]. Ongoing research is needed to evaluate MCs' impact on workforce performance, health outcomes, and educational practices, as well as to identify strategies to improve their effectiveness. Given the novelty of MCs and the limited evidence base, definitive conclusions regarding their value and feasibility are challenging. Therefore, in-depth qualitative studies capturing multiple perspectives across different countries are necessary to explore the implementation of MCs in pharmacy practice. This study sought to examine the views of pharmacy professionals from both developing and developed nations on the demand for and feasibility of MC programs.

Materials and Methods

Study design

This research was conducted as an exploratory qualitative study, employing semi-structured telephone interviews with pharmacy academics and practitioners purposefully chosen from seven countries representing both developed and developing contexts. Ethical approval was obtained from the University of Auckland Human Participants Ethics Committee (reference number 022828, dated 16/04/2019).

Participant recruitment

Participants were identified using a combination of snowball sampling and maximum variation sampling to ensure diversity in professional experiences. The seven countries included in this study were Egypt, Brazil, Kuwait, China, New Zealand, the UK, and Japan. Selection was guided by individuals' recognized engagement in professional practice, leadership, or educational contributions within their national pharmacy sectors. Because the number of participants per country was small, data saturation was not pursued; rather, the aim was to collect sufficient perspectives to provide a broad understanding of attitudes toward MCs across different contexts. The participant pool included academic, hospital, and community pharmacists. Information sheets and consent forms were emailed prior to interviews, and all participants provided written consent. No financial or other compensation was offered.

Data collection

Data were obtained through one-on-one semi-structured interviews, allowing flexibility in responses. Interviews were conducted in English and followed a pre-prepared guide designed to prompt discussion on key MC-related topics. The guide was developed based on prior literature and the research team's expertise, reviewed by a subject-matter expert, and adapted to the professional context of each participant. A pilot test was conducted to confirm question clarity and improve interview flow. Interviewees were invited to discuss their perceptions of MCs, unmet skills needs, feasibility, potential challenges, and opportunities for MC implementation in their countries. A standard definition of MCs was provided to all participants to ensure consistency, with instructions to focus specifically on pharmacy-related applications. Probes were used to clarify or expand on responses. Demographic information—including gender, practice type, location, qualifications, and years of experience—was collected. Interviews took place between June and September 2019, lasted 30–45 minutes, and were conducted via face-to-face meetings, telephone, or Skype/Zoom. Short field notes were taken, and participants were informed that recording could be paused at any time. No incentives were provided.

Data analysis

All interviews were audio-recorded and transcribed verbatim. Transcripts were de-identified and printed, and field notes were digitized for analysis. A general inductive approach (GIA) [14] was used, enabling the identification of key themes from raw textual data and linking findings to the study objectives.

The research team first reviewed entire transcripts while listening to recordings to gain familiarity with the content. Coding began only after all interviews were

completed. An initial coding framework was constructed based on the interview guide questions. Three transcripts were then independently reviewed and discussed among authors to identify initial themes, which led to an expanded and refined coding framework. This revised framework was applied to additional transcripts for further development. Five team members coded the remaining transcripts. Regular team discussions ensured consistency, resolved coding disagreements, and supported iterative refinement. Only data sections relevant to the research objectives were coded, and segments with multiple interpretations were assigned to more than one code. After coding all relevant text, focused coding was conducted to identify patterns, relationships, and overarching themes. Representative quotations were extracted for each theme. Outliers or negative cases were also considered. Mind maps were used to visually organize emerging themes and illustrate relationships [15]. Themes were finally consolidated into broader categories and sub-themes, with coding and theme identification performed iteratively.

To enhance trustworthiness and rigour, multiple strategies were implemented [16], including multiple coders, peer review of preliminary findings, departmental seminars for feedback, and leveraging the research team's extensive qualitative research experience.

Results and Discussion

Between 1 April and 30 May 2019, pharmacy professionals from multiple countries were invited via email to participate in the study. Out of the 16 individuals approached, 11 agreed to take part. **Table 1** presents the demographic and professional characteristics of these 11 participants, showing that three were full-time academics, one worked in industry, two were community pharmacists, three were hospital pharmacists, and two were involved in government regulatory roles. Thematic content analysis identified five main themes along with several subcategories, which are summarized in **Figure 1** and elaborated in the following sections.

Table 1. Participants' characteristics

Participant	Current role/occupation	Country
1	Hospital pharmacist	New Zealand
2	Pharmaceutical policy	New Zealand
3	Pharmaceutical policy	New Zealand
4	Hospital pharmacist	New Zealand
5	Community pharmacist/Academician	Japan
6	Academician	Brazil
7	Industry pharmacist/Academician	Brazil
8	Academician	Kuwait
9	Community pharmacist	Egypt
10	Hospital pharmacist	United Kingdom
11	Academician	Hong Kong

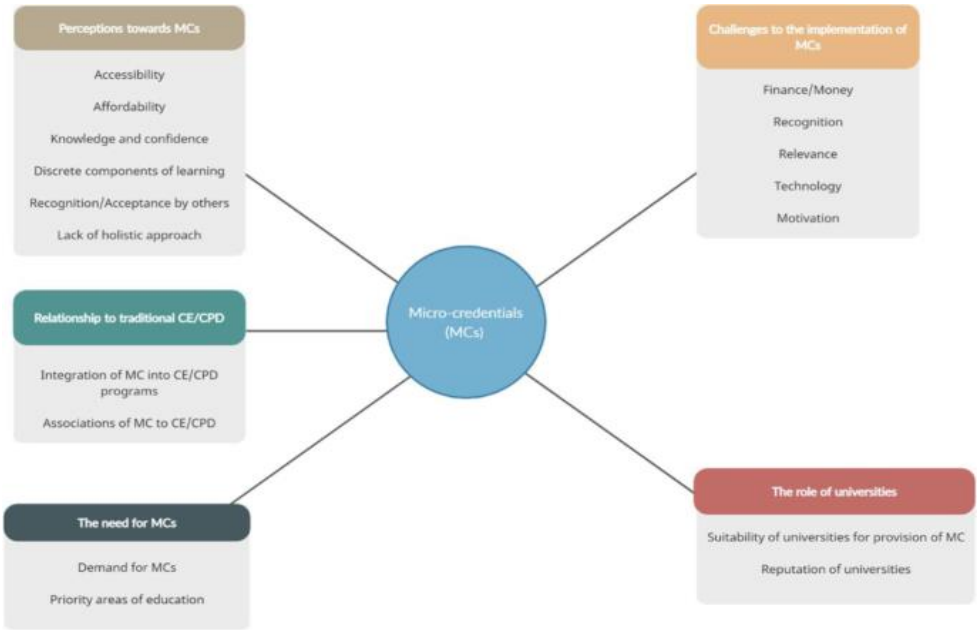

Figure 1. Conceptual map

Perceptions of microcredentials

Participants were asked to share their views on the benefits and limitations of MCs compared with traditional forms of learning, such as postgraduate diplomas and certificates. Their perceptions are summarized below.

The perceived benefits of MCs were consistent across participants, regardless of country. One of the most commonly mentioned advantages was the flexibility in timing and location. By allowing learners to engage with content at their own pace, MCs were considered compatible with pharmacists' busy schedules. For example, a participant from Hong Kong stated, "you can go by your own interest, your own time, and own budget." Many participants noted that conventional postgraduate programs often require year-long commitments with scheduled lectures and workshops, which are difficult for full-time pharmacists to attend. MCs, being shorter courses, enable learners to study at times that best fit their individual schedules.

Another frequently cited benefit was the modular nature of MCs, allowing courses to be tailored to personal learning needs. A participant from New Zealand highlighted that MCs provide "more manageable, bite size chunks of learning," emphasizing their utility in addressing specific knowledge gaps without imposing excessive workload. A participant from Kuwait observed that "pharmacists always need a boost or refresher of their knowledge and skills," adding that MCs support both targeted learning and broader skill enhancement. Participants also noted that ongoing advancements in medicines and clinical guidelines necessitate continual learning to maintain high-quality patient care.

Several participants suggested that MCs could enhance pharmacists' professional performance and support specialization in areas such as anticoagulation management. The use of technology in MCs was also considered a key advantage, facilitating online discussions, forums, and digital courses. A Brazilian academic described MCs as "the future" of pharmacy education, potentially becoming "the standard for this generation." Similarly, a pharmacist from Egypt commented that MCs fit the needs of a "digital age" in which technology increasingly shapes learning. Younger pharmacists, who are more accustomed to digital environments, were considered likely to find MCs more efficient than traditional learning methods.

However, some participants expressed concerns regarding MCs. A commonly cited issue was the limited recognition of MCs by employers or other healthcare professionals, as MCs are still relatively new. One New Zealand hospital pharmacist highlighted the benefits of digital badges, stating that they "allow [others] to see what you've done, how you've done it and how you're assessed, which can be added onto your CV," thereby providing transparency even if the concept of MCs is unfamiliar to others.

Some participants viewed the narrow focus of MCs as a drawback. An Egyptian pharmacist explained, "I think the only disadvantage comes from the name itself. It's a microdose. A very small dose. And to get good knowledge from a small dose, you need a lot of them. You also need to continue on having them so you can build up good knowledge—one or two is not enough." Similarly, a New Zealand hospital pharmacist noted that "postgraduate courses are better at moulding a lot of information together" and that "[MCs] do not allow us to think about the bigger picture."

Microcredentials and CPD/CE

Participants were asked whether they considered MCs as an alternative form of continuing professional development (CPD) or continuing education (CE) within healthcare. The academic from Brazil suggested that MCs align well with the expectations of the newer generation, who "want things to happen right here, right now." They further explained that these short courses are easily accessible via mobile devices, enabling CE/CPD learning anytime and anywhere, and therefore "matches the new generation of how things are happening." In this way, MCs could complement traditional CE to enhance accessibility and feasibility. Similar views were expressed by other participants, particularly noting that technology is now "heavily integrated into our lives" and MCs could help "dominate the future" of learning.

A participant from Japan noted that their current CE program (e-learning) is based on a point system, whereas MCs use a novel badging system. Similarly, the participant from Egypt highlighted that MCs allow certificates or badges to "build upon each other," which can motivate learners further. They suggested that if MCs could incorporate a point system compatible with existing CPD/CE requirements, pharmacists could selectively choose courses both for personal interest and professional obligations. Other interviewees were more

cautious about linking MCs to conventional CPD/CE. For example, the participant from Hong Kong emphasized that "the design of MCs, the specific learning objectives and the evaluation required to assess whether a candidate may receive that credential must be robust enough to ensure they match traditional CE/CPD programmes."

One hospital pharmacist from New Zealand offered a slightly different perspective, expressing dissatisfaction with current CE/CPD programs provided by major organizations, noting the need for "a major review." They believed existing programs offered limited progression, a gap that MCs could help fill. Several participants mentioned that traditional programs are often costly, making MCs a more economically attractive option. However, other NZ participants expressed concern that MCs alone may not sufficiently meet CPD/CE requirements, potentially hindering future learning. MCs may be inadequate for demonstrating the ability to perform skills to a "repeatable standard on an ongoing basis," a requirement for verifying competence. Some also speculated that excessive micro-credentialing could impede pharmacists from pursuing postgraduate qualifications as part of lifelong learning, describing it as a "sad, unintended consequence."

Microcredentials and the role of academia

Overall, participants supported the involvement of universities in delivering MC courses, although opinions varied regarding the extent of university commitment.

Both participants from Brazil agreed that universities have an important role in providing MCs. They also predicted that MCs would become increasingly popular, stating "there's no way you can run from MCs as they will become even more and more popular form of education." Their main concern was whether public or private institutions would be capable of implementing MCs effectively, noting that private universities may have the resources, while public universities may provide higher-quality offerings but could lack funding. Participants from Japan, Egypt, and Kuwait expressed similar perspectives on universities' roles in delivering MCs. In Japan, where ongoing e-learning systems for pharmacists already exist, MCs could add "plenty of knowledge" and generate high demand. In contrast, a pharmacist from the UK suggested that as long as high-quality, structured courses with strict academic integrity checks are provided, other accredited providers—not just universities—could offer MCs. The Hong Kong participant echoed this view, noting that restricting MCs solely to universities is insufficient and emphasizing the importance of collaboration with community practitioners to "enhance educational content" so it better reflects "what is needed at the community."

Participants consistently noted the importance of university reputation in MC delivery. A New Zealand pharmacist involved in policy remarked, "pharmacists might want to pick a university that has a great global academic reputation," especially as MCs are delivered online and widely accessible.

The need for microcredentials

Participants discussed topics and the potential demand for MCs to assess the feasibility of implementing microcredential and digital badging systems. Most respondents recognized a market for MCs in their countries that could enhance both individual pharmacists' development and the profession as a whole. Both Brazilian pharmacists emphasized the same point: as legislation evolves and some pharmacists proactively seek to develop skills, MCs could motivate and facilitate these efforts.

Participants from Brazil, Egypt, and Kuwait highlighted that MCs could help "break down large topics into smaller parts" and facilitate further skill development. They emphasized that, given pharmacists' busy schedules, MCs would be "easier to do" than committing to full postgraduate courses.

There was consensus among participants that all pharmacists "should have the motivation to learn new knowledge and skills," which supports specialization and expands the scope of practice, ultimately contributing to the advancement of the pharmacy profession.

The participant from Japan noted that "many Japanese pharmacists want to go abroad," and international expansion of MCs could enable recognition of pharmacists' skills across different countries. Due to frequent natural disasters in Japan, this participant also expressed particular interest in MC topics related to the supply and management of medicines during such events.

The Hong Kong interviewee explained that the feasibility of MCs "depends on the design and learning objectives," expressing uncertainty regarding the difficulty level of MCs and the evaluation methods required to achieve the credential.

The UK pharmacist observed that implementing MCs globally would be challenging because "various countries have variable practice," meaning that a course

relevant in one country might not be applicable elsewhere.

In New Zealand, all four participants expressed positive views on the need for MCs. Unlike participants from Japan and Kuwait, one NZ pharmacist suggested that MCs are more suited for personal professional development rather than transforming the pharmacy profession. She explained that pharmacists would "always benefit" from courses that enhance professional skills, enabling them to "identify gaps in their skills and find training opportunities to fill these gaps." MCs could also foster development in soft skills such as communication, teamwork, leadership, cultural competence, and Te Reo Māori, as well as provide opportunities to explore areas of interest not available in the workplace.

Challenges to the implementation of microcredentials

Although participants were generally positive about MCs, they identified several challenges that could affect implementation, which can be grouped into key areas.

Cost

Time and financial investment were frequently mentioned concerns. Participants from Kuwait, New Zealand, and Japan emphasized that the true cost of MCs extends beyond course fees to include development, maintenance, and the time spent engaging with the course. Many noted that paying out-of-pocket is a concern, as pharmacists often consider their salaries relatively low.

Technology

Technological factors such as the type of device, interface usability, WIFI access, and the ability to download content were cited as potential barriers. Participants explained that poor WIFI connectivity or complicated, underdeveloped MC platforms could discourage engagement, especially in developing countries with limited IT infrastructure.

Legislation and regulation

As a new concept, MCs require formal regulation to be recognized. Currently, digital badges (DBs) in many countries lack legal recognition; participants highlighted that MCs need legislation and regulatory frameworks to qualify as recognized CPD. Legislation would also ensure that the education provided is current and standardized. In countries lacking CE regulations, MCs may hold limited value, and uptake would depend on individual motivation. Most participants also noted the potential challenge of MCs not being recognized by employers, professional associations, or regulatory bodies.

Motivation and application

A recurring concern among participants was the motivation of pharmacists to engage with MC courses. They emphasized that careful selection of courses is essential; if MCs are irrelevant or poorly aligned with pharmacists' practice, participation could be very low. Relevance to local practice and guidelines was considered particularly important. While pharmacy practice differs across countries, participants noted overlapping core skills. Therefore, they suggested that foundational topics should be addressed globally, with country-specific courses tailored to local regulations and practice standards.

This study explored several key aspects of MCs, including perceptions of their value, their relationship with CPD/CE, the role of universities in delivering MC courses, the perceived need for MCs, and anticipated implementation challenges. Recruiting participants from multiple countries allowed comparison of perspectives across different healthcare systems and practice contexts, providing insights that may be relevant to readers worldwide.

Most participants recognized the unique advantages of MCs, such as lower costs, greater flexibility, and ease of access, which align with findings in the literature examining MCs in other professional domains [17-23]. They expressed interest in MC courses tailored to their pharmacy specialty, enabling the acquisition of skills necessary for focused practice areas. The learner-centered nature of MCs allows professionals to allocate time efficiently to meet personal learning and development needs. Participants also valued the autonomy MCs provide, allowing pharmacists to pursue topics of personal interest and direct their own professional growth. Literature supports this, suggesting that MCs help learners exercise autonomy while selecting courses appropriate to their needs in diverse contexts [24].

The participants' interest in MCs reflects a desire to enhance professional skills while integrating training into daily routines. Previous research shows that 34% (n = 1239) of PharmD students in the US were motivated to pursue additional post-graduation training [25].

Additionally, the shift of pharmacists from traditional dispensing roles to more clinical, patient-centered responsibilities [26] requires synthesizing clinical knowledge. For pharmacists previously focused on dispensing, short MC courses may provide confidence and an accredited pathway to acquire skills and knowledge required to meet expanding professional expectations.

Concerns regarding recognition and acceptance of MCs by stakeholders were noted. As a relatively new concept, MCs are unfamiliar to many; however, participants argued that digital badges (DBs) linked to MCs provide transparency and are self-explanatory. This aligns with literature describing DBs as enriched symbols containing verified information about skills and achievements [27, 28], with similar concerns previously noted in studies exploring DB systems among professionals [29-31]. Over time, as MCs become more established in healthcare, recognition and acceptance are expected to increase.

Another challenge identified was the brief and discrete nature of MCs. As patients' health needs become increasingly complex [32-34], participants questioned whether MCs can adequately represent integrated, real-world practice. MCs may be best suited for foundational skills, while courses addressing complex, specialized topics would require expert knowledge and appeal to a smaller audience.

Overall, participants supported the idea that MCs could provide an alternative pathway to fulfilling CE/CPD requirements, offering greater flexibility, accessibility, and convenience compared to traditional methods such as conferences, seminars, and workshops, which demand substantial time and financial investment. Literature confirms that such factors are major barriers to traditional CE/CPD participation [35, 36]. By breaking learning into small, verifiable units [6], MCs allow busy professionals to continue developing skills while documenting progress. This aligns with core CE/CPD principles: self-directed learning, needs-based content, and defined outcomes [37]. Given the limitations of conventional CE/CPD, pilot implementation of MCs may be worthwhile [38]. Participants highlighted that MCs could make CE/CPD more meaningful, relevant, and aligned with individual pharmacists' practice needs.

Our study identified several concerns regarding the practical design, academic quality, and assessment methods of MC courses. Participants emphasized that if implemented, the system must be rigorous and maintain standards comparable to traditional CE/CPD programs. Despite their shorter duration, MCs should not compromise academic expectations. Some apprehension was noted about whether MCs might dissuade pharmacists from pursuing higher education, such as postgraduate studies, though further research is needed to confirm this.

To date, MCs have not been formally studied within pharmacy CPD/CE contexts, though they show promise in other fields such as education and medicine [17, 18, 23]. Our findings indicate that practitioners perceive MCs as a viable mechanism for pharmacists to fulfill CE/CPD requirements. These results align with prior research suggesting MCs help address the need for continuous skill and knowledge updates, particularly in rapidly evolving healthcare environments [5].

Participants generally agreed that universities are well positioned to develop and deliver MCs for pharmacy professionals. Some leading institutions, including MIT and Harvard, already offer such courses [39-41]. Participants cited universities' academic expertise, their role in extending existing training programs, and their reputational prestige as key reasons. The ranking and reputation of the offering institution were emphasized, reflecting the value participants place on recognized, high-quality education. This suggests that motivation to pursue MCs is strongly linked to the perception of educational quality and its acknowledgment by peers.

Several participants highlighted the importance of collaboration between universities and local practitioners to ensure MC courses reflect current real-world practice. Some participants noted the necessity of universities leading these initiatives, as many external organizations were viewed as profit-driven and less focused on professional development.

Participants also considered MCs and associated digital badges (DBs) an innovative means to demonstrate skills and knowledge to peers or other healthcare professionals. Previous research reported that pharmacists earning DBs experienced increased self-esteem and recognition from colleagues [42]. Other studies have similarly found that DBs provide a transparent representation of skills to employers, suggesting that verified acknowledgment of competencies is highly valued. In pharmacy, DBs can enhance visibility of pharmacists' growing skill sets and facilitate better utilization of expertise.

Consistent with prior studies [6, 43, 44], our findings indicate that the duration of an MC course is a significant factor in its acceptance. While time constraints are well-

documented [11], cost considerations have been less explored. Given the variation in pharmacists' salaries across countries, the financial feasibility of MCs depends on who covers the costs, funds the courses, and manages delivery. For pharmacists not required to participate in CE/CPD, any associated costs may reduce uptake. Our findings suggest that cost considerations are more nuanced than previously reported [11]. Technology is another important factor; participants expected MC platforms to be advanced yet affordable. Lack of access to necessary technology at home could create additional barriers and time constraints for completing MC courses. Individual motivation was also noted as a potential barrier. Participants worried that the effort invested in MCs might go unrecognized or that venturing beyond traditional learning methods could be intimidating. Considerable effort will be needed to promote MCs to pharmacists and communicate the career benefits. In line with other studies [43], participants emphasized the need for MCs to be tailored to each country's practice environment to ensure relevance and value.

These findings highlight the importance of legislation and regulation for MC courses to maintain competency standards and safeguard the quality of care. Previous research notes that legislative changes are often more complex than regulatory adjustments [45]. Participants also recommended formal recognition of MCs to support the development of pharmacy practice and the profession overall. This aligns with earlier studies emphasizing the importance of recognition and relevance of MCs in comparison with traditional degrees [46, 47].

Limitations and strengths of the study

The study was limited by the relatively small number of participants recruited from each country. Ideally, more than one interviewee per country would have been included to better capture the unique perspectives within each practice environment. However, due to the heterogeneity of the countries sampled—each with distinct pharmacy practices and contexts—achieving data saturation was not feasible. In countries such as Japan and Egypt, only a single participant was interviewed, increasing the potential for personal bias and limiting the representativeness of responses for that country. Additionally, the views expressed by participants may have limited transferability to pharmacists in other disciplines. Some participants also withdrew from the study, including one from Canada and three from New Zealand, primarily due to time constraints, which reduced the overall pool of countries and participants. There was a disproportionate number of participants from New Zealand; however, at the time, New Zealand was actively planning to introduce MC courses at one of its universities, making the study particularly relevant to its academic and professional stakeholders.

Conclusion

To the best of our knowledge, this is the first study investigating the need for MCs in the pharmacy profession, providing novel insights into an underexplored area. These findings can inform the design and development of MC courses targeted at pharmacy practitioners. The study was conducted prior to the COVID-19 pandemic, so no questions specifically addressed pandemic-related changes; nevertheless, the timing is pertinent given the global shift toward alternative educational models.

As MCs remain a relatively new initiative, significant challenges remain for their implementation, including considerations around time, cost, legislation, regulation, and professional recognition. Despite these challenges, participants identified a range of topic areas of interest, including assertive communication, leadership, nutrition, and pharmacy business management. Based on these findings, there is reason to believe that launching a series of pharmacy-focused MC courses could be a worthwhile endeavor, likely to attract interest and support. However, additional qualitative and quantitative research is needed to identify universally relevant topics to maximize uptake and ensure the courses' impact on professional development.

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