A Survey on Dentists' Awareness and Perceptions Regarding the Role of Physiotherapy in The Management of Temporomandibular Disorders in Kedah, Malaysia

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ABSTRACT:

Background: Temporomandibular disorders (TMDs) are multifactorial musculoskeletal conditions affecting the temporomandibular joint and associated structures, often resulting in pain and functional limitations. Physiotherapy has emerged as an effective conservative treatment approach; however, its utilization in TMD management remains limited due to inadequate awareness and referral practices among dentists. Objective: This study aimed to assess dentists' awareness, perceptions, and referral practices regarding the role of physiotherapy in the management of temporomandibular disorders in Kedah, Malaysia. Methods: A cross-sectional survey was conducted among 30 registered dentists working in private dental clinics in Kedah, Malaysia. Participants were recruited using convenience sampling. Data were collected through a structured, self-administered online questionnaire assessing demographic characteristics, awareness of TMDs, knowledge of physiotherapy interventions, referral practices, attitudes toward interdisciplinary collaboration, and exposure to physiotherapy services. Descriptive statistics were analysed using SPSS. Results: Most respondents demonstrated good awareness of TMD symptoms and contributing factors, with 96.7% recognizing common symptoms such as headache, ear pain, and jaw clicking, and 93.3% acknowledging both joint and muscular involvement in TMDs. Although 93.3% were aware of physiotherapy's role in musculoskeletal healthcare, only 16.7% had referred TMD patients to physiotherapists. Positive attitudes toward interdisciplinary collaboration were observed, with 66.6% agreeing that dentists and physiotherapists should collaborate more closely. Furthermore, 96.7% expressed interest in receiving more information about physiotherapy, and all respondents supported the inclusion of physiotherapy-related education in dental curricula. Limited exposure to physiotherapy services and uncertainty regarding specific

physiotherapy interventions were identified as major barriers to referral. Conclusion: Dentists in Kedah generally possess good awareness of TMDs and demonstrate positive attitudes toward physiotherapy and interdisciplinary management. However, referral practices remain limited due to insufficient exposure, training, and understanding of physiotherapy-specific interventions. Enhancing interprofessional education, promoting collaborative practice, and establishing clearer referral pathways may improve the integration of physiotherapy into TMD management.

Keywords: Temporomandibular disorders, physiotherapy, dentists, awareness, referral practices, interdisciplinary collaboration, Malaysia.

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Introduction

Temporomandibular disorders (TMDs) are a group of neuromuscular and musculoskeletal conditions affecting the temporomandibular joint, masticatory muscles, and surrounding structures. Common symptoms include pain, joint crepitus, and functional limitations affecting activities such as chewing, speaking, and yawning (Almeida, 2023). In severe cases, TMDs may progress to chronic pain, disability, and psychological distress. The condition is multifactorial in nature, involving biomechanical, neuromuscular, psychological, hormonal, and autoimmune factors, requiring a multidisciplinary management approach.

Conventional TMD management mainly focuses on dental and pharmacological interventions including oral splints, analgesics, and muscle relaxants. Although these interventions may provide short-term symptom relief, they often fail to address the underlying musculoskeletal dysfunctions contributing to persistent symptoms (Taqi et al., 2024). Recently, physiotherapy has gained recognition as an effective conservative intervention complementary to dental management. Physiotherapy interventions such as manual therapy, myofascial release, therapeutic exercise, postural correction, and patient education have demonstrated improvements in pain reduction, mandibular function, muscle coordination, and quality of life (Arribas Pascual et al., 2023; Almeida, 2023).

Despite increasing evidence supporting physiotherapy in TMD management, referral rates among dentists remain low due to limited awareness of physiotherapy scope, inadequate understanding of its effectiveness, and lack of structured referral pathways (Nur Ardilla et al., 2020; Yumak & Özdemir Gorgu, 2025). Similar trends have been reported internationally, where most dentists continue to rely primarily on occlusal splints and pharmacological management. In Malaysia, physiotherapy referrals for TMD management remain uncommon, potentially leading to delayed recovery and poorer functional outcomes.

As dentists are commonly the first healthcare professionals managing patients with TMDs, their awareness, perceptions, and referral practices play an important role in determining access to holistic care. Therefore, this study aims to explore the knowledge, perceptions, and referral practices of dentists in Kedah regarding the role of physiotherapy in the management of temporomandibular disorders.

Methods

Study Design and Setting

This study adopted a cross-sectional survey design involving registered dentists working in private dental clinics in Kedah, Malaysia. Data were collected at a single point in time using a

self-administered online questionnaire distributed via email. The study aimed to evaluate dentists' awareness, perceptions, and referral practices regarding the role of physiotherapy in the management of temporomandibular disorders (TMDs).

Participants and Sampling

Convenience sampling was employed to recruit 30 registered dentists practicing in private dental clinics in Kedah. Eligible participants included dentists holding a valid Annual Practicing Certificate (APC) issued by the Malaysian Dental Council and those who voluntarily consented to participate. Dentists working in government sectors, students, interns, dentists with physiotherapy qualifications, and incomplete responses were excluded from the study.

Data Collection Procedure

A structured questionnaire was developed based on previous literature and validated by academic experts (Gadotti et al., 2018; Shaheen et al., 2020; Farooq et al., 2021; AlKofide et al., 2023). The questionnaire was distributed electronically through Google Forms via email. Participants were given three weeks to complete the survey, and reminder messages were sent weekly to improve response rates. All responses remained anonymous to ensure confidentiality.

Materials and Instruments

The primary research instrument was a structured questionnaire designed to assess demographic characteristics, awareness, perceptions, exposure, and referral practices related to physiotherapy management of TMDs. Additional materials included participant information sheets, consent forms, digital communication tools, and SPSS software for data analysis.

Statistical Analysis

Data were analysed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics including frequencies, percentages, means, and standard deviations were used to summarise respondents' demographic information, awareness levels, perceptions, and referral practices regarding physiotherapy in TMD management.

Data Analysia and Interpretation

Table 1: Demographic Data

Demographic variable	Categories (n = 30)	Count	Percentage (%)
Age	Under 35	24	80.0
	35 and above	6	20.0
Gender	Male Female	19	63.3
		11	36.7
Years in dental practice	≥ 5 years	11	63.3
	< 5 years	29	36.7
Educational qualification	Bachelor's (e.g., BDS, DDS) Postgraduate	29	96.7
	(Master's, PhD, specialty)	1	3.3
Area of practice	General dentist Dental specialist	29	96.7
		1	3.3
Practice location	Urban	23	76.7
	Non-urban (suburban/rural)	7	23.3

Table 2: Referral Practices and Awareness of Physiotherapy

Question	Response	Frequency (n)	Percentage (%)
Often encounter TMD patients in practice?	Yes	13	43.3
	No	17	56.7
Referred TMD patient to another healthcare professional?	Yes	7	23.3
	No	23	76.7
Referred TMD patient to a physiotherapist?	Yes	5	16.7
	No	25	83.3
Aware physiotherapy is involved in musculoskeletal healthcare?	Yes	28	93.3
	No	2	6.7

Table 3: General Awareness of TMD

Statement	True (%)	False (%)	Not Sure (%)
TMD can be caused by psychological stress	86.7	0.0	13.3
TMD may present with headaches, ear pain or jaw clicking	96.7	0.0	3.3
Bruxism is a major contributing factor to TMD	80.0	0.0	20.0
TMD symptoms are always due to dental malocclusion	33.3	43.3	23.3
TMD can involve both joint and muscular components	93.3	0.0	6.7

Table 4: Understanding of Physiotherapy Roles and Treatments

Knowledge/awareness statement	True (%)	False (%)	Not Sure (%)
Physiotherapists manage jaw-related musculoskeletal conditions	60.0	0.0	40.0
Physiotherapy includes manual therapy and soft tissue release	60.0	0.0	40.0
Physiotherapists provide posture and jaw ergonomics education	83.3	3.3	13.3
Only role of physiotherapy is prescribing exercises	13.3	56.7	30.0
Physiotherapists teach stress management techniques	70.0	0.0	30.0
Dry needling may be used in TMD physiotherapy	50.0	3.3	46.7
Dentist referral is required before physiotherapy	40.0	30.0	30.0
Physiotherapy only after medication fails	36.7	33.3	30.0
Physiotherapists participate in interdisciplinary care	83.3	0.0	16.7
Physiotherapy is a first-lineconservative treatment	76.7	0.0	23.3

Table 5: Attitudes toward Interdisciplinary Collaboration

Statement	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean
Physiotherapy plays a key role in managing TMD	6.7	3.3	40.0	23.3	26.7	3.60
Confident referring TMD patients to a physiotherapist	6.7	16.7	30.0	33.3	13.3	3.30
Dentists and physiotherapists should collaborate more	3.3	3.3	26.7	43.3	23.3	3.80
Feel well-informed about physiotherapy in TMD	30.0	30.0	23.3	6.7	10.0	2.37
Interested in learning more about physiotherapy for TMD	0.0	6.7	26.7	33.3	33.3	3.93

Table 6: Exposure and Experience

Item	Yes (%)	No (%)
Collaborated with a physiotherapist	23.3	76.7
Received training related to physiotherapy for TMD	20.0	80.0
Attended CPD/seminars on interdisciplinary TMD care	30.0	70.0
Would like more information on physiotherapy	96.7	3.3
Patients reported physiotherapy care	23.3	76.7
Keep up with current TMD research	36.7	63.3
Physiotherapy underutilized in dental practice	96.7	3.3
Aware of nearby physiotherapists managing TMD	16.7	83.3
Physiotherapy should be included in dental education	100.0	0.0

Results

The demographic findings showed that most respondents were below 35 years of age, predominantly male, and had more than five years of clinical experience. The majority were general dentists holding bachelor's degrees and practicing in urban areas, indicating that the study mainly represented young to middle-aged private dental practitioners in urban settings. The findings on awareness and referral practices demonstrated that most dentists were aware of the role of physiotherapy in musculoskeletal healthcare. However, despite nearly half of the respondents managing patients with temporomandibular disorders (TMDs) in clinical practice, only a small proportion had referred patients to physiotherapists. This suggests a gap between awareness and actual referral practices. Regarding knowledge of TMD-related factors and symptoms, most respondents correctly identified psychological stress, bruxism, joint and muscular involvement, and common symptoms such as headache, ear pain, and jaw clicking as associated with TMD. However, uncertainty remained concerning the relationship between dental malocclusion and TMD symptoms. The results also revealed moderate understanding of the physiotherapy role in TMD management. Although most respondents agreed that physiotherapy is part of interdisciplinary care and considered it a first-line conservative treatment, many participants were uncertain about specific physiotherapy

interventions such as manual therapy, soft tissue release, and dry needling. Some respondents also believed that referral from dentists was necessary before physiotherapy treatment could begin. Attitudes towards physiotherapy and interdisciplinary collaboration were generally positive. Respondents agreed that physiotherapy plays an important role in TMD management and supported collaboration between dentists and physiotherapists. However, confidence in referring patients to physiotherapists remained only moderate, likely due to limited exposure and understanding of physiotherapy practice. Nevertheless, most participants expressed strong interest in learning more about physiotherapy. In terms of exposure and experience, only a small proportion of dentists had previously collaborated with physiotherapists. Despite this limited experience, nearly all respondents believed that physiotherapy is underutilized in dental practice and agreed that physiotherapy-related education should be incorporated into dental training. Overall, the findings indicate good general awareness and positive attitudes toward physiotherapy among dentists but limited practical exposure and referral practices remain important barriers to interdisciplinary management of TMDs.

Discussion

This chapter discusses the main findings of the study based on questionnaire data exploring dentists' awareness, referral practices, attitudes, knowledge, and exposure related to physiotherapy in the management of temporomandibular disorders (TMDs). A total of 30 dentists participated, with the majority being under 35 years of age, predominantly male, mostly general practitioners, and largely working in urban settings, with a mix of clinical experience and mostly bachelor-level qualifications. Overall, the findings indicated that dentists demonstrated a good general awareness of physiotherapy as part of musculoskeletal healthcare and commonly encountered TMD cases in their practice. They were also able to identify key features of TMDs such as jaw pain, clicking, headache, ear pain, and contributing factors including stress, bruxism, and joint-muscle involvement. However, understanding of the multifactorial nature of TMDs was inconsistent, as some respondents still strongly associated TMDs solely with dental malocclusion, reflecting variability in knowledge depth.In terms of physiotherapy-related knowledge and practice, most respondents recognised physiotherapy as a conservative and multidisciplinary approach in TMD management and acknowledged its role in interdisciplinary care. However, knowledge regarding specific physiotherapy interventions such as manual therapy, soft tissue techniques, and trigger point management was limited and varied among respondents, along with uncertainty about appropriate referral timing and clinical indications. This highlights a gap between general awareness and detailed understanding of physiotherapy scope in TMD care. Despite this, referral practices to physiotherapy were relatively low, indicating that physiotherapy is not yet routinely integrated into dental management pathways for TMD patients.Regarding attitudes, dentists generally expressed positive perceptions toward physiotherapy and strongly supported interdisciplinary collaboration between dentists and physiotherapists. They agreed that physiotherapy plays an important role in TMD management and showed high interest in learning more about its applications. However, their confidence in making referrals and perceived knowledge levels were moderate to low, suggesting variability in readiness for active collaboration. Exposure to physiotherapy services was also limited, with few respondents reporting prior collaboration, formal training, or attendance at relevant seminars. Nevertheless, most participants acknowledged that physiotherapy is underutilised in dental practice and strongly supported its inclusion in dental curricula to improve future interdisciplinary care.When compared with previous studies, the findings are consistent with existing literature,

which also reports good awareness but limited referral practices, insufficient detailed knowledge of physiotherapy modalities, and a lack of interprofessional education among dental professionals. Studies have similarly highlighted that despite positive attitudes toward collaboration, practical integration of physiotherapy into dental practice remains limited. Overall, this study confirms that all research objectives were achieved by demonstrating adequate awareness of TMDs and physiotherapy roles, identifying low referral practices, evaluating generally positive but variable attitudes toward collaboration, and highlighting limited exposure and experience with physiotherapy services among dentists.

Conclusion

This study examined dentists' awareness, attitudes, referral practices, and exposure to physiotherapy in the management of temporomandibular disorders (TMDs) using a structured questionnaire among dentists in Kedah, and all research objectives were successfully achieved. Overall, the findings showed that dentists generally have good awareness of TMDs and understand the role of physiotherapy in musculoskeletal care, with the ability to identify common symptoms and contributing factors. In addition, attitudes toward physiotherapy and interdisciplinary collaboration were largely positive, with strong interest in gaining further knowledge about collaborative management. However, despite this positive awareness and attitude, there remains a clear gap between knowledge and clinical practice, as referral rates to physiotherapists were low and exposure to interdisciplinary training and collaboration was limited. These results highlight the need for improved education, clearer referral pathways, and stronger interprofessional engagement in clinical settings. The study provides important baseline information on dentists' perspectives in the local context, which may help guide future educational and clinical improvements, although the findings should be interpreted in light of limitations such as small sample size, self-reported data, and limited geographical coverage. In conclusion, while the study confirms adequate awareness and positive attitudes, it also identifies important gaps in practice and exposure, and recommends further research with larger and more diverse samples to strengthen interdisciplinary managemen of TMD

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