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Protocol

Barriers and facilitators for dental practitioners in implementing orofacial myofunctional therapy: A scoping review protocol

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PROTOCOL

Barriers and Facilitators for Dental Practitioners in Implementing Orofacial Myofunctional Therapy: A Scoping Review Protocol

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Purpose: Orofacial myofunctional therapy (OMT) addresses various dental issues and has evolved significantly since its emergence in the early 20th century. Despite its uses and effectiveness, the adoption of OMT among dental practitioners varies with a lack of comprehensive understanding in the field. This scoping review will aim to map the current evidence on OMT in dentistry, with a focus on the perspectives and attitudes of dental practitioners, as well as the barriers to and facilitators of its implementation in clinical practice.

Method: The planned scoping review adheres to the JBI methodology for scoping reviews guide, with data sourced from five databases, including MEDLINE, CINAHL, Scopus, Dentistry & Oral Science Source, and Cochrane Library. Inclusion criteria encompass dental practitioners' experiences with OMT, using the PCC mnemonic. Titles and abstracts will be screened by two independent reviewers, followed by full-texts, to identify relevant primary sources. The review will include primary studies of quantitative, qualitative, and mixed-methods nature, and is limited to English-language publications. Data will be extracted by two independent reviewers and combined. The extracted data will be analyzed and displayed in a tabulated format, supplemented with a descriptive summary.

Conclusion: This scoping review will provide an understanding of the role of OMT in managing orofacial myofunctional disorders and other dental conditions. It seeks to identify barriers and facilitators in implementing OMT, aiming to guide strategies that encourage its adoption in dental practice. The findings are expected to contribute to integrating OMT into standard dental care as appropriate according to local regulations, enhancing the management of dental conditions and improving overall oral health outcomes.

Keywords: *interdisciplinary approach, multidisciplinary approach, orofacial myofunctional disorders, oral health practitioner, orofacial myology, orthodontic management*

INTRODUCTION

Orofacial myofunctional disorder (OMD) refers to the dysfunction of the orofacial muscular complex that manifests in poor resting posture of the orofacial musculature, abnormal swallowing and chewing patterns, speech difficulties, and oral breathing.¹ The etiology of OMD is understood to be multifactorial, with no singular causative factor identified. Certain conditions, however, can contribute to OMD. For example, obstructed nasal passages may serve as a causative factor in the onset of OMD.² Additionally, conditions such as lip and tongue ties, as well as prolonged engagement in pacifier use and digit-sucking habits, are believed to impact the adequate movement of orofacial muscles, potentially contributing to the development of OMD.³

The field gained recognition and came to active practice in the early 20th century as Edward H. Angle

introduced the concept of the tongue's resting posture affecting the development of the upper arch and teeth placement within the arches.⁴ Over the years, the concepts of MFD became more popular and gained interest from other healthcare providers working in an interdisciplinary team.⁵ This led to the development of a therapeutic programme focused on the orofacial region known as orofacial myofunctional therapy (OMT).⁴

OMT is based on fundamental principles focused on restoring neuromuscular functions within the orofacial region. It involves a series of exercises aimed at enhancing the tone and mobility of the muscles in this area.⁵⁻⁷ Exercises have been demonstrated to be effective in fostering a balanced interaction among orofacial muscles.⁵ These exercises play a crucial role in promoting the proper resting position of the tongue, lips, and cheeks while supporting functional nasal breathing and natural swallowing patterns.⁶ OMT is used widely to help patients with various conditions, including obstructive sleep apnea-hypopnea syndrome (OSAHS),^{2,8,9} temporomandibular disorders,¹⁰ and speech sound disorders.⁵ Literature confirms that OMT enhances the functional and morphological aspects of the craniofacial surface of children suffering from OSAHS.^{2,8} The findings highlight that the efficacy becomes more significant as the

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duration of the intervention increases and adherence improves.² Over time, extensive research has consistently shown that inadequate muscular tone in the facial muscles can significantly impact the development of the maxillary and mandibular arches, consequently affecting the alignment of the teeth.² Furthermore, the benefits of achieving harmonious functioning of the orofacial musculature extend into many aspects of oral health, due to the elimination of mouth-breathing habits.¹¹

Different countries have different regulations in the provision of OMT. In some countries, OMT falls solely under the scope of practice of a speech-language pathologists (SLPs), but not in others. For example, registered healthcare practitioners, including dental practitioners, are allowed to practice OMT without having a specialized certification (e.g., in California, USA).¹² However, almost all certified orofacial myologists are either SLPs or registered dental hygienists. Therefore, they are regulated by their respective professional authorities. Australian practitioners must be registered with either the Australian Health Practitioner Regulation Agency or Speech Pathology Australia and complete at least 28 hours of OMT training course provided by certified orofacial myologists.^{13,14} In 2023, Brazilian experts and specialists published a consensus statement on sleep-focused speech-language-hearing sciences advising that only SLPs can practice OMT and must be trained or accredited by competent trade associations or professional societies.¹⁵ In some countries, dental practitioners are restricted from providing OMT, but others allow dental practitioners to utilize OMT to manage certain dental conditions and diseases.

Although the literature highlights the effectiveness of OMT in managing certain dental conditions and diseases,^{2,5-7} details are lacking on the experiences and perceptions of dental practitioners in adopting OMT in their clinical practices.⁷ A survey conducted in Washington County, Oregon, USA, revealed that the majority of dental hygienists lack comprehension of the concept of OMT and predominantly perceive it as a specialty provided by other healthcare practitioners.⁷ Understanding barriers and facilitators to implementing OMT would help in developing targeted strategies to encourage its adoption among dental practitioners. This could lead to improved patient outcomes and a broader integration of OMT into standard dental care practices or referrals to appropriate OMT providers. Additionally, it may contribute to a more comprehensive understanding of OMT's role in managing certain dental conditions, thereby enhancing the overall effectiveness of dental healthcare delivery. A scoping review is a well-suited methodology to effectively aggregate and

analyze the breadth of evidence pertaining to this subject.^{16,17} This type of review is particularly suited as the topic has not been extensively explored in the current literature. The planned scoping review will focus on dental practitioners to provide evidence specific to dental practitioners' perspectives and attitudes toward OMT in dentistry.

Review Question

The primary aim of this scoping review is to map the evidence regarding dental practitioners' perspectives and attitudes of OMT in dentistry. The research team also identified the following subquestions:

1. What are the perspectives and attitudes of dental practitioners towards using OMT as a management option for certain dental conditions and diseases?
2. What are the barriers to dental practitioners implementing OMT?
3. What are the facilitators for implementing OMT by dental practitioners?

As conducting a scoping review is iterative, the research team will become increasingly familiar with the topic. Therefore, the research question and subquestions may be revised and amended.

Materials and Methods

The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews¹⁸ guideline and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR)¹⁹ guideline (**Appendix A**). The JBI methodology for scoping reviews¹⁸ guideline helps to establish a precise definition of scope, alongside detailed and reproducible methods.²⁰ This approach is particularly helpful in integrating various types of evidence. Furthermore, the JBI guideline¹⁸ sets out systematic processes for data extraction and synthesis, which are instrumental in formulating meaningful and relevant conclusions that can significantly influence both practice and policy.

Eligibility Criteria

Following a preliminary search on multiple databases, eligibility criteria are set using the PCC (Population, Concept, Context) mnemonic with 'type of evidence sources' as an additional category in line with the JBI methodology for scoping reviews.¹⁸

Population

This scoping review will include dental practitioners who provide oral health assessments, care planning,

or treatments as a part of their professional roles. The dental practitioners will include but are not limited to general dentists, orthodontists, paediatric dentists, periodontists, other dental specialists, oral health therapists, dental therapists, dental hygienists, and orthodontic auxiliaries. Undergraduate and postgraduate students of dental-related programmes will be considered for this review.

Concept

This scoping review will encompass studies that address the perspectives and attitudes of dental practitioners regarding the uses of OMT to manage specific dental conditions and diseases. The uses will include but are not limited to orthodontic therapies, management of sleep apnea, and postural therapies. Potential barriers and facilitators of OMT will also be mapped.

Although there are differing understandings of OMT, this review will adopt the definition from the International Association of Orofacial Myology.²¹ It is defined as “an individualized program to help the patient retrain (the) adaptive patterns of muscle function, and to create and maintain a healthy orofacial environment”.²¹ Treatments include, but are not limited to, normalizing tongue and lip resting postures, establishing nasal breathing patterns, and addressing harmful oral habits.²¹

Context

This scoping review will include all international dental-related settings, including private and public sectors and academic institutes.

Types of evidence

This scoping review will consider primary studies including quantitative, qualitative, and mixed-method studies. Relevant reviews will be labelled separately to identify relevant primary sources. Due to resource constraints, particularly in terms of translation and multilingual expertise, this review will consider studies published in English only.

Search strategy

A three-step search method recommended by the JBI scoping review¹⁸ guideline will be implemented across five databases. A preliminary search was conducted on MEDLINE, CINAHL, JBI Evidence Synthesis, JBI Systematic Review register, Open Science Framework Database, and PROSPERO to identify any existing or in-progress systematic or scoping reviews on the topic. After confirming the absence of such a review, a comprehensive search strategy (**Table 1**) was developed based on key terms contained in the titles, abstracts, keywords, and subject headings of relevant literature. A second

search will be conducted across five databases (MEDLINE via EBSCO, CINAHL via EBSCO, & Dentistry & Oral Science Source via EBSCO, Cochrane Library via Ovid, and Scopus) employing the developed search strategy. The search strategy will be adapted to suit each database's requirements. The first 100 items from Google Scholar will be explored to locate any grey literature not indexed in the stated databases. After full-text screening, a third search will be conducted by screening reference lists of all included sources and relevant reviews.

Source of evidence selection

After completing the search, all identified citations will be collated and uploaded into the reference management software EndNote v.X9 (Clarivate Analytics, PA, USA), and duplicates will be removed. Subsequently, the records will be uploaded into the web-based review software tool Covidence (Veritas Health Innovation, Melbourne, Australia) for source selection.

Source selection will proceed in two stages: titles and abstracts screening, followed by full-text screening. The research team piloted both title and abstract screening and full-text screening on 20 randomly selected articles from the preliminary search. Any discrepancies were thoroughly discussed, and the eligibility criteria (**Table 2**) were revised. The revision included clarifying the definition of the population group.

The first stage will involve screening titles and abstracts against the eligibility criteria by two independent reviewers. In cases of disagreement, these will be resolved through discussion among the entire research team. The full text of included citations will be searched and uploaded to Covidence. Then, the second stage will involve screening full texts by two independent reviewers. If, after all efforts, a full-text version in English cannot be obtained for any of the citations, they will be marked as 'full-text not available' and excluded from the study at the second stage. Again, any disagreement will be resolved through discussion by the research team. Reasons for any exclusion during full-text screening will be reported with the findings. Lastly, references of included sources and relevant reviewers will be screened to identify relevant sources. The search results and the study inclusion process will be reported in full in the final scoping review and presented in a PRISMA-ScR flow diagram.¹⁹ Included sources will be critically appraised using the JBI critical appraisal tools, which are published publicly in the form of checklists for different types of evidence sources.²² This step will determine the extent to which a study has addressed the risk of bias in its design, conduct, or analysis.²³

Table 1: Search strategy for MEDLINE, CINAHL, & Dentistry & Oral Sciences Source via EBSCO (searched on 14 November 2023)

Number	Query	Source number
1.	"dental practitioner*" or "dental professional*" or "oral health practitioner*" or "oral health professional*" or dentist* or orthodontist* or "dental specialist*" or "oral health therapist*" or "dental hygienist*" or "dental therapist*" or "dental nurse*" or "orthodontic auxiliar*"	906,549
2.	"orofacial myofunctional therap*" or OMT or "orofacial myofunctional exercis*" or "myology therap*" or "orofacial myolog*" or "oral myotherap*" or "functional orofacial therap*"	3,189
3.	1 AND 2	182

Table 2: Eligibility criteria

	Inclusion criteria
Population	<ul style="list-style-type: none"> Dental practitioners who provide oral health assessments, care planning, or treatments as a part of their professional roles Undergraduate and postgraduate students of dental-related programmes
Concept	<ul style="list-style-type: none"> Studies addressing perspectives and attitudes of dental practitioners adopting orofacial myofunctional therapy Studies addressing barriers and facilitators of orofacial myofunctional therapy
Context	<ul style="list-style-type: none"> International dental-related settings, including private and public sectors Dental academic institutes
Type of evidence	<ul style="list-style-type: none"> Primary studies including quantitative, qualitative, and mix-methods studies Studies with English full-texts available

Data extraction

Data will be extracted from selected reports independently by two reviewers using the data extraction table, and then the research team will combine two data sets. Data extracted will include details about the population, concept, context, study methods and key findings relevant to the dental practitioners' perspectives and attitudes toward using OMT in managing certain oral health conditions and diseases. The data extraction table (**Appendix B**) is adapted from the JBI methodology for scoping review guideline¹⁸ and modified to meet the specific requirements of the review. The table has been piloted by all research team members using three randomly selected sources from the preliminary search. The research team discussed the data extraction process and any difficulties encountered, and the form was revised. The

modifications included wordings of concept subheadings and the addition of the note section.

Data analysis and presentation

Extracted data will be exported from Covidence into Microsoft Excel (Microsoft, WA, USA) and then read and familiarized. The extracted data will be displayed in a tabulated format, supplemented with a descriptive summary, aligning with the objectives of this scoping review.

Ethics and dissemination

This review will collect information from previously conducted research, therefore, ethics approval is not required. Findings will be disseminated through publication in academic journals and presentations at conferences.

CONCLUSION

A scoping review is crucial to determine the role of OMT in the management of OMD by dental practitioners. This scoping review aims to clarify the understanding of OMT on addressing dental issues like malocclusions, as well as diseases including dental caries and periodontal disease. Through this process, we intend to explore the barriers and facilitators that dental practitioners encounter in incorporating OMT into their treatment plans. The findings will guide specific approaches that would promote acceptance of OMT among dental practitioners. This investigation will foster the integration of OMT into routine dental care, potentially revolutionizing the management of various dental conditions and improving overall oral health outcomes.

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<https://doi.org/10.11124/JBIES-22-00224>
- Author Contributions:** Conceptualization: HH, JM; Study design: HH, MJ; Writing/manuscript preparation: HH, MH; Critical revision: HH
- Funding Sources and Conflicts of Interest:** none

Appendix A: PRISMA-ScR checklist

See pages 8 and 9.

Appendix B: Data Extraction Table

General information	
Title	
Authors	
Year of publication	
Aims and objectives	
Study method (quasi-experimental study, interviews, etc)	
Methods	
Population	
Sample size (if reported)	
Participants' demographics (professions, experiences, etc.)	
Context	
Setting (country, public dental setting, private dental setting, university, etc.)	
Concept	
Perspectives and attitudes towards orofacial myofunctional therapy	
Barriers to implementing orofacial myofunctional therapy	
Facilitators for implementing orofacial myofunctional therapy	
Other information	
Reported limitation of the study (if reported)	
Other notes	

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	



SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	
Limitations	20	Discuss the limitations of the scoping review process.	
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med.* 2018;169:467–473. doi: 10.7326/M18-0850.

