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Use of micro-credentials for interprofessional online education and training of health workers: A scoping review

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Introduction

Higher education institutions (HEIs) are committed to creating more diverse and more flexible educational opportunities for a larger group of learners including practicing health professionals. Among HEI, there is a growing interest in micro-credentials as a potential way to certify these educational opportunities.

The major output of PREP IP is an interprofessional online course focusing on refugee and migrant health. PREP IP is an opportunity for partners to offer a flexible, online, learning experience for a diverse group of learners who are either practicing or are interested in practicing in the field of refugee and migrant health. In order to consider if micro-credentialing is an option for integrating the PREP IP online course into the offerings by partner institutions, the project team undertook a scoping review on micro-credentials. This review provides information on the design and development of micro-credential courses that will be used to inform the implementation model for the PREP IP online course. It may also be useful for other organizations that consider offering educational programmes for health professionals that will use micro-credentials.

Micro-credentials are used to certify the learning outcomes of short-term learning experiences. They offer a flexible, targeted (and hopefully inclusive) way for people to gain recognition of their personal and professional development. More people are engaging in shorter forms of educational opportunities and micro-credentials mean that engagement in these courses can be officially recognised.

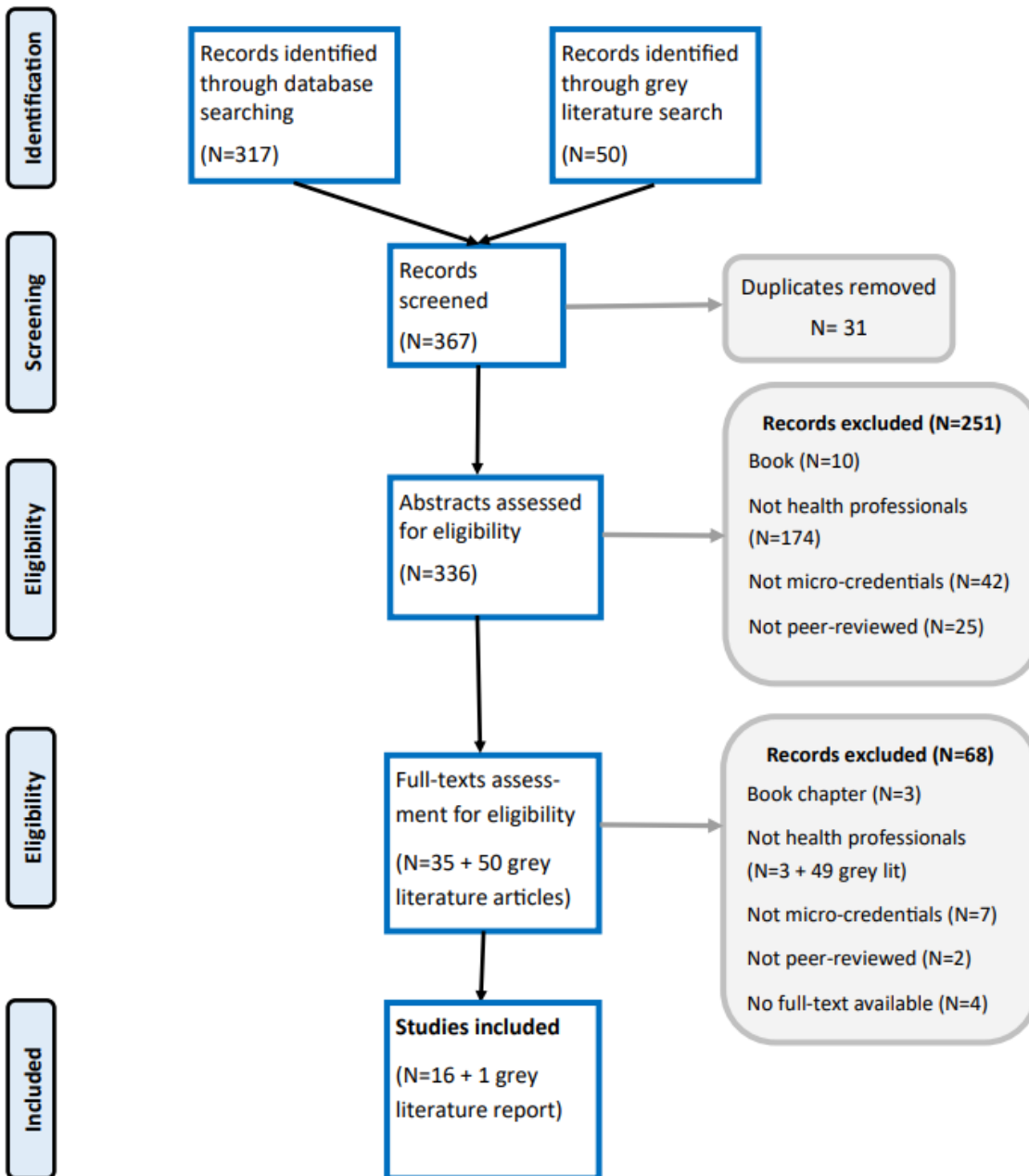
Micro-credentials are a way for professionals and students to highlight their skills and competencies by demonstrating that they have met the requirements of an educational course. They are used to verify and validate that specific skills and competencies have been achieved by participants on an educational course. Micro-credentials are awarded to students who have completed the course and demonstrated that they have reached the required standard. However, at present there is not a uniform approach to how higher educational institutions use micro-credentials in their courses. Standards of practice and policies around micro-credentials continue to develop and change.

Methodology

This scoping review aims to map out literature about micro-credentials in higher education with the primary focus on health and social care professions both in entry-level education and continuing professional development. Literature published between 2010 and 2022 was covered in the review including peer-reviewed articles, key reports, and relevant websites. The following data bases were searched: Scopus, Web of Science, Academic Search Elite, JSTOR, Teacher Reference Center, ERIC, Oria, Google Scholar, Worldcat.org, OAlster, ProQuest Dissertations and Theses Global, ProQuest Central, and ERIH Plus. A grey literature was identified in the searches of the relevant websites.

The data base searches returned 317 articles. After removing duplicates, 286 articles were included in the title and abstract screening process. Based on the title and abstract screening, 35 were selected for full-text screening. After the full-text screening, 16 were included in this scoping review. The grey literature search returned 50 articles. After full-text screening, one report was included in this scoping review.

Figure 1. PRISMA Flow Chart outlining article retrieval process



Results

Details of the 17 articles included in this scoping review are provided in Table 1. Analysis of the included articles demonstrated the lack of original research in this area and highlighted the need for high quality studies to investigate the utility, feasibility and value of micro-credentials for health and social care professionals. There were a range of definitions used to describe micro-credentials. Common concepts found in the definitions included:

- Convenient, accessible, cost-effective, time-efficient, short and flexible approach to learning

- Enable development of additional, relevant and industry-aligned skills
- A form of continuing education or professional development that implies a certain extent and depth of learning
- Collect and provide evidence of learning, a “summative award”
- Enable self-paced and self-directed learning, may lead to specialisation
- Recognise attainment of specific knowledge, skills or competencies

Table 1. Overview of the articles included in the scoping review

Study details	Scoping Review Results (n=number of studies)
Publication types	Opinion piece – n=5 Report on a course - n= 5 Letter - n= 1 Editorial - n= 2 Research – n= 3 Grey literature report - n= 1
Country/region	Australia - n= 3 Canada – n= 4 (including grey literature report) European Union - n= 1 New Zealand - n= 2 USA - n= 6 Multiple countries - n= 1
Year of publication	2010–2015 - n= 1 2016–2020 - n= 5 2021–2022 - n= 11
Health professions involved	Pharmacists - n= 2 Nursing - n= 3 General health professionals - n= 6 Public health - n= 3 Health professions students - n= 1 Health education professionals - n= 1 Medical laboratory students - n= 1

Analysis and qualitative synthesis of the included articles led to the development of three themes which are discussed below. It should be noted that the evidence supporting these themes came mostly from opinion pieces and reports rather than research studies that had evaluated micro-credentials.

Micro-credentials have the potential to transform education for health and social care professionals

- Real world application of problem-based learning to respond to a changing healthcare service. Enable health professionals to build specific, employable skills in a short timeframe so that they can continuously upskill and stay current in order to meet the needs of their role.
- Provide an alternative pathway to a degree or to enable health professionals to maintain and update knowledge, skills and abilities.
- Provide accessible, affordable and flexible CPD opportunities that can accommodate non-traditional learners by enabling them to undertake study in short bursts at their own convenience

- Provide evidence of learners achieving specific knowledge or skills through established criteria validated by the organisation issuing the micro-credential.
- A micro-credentialing framework that integrates interprofessional learning opportunities and achievements across programmes can provide an efficient and effective approach to interprofessional learning.

Ensuring quality and value of micro-credentials

- Clearly articulated and rigorous assessment methods and criteria are vital to support the validity and utility of a micro-credentialled course for health professionals. Measures are needed to evaluate and monitor the effectiveness of the course in contributing to and enhancing learner independence, autonomy and acquisition of knowledge and skills.
- The micro-credential framework should align with the learning requirements and the knowledge, skills and competencies frameworks established by the regulatory bodies that control entry-to-practice and licensure of individuals in the health professions involved.
- Collaboration with health professionals and other stakeholders in the design and development of the micro-credential to ensure the course is relevant and needed.
- Evidence informed curricula that are reviewed and tested by relevant stakeholders and include learner-centered approaches, educational theories, and group dynamics. Small groups to better engage learners and enable the provision of individual feedback.
- The micro-credential should be provided by a credible issuer e.g. a University or professional body.
- Legislation and regulation of micro-credentials are needed to ensure their recognition and value and to allow for a portable record of micro-credential activity that is accessible and transferable for learners.

Potential barriers and challenges to introducing micro-credentials

- The absence of standardisation or quality control processes in the current granting of micro-credentials undermines the value currently placed on them. Not all micro-credentials are created equal: some provide college credits, some qualify for CPD via an accrediting body, and some simply support upskilling and indicate a basic understanding of a topic.
- Technology can be a challenge to the implementation of micro-credentials as learning depends on the availability of equipment and internet access. Technology can be particularly a challenge in low resource settings.
- Current lack of recognition of micro-credentials by employers, higher education institutions, professional associations, and other authorities.
- Universities face challenges in introducing and implementing micro-credentials: bureaucratic structures and procedures, financing, slow rate of response, an emphasis on research over teaching and current lack of student demand for change.

Conclusions and recommendations

This scoping review has demonstrated the lack of published research on the design, development and evaluation of micro-credentials for health and social care professionals. However, some useful implications can be drawn from the available literature to inform the development of the online, interprofessional course in the later stages of this project. Points to consider in designing the course as a micro-credential:

1. The course should be built on a framework that reflects the four characteristics that define quality interprofessional education - rationale, outcome-based goals, deliberate design and assessment and evaluation.
2. The course should align with and accommodate the learning requirements and the knowledge, skills and competencies frameworks established by the regulatory bodies that control entry-to-practice and licensure of individuals in the health professions involved.
3. The curriculum should be evidence-informed and include learner-centered approaches, educational theories, and group dynamics.
4. The course should be designed and developed in collaboration with practitioners and relevant stakeholders. It should also be reviewed and tested by subject matter experts, instructional designers, peer reviewers, practitioners and other stakeholders.
5. There should be clearly articulated and rigorous assessment methods to evaluate the credential's value, validity and utility.
6. There is a need to provide learners with a portable record of the micro-credential activity, ideally one that is accessible and transferable.

More research is needed to evaluate the impact of micro-credential courses for individuals, healthcare organisations and health professions, and thus further inform the future development of micro-credential courses for health and social care professionals.