Pharmacy participation in dental and oral health care: a scoping review protocol

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ABSTRACT

Objective: The aim of the review is to identify and describe the characteristics and associated outcomes of dental and oral health advice and support provided by members of the pharmacy profession. Research exploring the role, attitudes, and knowledge of pharmacists, pharmacy students, and support staff relating to dental and oral health care, as well as stakeholder perceptions, will also be examined.

Introduction: With the increasing prevalence of dental and oral health disorders and resource constraints within health care systems, other avenues for oral health promotion and care provision are warranted. Pharmacists, as primary care professionals working across various practice settings, could play a significant role in promoting good oral health. Yet, there is limited insight about the role, attitudes, and knowledge of members of the pharmacy profession towards dental and oral health care, as well as what stakeholders, such as consumers and other health care professionals, think about their role in this context.

Inclusion criteria: Any full-text publication that describes outcomes related to pharmacist, pharmacy assistant, or student involvement, knowledge, or attitudes towards dental or oral health care in any setting, and stakeholder perspectives of this role, will be included. Reviews, protocols, and commentaries will be excluded, as will studies specifically focused on smoking cessation or that do not describe the related health promotion activity.

Methods: Articles published in English will be sought from health and educational databases with no date restrictions, with additional references identified via snowballing using citations and reference lists. Data searching and screening processes will follow JBI methodology, involving two independent reviewers, and data extraction presented in a narrative form.

Keywords: dental care; health promotion; oral health; pharmacist; pharmacy

JBI Evid Synth 2021; 19(7):1651–1658.

Introduction

Oral health is a multifaceted concept that "includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex."[1(p.1)] Unfortunately, there is a high incidence of oral health disorders worldwide, such as dental caries, periodontal disease, and tooth loss, with 3.6 billion people reportedly experiencing an oral health disorder between 1990 and 2017.[2] This prevalence is of significant concern due to an aging and growing population globally. Oral health inequalities specifically remain for marginalized groups, including people living with a disability, Indigenous populations, and those of lower socioeconomic status, making this a global public health challenge.[3] Poor oral health could negatively impact a person's health-related quality of life,[4] warranting further consideration of this key construct, alongside a person's age or presence of a chronic condition.[5] Whilst further evidence of the relationship between poor oral health and other chronic conditions, such as diabetes, is needed,[6] health care professionals alike should consider both aspects to enable improved quality of care.[7]

Access to timely and affordable dental care is pivotal to maintaining oral health well-being. This

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The authors declare no conflict of interest.

DOI: 10.11124/JBIES-20-00209

is particularly important when a primary reason for delays in seeing a dental practitioner are cost-driven, as seen in countries such as Australia and Canada.[8,9] However, with unmet demands for dental care[10] and increased health system costs, other interventions need to be developed. Other health care professionals, including pharmacists, can play a significant role in promoting good oral health.[11] Worldwide, pharmacists are acknowledged as medication experts, and in the community pharmacy setting are highly accessible to most populations. In Australia, over one million dental prescriptions were dispensed by pharmacists between 2013 and 2017, although this number excludes private prescriptions, which are not subsidized by the Australian Government,[12] meaning this number could be significantly higher. Furthermore, there are other medications available over the counter in pharmacies that are used to manage minor ailments relating to dental care, such as topical and oral analgesics for dental pain.[13]

Pharmacists play an important role in ensuring medications are used safely and appropriately, as well as providing advice on the effects of medication on oral health. For example, the risks of medication-related osteonecrosis of the jaw with bisphosphonates used to manage osteoporosis is a key counseling point that pharmacists can inform consumers about.[14] Pharmacists can also assist dental practitioners with prescribing queries to reduce post-operative complications and meet antimicrobial stewardship goals.[13] There is a dedicated pharmacist-led medicine information service that specializes in dental queries in the United Kingdom,[15] and members of the Australian Dental Association can contact a consultant pharmacist regarding medication queries.[16] Interprofessional collaboration between both professions to reduce medication discrepancies in dental records is also advocated.[17] Pharmacists have in recent years increased their engagement with a range of public health services and promotion activities,[18] as shown by initiatives such as vaccination services and advocacy,[19] sexual health screening,[20] smoking cessation, and alcohol and weight management.[21]

Health promotion, as defined by the World Health Organization is "the process of enabling people to increase control over, and to improve, their health."[22(p.1)] There are some, albeit small, reported benefits of pharmacy-based health promotion interventions, yet none of the included studies in the systematic review of randomized trials by Steed, *et al.* focused on dental or oral health care.[23] In comparison to other services, such as screening for chronic health conditions, researchers did not include dental health as a health promotion activity to explore with pharmacists in Quebec, Canada.[24]

Similar to many other public health issues, there are preventative measures and actions that can be taken to improve or maintain good oral health, such as dental hygiene, fluoridation, smoking cessation, reduced sugar consumption, and avoiding substances that can be misused or abused.[11] Pharmacists have an important role in oral health promotion, such as advising on maintaining good oral hygiene and recommending regular access to local dental services.[25] Referring consumers for a dental assessment was highlighted as a key role for UK pharmacists in identifying early signs of mouth lesions, although most of the surveyed doctors and dentists viewed community pharmacists as having a minor role, if any, in oral cancer prevention.[26] Furthermore, there is evidence that consumers may be unaware of pharmacists' extended scope of practice,[27] or have queries about their role beyond medication supply.[28]

The pharmacist's role in supporting dental health care in community pharmacies has been investigated[29] and Luong, *et al.* explored the impact of a multidisciplinary team, which involved a pharmacist, on improving the oral health of older Australians in a sub-acute hospital setting.[30] While the impact of the pharmacist specifically could not be determined from reported results, the pharmacist played an active role in providing oral health education to hospital staff and in the development and implementation of oral care treatment guidelines.[30] Generally, there is limited insight about the role, attitudes, and knowledge of members of the pharmacy profession towards oral health care, as well as what consumers think about their role in this context.

To our knowledge, no systematic or scoping reviews have described the role of pharmacists and pharmacy support staff in oral health care and associated outcomes. Pharmacy support staff (ie, pharmacy assistants or technicians) are often the first person consumers access when they seek help within a pharmacy setting, and consequently are

important members of the pharmacy team. In May 2020, a preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews, and *JBI Database of Systematic Reviews and Implementation Reports* found no similar scoping or systematic reviews on the topic of oral health care within the pharmacy profession.

This scoping review will identify and report the characteristics and associated outcomes of dental and oral health advice and support provided by members of the pharmacy profession. For the purpose of this scoping review, members of the pharmacy profession include pharmacists, pharmacy support staff, and pharmacy students. Studies that describe the inclusion of oral health and associated interprofessional education initiatives within the pharmacy curriculum will be included. These educational papers will be relevant when considering the level of knowledge and where pharmacists obtain information, or are educated about oral health. Information on the care being provided within the pharmacy context will be obtained, including a mapping of results in relation to the knowledge and attitudes of members of the pharmacy profession about the pharmacy's role in dental and oral health. This will include reporting on the perceptions of consumers and other health care professionals as key stakeholders. Findings will identify what further research is needed in this area.

Review questions

1. What services (support or advice) have been delivered by pharmacists, pharmacy assistants, and pharmacy students, and what are the associated outcomes in dental or oral health care that have been measured?
2. What are the attitudes of members of the pharmacy profession towards their role and level of knowledge, regarding dental and oral health care?
3. What are consumers and health care professionals' perceptions towards involvement of the pharmacy profession in dental and oral health care?

Inclusion criteria

Participants

This review will consider studies that include pharmacists, pharmacy students, and pharmacy support staff (eg, pharmacy assistants) as study participants, as well as relevant stakeholders such as consumers or the general public, dental practitioners, and other health care professionals as individual practitioners or representatives of professional bodies.

Concept

This review will consider studies that explore the role of members of the pharmacy profession in providing oral or dental health care. Interventions may include health promotion activities, such as providing dental hygiene advice, including toothbrushing, flossing, and regular dental checkups; consumer referral to a dental practitioner; medication audits or reviews; and interactions with dental practitioners about the quality use of medicines. Other studies that explore the role, knowledge, and attitudes of pharmacists, pharmacy support staff, and pharmacy students in relation to dental or oral health care, such as mouth ulcers, oral candidiasis, and periodontal disease will be included. Of interest will be consumer and health care professional opinions of dental and oral health care delivered by members of the pharmacy profession. Outcomes related to pharmacists', support staffs', and students' involvement, level of knowledge or attitudes towards dental and oral health care will be identified.

Context

The context is any practice setting that involves a member of the pharmacy profession, including hospital pharmacies, outpatient clinics, community pharmacies, and universities offering pharmacy degrees in any country; this could include pharmacists working in multi-disciplinary teams. No exclusion criteria will be applied to the study setting or pharmacist role; studies will be inclusive of any workplace or educational facility and pharmacists can be hospital, community, accredited, and consultant pharmacists, etc. Pharmacy students will be inclusive of any year level or pharmacy program, for example, Bachelor of Pharmacy (BPharm), Master of Pharmacy (MPharm) and Doctor of Pharmacy (Pharm D).

Types of sources

Primary studies will be sought. This scoping review will include a range of quantitative, qualitative, and mixed method studies focused on dental or oral health care within the pharmacy context.

Observational and experimental studies such as randomized and non-randomized controlled trials, cross-sectional surveys, and qualitative research will be included.

Methods

The proposed scoping review will be conducted in accordance with JBI methodology for scoping reviews.[31]

Search strategy

The search strategy will aim to locate published primary studies and research theses that involve the conduct and reporting of primary research. Systematic reviews, conference abstracts, protocols, professional articles, and commentaries will be excluded. Search terms will be developed by two researchers (JH and SM) and reviewed by other members of the research team (COR, SE-D, AW) and a university librarian. An initial limited search of PubMed and Embase was undertaken to identify articles on the topic and to pilot test the search strategy. Search terms will be mapped to PubMed MeSH terms; others will be included in the search string as keywords. Keywords and terms will be modified to suit individual databases, for example, ''oral health'' as a MESH term in PubMed and ''dental health'' as a preferred term in Emtree for Embase (an example of the Embase search is outlined in Appendix I). The reference lists and citations of articles included in the review will be screened for additional full-text papers. While no date restrictions will be applied, only sources published in English will be included.

The following databases will be searched: PubMed, Embase (via Ovid), EBSCO (CINAHL Complete; Dentistry and Oral Science Source), International Pharmaceutical Abstracts (IPA), Education Resources Information Centre (ERIC), Web of science, Google Scholar, and ProQuest Dissertations and Theses.

Study selection

Following the search, all identified citations will be collated and uploaded into EndNote v.X9.2 (Clarivate Analytics, PA, USA) and duplicates removed. Titles and abstracts will then be screened by two independent reviewers (JH and SM) for assessment against the inclusion criteria for the review. At this stage, any differences will be discussed between the two reviewers and the full text of selected citations will be independently assessed against the inclusion criteria. Reasons for exclusion will be recorded and reported in the scoping review. Any inconsistencies arising from full text screening will be resolved by a third reviewer (AW). The search results will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Review (PRISMA-ScR) flow diagram.[32]

Data extraction

One reviewer (JH) will extract data from included papers using a data extraction template developed by the reviewers, and this will be quality checked for accuracy by another member of the research team and the differences discussed. The data extracted will include the following information: author(s), year of publication, type of study and aim(s), country of origin; study participants and setting; methodology/methods (including data collection tools, funding source etc.); dental and oral health condition; and results pertaining to the aims of the scoping review. A draft extraction tool is provided in Appendix II; this will be modified as required during the data extraction process, the details of which will be outlined in the full scoping review.

Data analysis and presentation

The extracted data will be presented in tabular form, including type of study, year of publication, and data collection methods (qualitative and/or quantitative), and accompanied by a mapping of the results in relation to review aims and questions. For example, there may be nuances between developed and developing countries in relation to pharmacists' role and related oral health activities that can be reported. Extracted study data will be synthesized based on the focus of the studies, including services (interprofessional services, health promotion programs) and any associated outcomes; level of knowledge, attitudes and practice in relation to medication use (eg, sugar-free medication or Bisphosphonates); and role in dental and oral health care. Depending on the number of included studies, we will also consider the use of charts or graphs for data presentation. The PRISMA-ScR will be used to guide the review and reporting the results.[32]

Acknowledgments

The Griffith University librarian who provided feedback on the initial search strategy.

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Appendix I: Search strategy

Embase (Ovid)

No date limits. Searches mapped to preferred term in Emtree AND as free text in all fields. Search undertaken: 15 April 2020

Search	Query	Records retrieved
S1	('pharmacist'/de OR 'pharmacist' OR 'pharmacy technician'/de OR 'pharmacy technician' OR 'pharmacy student'/de OR 'pharmacy student' OR 'clinical pharmacy'/de OR 'clinical pharmacy' OR 'hospital pharmacy'/de OR 'hospital pharmacy') AND [english]/lim	134,872
S2	('dental health'/de OR 'dental health' OR 'mouth hygiene'/de OR 'mouth hygiene' OR 'dental procedure'/de OR 'dental procedure' OR 'dental anxiety'/de OR 'dental anxiety' OR 'mouth disease'/de OR 'mouth disease' OR 'tooth disease'/de OR 'tooth disease') AND [english]/lim	46,027
S3	('public health'/de OR 'public health' OR 'public health service'/de OR 'public health service' OR 'self care'/de OR 'self care' OR 'health promotion'/de OR 'health promotion' OR 'education'/de OR 'education') AND [english]/lim	1,881,332
S4	(dental OR dentistry OR (oral NEXT/1 health)) AND [english]/lim	352,184
S5	S3 AND S4	40,573
S6	S2 OR S5	80,416
S7	S1 AND S6	805

Appendix II: Data extraction instrument

Author(s) Year	Aim	Type of study	Country	Study participants	Setting	Methods (including sampling, time-period, tools/frameworks, outcome measures, funding source etc.)	Dental or oral health condition (eg, dental pain, mouth ulcer)	Focus (eg, knowledge, attitudes, practice)	Results