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ORIGINAL ARTICLE

Simplified Anxiety Scale (SAS-3): Development, Psychosocial Justification, and Clinical Application in Patients with Orofacial Pain

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Abstract

Orofacial pain (OFP) and temporomandibular disorders (TMDs) are complex conditions whose chronicity and severity are strongly influenced by psychosocial factors, notably anxiety. The assessment of these factors in dental practice is hampered by the length of traditional instruments (e.g., GAD-7, HADS), creating a gap between clinical necessity and application feasibility. This article presents the development of the Simplified Anxiety Scale (SAS-3), a brief, three-item screening tool that assesses the affective, cognitive, and somatic domains of anxiety on a 5-point frequency scale (total score 0-12). The development methodology was based on a clinical-rational approach, with item selection from validated scales and the definition of proportional cutoff points to classify anxiety as mild, moderate, relevant, or severe. The SAS-3 is justified not only by its practicality but also by its psychosocial relevance, promoting an approach that considers the impact of adverse childhood experiences and gender inequalities in the manifestation of chronic pain. The scale was designed to be integrated into clinical protocols, facilitating decision-making, interdisciplinary referrals, and the humanization of care. Although formal psychometric validation is required, the SAS-3 represents a pragmatic advancement for incorporating the emotional dimension into orofacial pain management.

Keywords

Orofacial Pain, Temporomandibular Joint Disorders, Anxiety, Psychosocial Screening, Biopsychosocial Model, Assessment Scales.

Introduction

Orofacial pain (OFP) and temporomandibular disorders (TMDs) represent complex multifactorial clinical conditions, often exacerbated by emotional and psychosocial factors [1,2]. Among these, anxiety has emerged as one of the most prevalent and impactful variables, associated with greater pain intensity, functional limitation, and reduced quality of life [3,4]. Growing evidence indicates that the presence of psychological distress not only amplifies pain perception but also contributes to its chronification and resistance to conventional treatments [5,6]. Although anxiety assessment is fundamental in the management of TMD patients [7], traditional instruments like the Generalized Anxiety Disorder 7-item (GAD-7) [1] and the

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Hospital Anxiety and Depression Scale (HADS) are often unfeasible in dental clinical practice. Their application in short appointments necessitates brief, accessible screening tools with language applicable to primary care and high-demand settings [8,9]. Understanding chronic pain requires an analysis that transcends purely biomedical logic [10]. Growing evidence demonstrates that adverse childhood experiences (ACEs), such as emotional neglect or violence, significantly increase vulnerability to developing chronic pain and anxiety disorders in adulthood [11,12]. This perspective, aligned with the biopsychosocial model, is indispensable for inclusive and effective social care [5]. The literature has also highlighted that women represent the majority of TMD cases [13,14]. It is imperative to move beyond a reductionist view of pain in women and recognize the role of gender inequalities, diagnostic invisibility, and institutional neglect in perpetuating female suffering in orofacial pain [5,13]. Given this scenario, this article proposes the Simplified Anxiety Scale (SAS-3), an easy-to-apply clinical tool comprising three core items. The SAS-3 seeks to fill the existing gap in psychosocial screening in routine dental practice, with special attention to equity, intersectionality, and accessibility.

Methods

Scale development and structure

The Simplified Anxiety Scale (SAS-3) was developed using a clinical-rational approach. The methodological process involved three main stages:

- **Identification of central domains:** Literature analysis to identify anxiety domains with the greatest functional impact on TMD patients.
- **Criterion-based item selection:** Choosing three items that represent essential domains, inspired by robust psychometric instruments.
- **Definition of scores and cutoff points:** Establishing a scoring and classification system based on percentage proportionality.

The three SAS-3 items were designed to capture distinct and complementary dimensions of the anxious experience:

- **Item 1: Affective/Emotional Dimension** (nervousness, constant state of alert), inspired by GAD-2 and PHQ-4 [1,15].
- **Item 2: Cognitive Domain** (excessive and uncontrollable worries), a core symptom of Generalized Anxiety Disorder (GAD) according to GAD-7 and DSM-5 [1].
- **Item 3: Somatic Manifestation** (physical symptoms such as sweating, chest tightness, tremors), a relevant component of HADS-A and of great clinical importance at the interface between anxiety and pain [16].

Each item is rated on a five-point frequency scale, referring to the patient's experience over the past two weeks: 0 (Never), 1 (Rarely), 2 (Several days), 3 (Frequently), and 4 (Nearly every day). The total score ranges from 0 to 12. The final instrument is presented in Appendix A.

Psychosocial Justification and Clinical Relevance

Anxiety is recognized as one of the main modulators of the pain experience in patients with TMD and chronic orofacial pain [6,15]. In the context of the biopsychosocial model of pain, the assessment of anxious symptoms becomes an indispensable component of the interdisciplinary therapeutic plan [7,10].

The SAS-3 addresses this need by offering objective and standardized psychosocial screening. By classifying anxiety into four gradual levels, the scale not only guides clinical conduct but also encourages extended listening and early referral of patients requiring specialized support [7]. In this way, it contributes to aligning dental practice with the promotion of comprehensive health and the humanization of chronic pain care [5,17].

Clinical Interpretation, Applications, and Limitations

The SAS-3 was conceived as a tool that guides therapeutic decisions. Table 1 summarizes the score ranges, their interpretation, and suggested courses of action.

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The primary application of the SAS-3 is in the clinical dental context. However, it is crucial to acknowledge its limitations. As a screening instrument, it does not replace a formal psychological evaluation nor does it allow for differential diagnosis between anxiety disorders [18]. Furthermore, the scale has not yet undergone formal psychometric validation and should be considered a preliminary clinical tool.

Discussion

The creation of the SAS-3 represents an effort to operationalize psychosocial assessment in dentistry [16]. The scale offers a pragmatic solution to the gap between the complexity of traditional scales and the clinical need for quick and effective assessment [9]. The tripartite structure (affective, cognitive, somatic)

Table 1: Classification, clinical description, and suggested conduct for the SAS-3.

Score (0-12)	Classification	Suggested Conduct
0-2	Mild	Monitoring and basic guidance
3-5	Moderate	Clinical listening, possible brief counseling
6-8	Relevant	Positive screening for anxious distress
9-12	Severe	Refer for specialized psychological evaluation

is clinically relevant, as these domains are intrinsically linked to the perpetuation of chronic pain [19,20]. This work reinforces the importance of a critical and contextualized approach that considers adverse life experiences [12,13] and gender biases [4,13] in understanding and treating pain.

Conclusion

The Simplified Anxiety Scale (SAS-3) is proposed as an objective, synthetic, and clinically relevant screening tool, developed to fill a gap in the psychosocial assessment of patients with orofacial pain. Although it requires formal psychometric validation, the SAS-3 represents a pragmatic advancement for incorporating the emotional dimension into routine dental practice, potentially providing the empirical basis for its future validation and solidifying the importance of mental health assessment in chronic pain management.

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Appendix A-Simplified Anxiety Scale (SAS-3) Instrument.

Instructions: Over the past 14 days, how often have you experienced any of the following symptoms?

No.	Symptom	Never (0)	Rarely (1)	Several days (2)	Frequently (3)	Nearly every day (4)
1	Feeling anxious, nervous, or constantly on edge	□	□	□	□	□
2	Difficulty controlling excessive thoughts or worries	□	□	□	□	□
3	Physical symptoms such as sweating, chest tightness, or tremors	□	□	□	□	□

Total score: ____ / 12

Classification and Suggested Conduct:

Total Score	Classification	Suggested Conduct
0-2	Mild	Monitoring and basic guidance
3-5	Moderate	Clinical listening, possible brief counseling
6-8	Relevant	Positive screening for anxious distress
9-12	Severe	Referral for specialized psychological evaluation