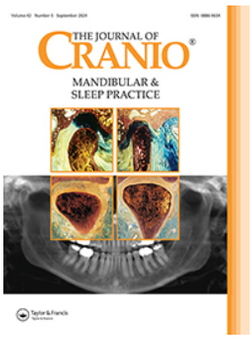

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ABSTRACT

Objective: To present a list of key points for good Temporomandibular Disorders (TMDs) clinical practice on behalf of the International Network for Orofacial Pain and Related Disorders Methodology (INfORM) group of the International Association for Dental, Oral and Craniofacial Research (IADR).

Methods: An open working group discussion was held at the IADR General Session in New Orleans (March 2024), where members of the INfORM group finalized the proposal of a list of 10 key points.

Results: The key points covered knowledge on the etiology, diagnosis, and treatment. They represent a summary of the current standard of care for management of TMD patients. They are in line with the current need to assist general dental practitioners advance their understanding and prevent inappropriate treatment.

Conclusions: The key points can be viewed as a guiding template for other national and international associations to prepare guidelines and recommendations on management of TMDs adapted to the different cultural, social, educational, and healthcare requirements.

KEYWORDS

Bruxism; good practice; guidelines; orofacial pain; standard of care; temporomandibular disorders; TMJ

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Introduction

Temporomandibular disorders (TMDs) are a heterogeneous group of conditions affecting the temporomandibular joints (TMJs), the jaw muscles, and the related structures. TMDs are associated with clinical signs and symptoms, such as functional limitation and joint sounds, muscle and/or joint pain upon palpation and during function, amongst others [1,2].

Historically, the etiology of TMDs has been linked to imperfections of the dental occlusion, TMJ condyle position, and/or muscle imbalance, which have thus been viewed as therapeutic targets by generations of dental professionals. This gave life to many theories, born under the precepts of the so-called "gnathology", which were never validated. The benign and positive natural evolution of most symptoms related to TMD over time, common to many other musculoskeletal pain conditions, led to confirmation bias within some parts of the dental profession and created the risk of adopting irreversible dentally based approaches [3,4].

Research has shown that the etiology of TMDs is actually linked to a combination of biopsychosocial factors [5]. A careful standardized approach based on history taking, a clinical examination performed by a trained examiner, and psychosocial evaluation represents the basis for a differential diagnosis [6]. The diagnostic process can selectively be implemented with effective imaging prescription, that is, reserved for situations where the imaging may influence diagnosis or treatment [7]. There is a lack of evidence supporting the use of electronic and/or mechanical devices in either the diagnostic or treatment phase [8].

Patient management should embrace a biopsychosocial approach in such a way that practitioners providing care to TMD patients should use a combination of orthopedic, neurological, and psychological strategies [9–12]. Cognitive-behavioral and supported self-management recommendations are key principles and must be part of any treatment regimen alongside physiotherapy. Second-line interventions include a trial of medications that exert their therapeutic effect through neuromodulation, for example decreasing excitatory neurotransmitter release or action, or by changing the properties of nociceptive neurons or pathways. The temporary use of an oral appliance over a 24-h day can also be considered, such as nighttime use. Only very infrequently, and in very selected cases, are surgical interventions indicated.

Proper training is thus required for dental professionals to avoid focusing TMD practice on outdated, unproven, or refuted concepts. This will then help reduce the chance of diagnostic delay, inappropriate treatment, and thereby the risk of iatrogenic chronification [13]. Despite the evidence-based knowledge of the above issues that has developed during the last few decades, these general principles have never been summarized with the goal of providing a short synopsis and a list of key points for all health practitioners in search of a "white paper" document on good clinical practice. The only previous attempt with a similar goal as this paper was published by the American Association for Dental Research summary statement almost a decade ago [14].

Material and methods

An open workshop was organized as a satellite symposium on behalf of the International Network for Orofacial Pain and Related Disorders Methodology (INfORM) group of the International Association for Dental, Oral and Craniofacial Research (IADR) during the IADR General Session in New Orleans that was held in March 2024. Before the event, the coordinators of the project (D.M., J. D., B.H.H., S.D.B.) drafted a bulleted list of 10 points to summarize the main aspects of TMD etiology, diagnosis, and treatment. The draft was circulated via email between the four of them in the weeks preceding the event.

The workshop was divided in three parts: initially, the draft was read aloud for the participants' convenience; then, participants were split in three working groups of 10–12 individuals who, under the supervision of one of the project coordinators (J.D., B.H.H., S.D.B.), debated on if and how the summary sentences might be adjusted. The chairman of the event (D.M.) provided assistance to all groups throughout the discussion phase. As an instruction, the workshop participants were told that the final by-product of their work should contain 10 key points, which were divided as follows: one statement on general principles, two statements on etiology, three statements on diagnosis, three statements on treatment, one statement on TMDs within the broader aspects of orofacial pain. Each group had 60 min for discussion. After that, the supervisors of the groups summarized the proposals of their group. As the final step, the original draft was adjusted under the supervision of an English mother-tongue project coordinator (J.D.) by reading it aloud and fine tuning it by consensus with all the participants. A definitive list of 10 key points was then prepared and approved.

In the weeks following the IADR General Session, the leading supervisor drafted this paper, which was circulated among all the authors for a final check before definitive approval.

Results

As a result of the above procedures, the INfORM group of the IADR proposes this list of 10 key points for good practice in the field of TMDs, which represents a summary of the current standard of care for TMD management and patients' needs [15–23]:

(1) Patient-centered decision-making alongside patient engagement and perspective is critical to manage TMDs, with management being the process from history through examination into diagnosis and then treatment. Expectations should focus on learning to control and manage the symptoms and decrease their impact on the individual's everyday life.
(2) TMDs are a group of conditions that may cause signs and symptoms, such as orofacial pain and dysfunction of a musculoskeletal origin.
(3) The etiology of TMDs is biopsychosocial and multifactorial.
(4) Diagnosis of TMDs is based on standardized and validated history taking and clinical assessment performed by a trained examiner and led by the patient perspective.
(5) Imaging has been proven to have utility in selected cases but does not replace the need for careful execution of history taking and clinical examination. Magnetic Resonance Imaging is the current standard of care for soft tissues and Cone Beam Computerized Tomography for bone. Imaging should only be performed when it has the potential to impact the diagnosis or treatment. Timing of imaging is important and so is the cost:benefit:risk balance.
(6) The evidence base for all interventions or devices should be carefully considered before their implementation over and above normal standard of care. Knowledge on developments in the field should be kept up to date. Currently, technological devices to measure electromyographic activity at chairside, to track jaw motion, or to assess body sway, amongst others, are not supported.
(7) TMD treatment should aim to reduce the impact of pain and decrease functional limitation. Outcomes should be evaluated also in relation with the reduction of exacerbations, education in how to manage exacerbations, and improvement in quality of life.
(8) TMD treatment should primarily be based on encouraging supported self-management and conservative approaches, such as cognitive-behavioral treatments and physiotherapy. Second-line treatment to support self-management includes provisional, interim, and time-limited use of oral appliances. Only very infrequently, and in very selected cases, are surgical interventions indicated.
(9) Irreversible restorative treatment or adjustments to the occlusion or condylar position are not indicated in management of the majority of TMDs. The exception to this may be an acute change in the occlusion, such as in the instance of a high filling or crown with TMD-like symptoms developing immediately following these procedures or a slowly progressing change in dental occlusion due to condylar diseases.
(10) The presence of complex clinical presentations with uncertain prognosis, such as in the case of concurrent widespread pain or comorbidities, elements of central sensitization, long-lasting pain, or history of previous failed interventions, should lead to the suspicion of chronification of TMDs or non-TMD pain. Referral to an appropriate specialist is thus recommended; the specialty will be geographic-specific as not all countries have a specialty of orofacial pain.

Conclusions

The key points for good clinical TMD practice based on standard of care proposed as an official document by the INfORM group of the IADR cover knowledge on the etiology, diagnosis, and treatment of TMDs. They represent a summary of the current standard of care for management of TMDs and are in line with the current need to assist general dental practitioners advance their understanding and prevent inappropriate treatment. The key points can be viewed as a guiding template for other national and international associations to prepare guidelines and recommendations adapted to the different cultural, social, educational, and healthcare requirements around the world.

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