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Development and validation of the International Classification for Orofacial Pain Algorithm

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Abstract

Orofacial pain (OFP) encompasses a complex spectrum of conditions that present significant diagnostic challenges. The International Classification of Orofacial Pain (ICOP), introduced in 2020, offers a comprehensive diagnostic framework encompassing nearly 200 distinct OFP conditions. However, its detailed structure can impede practical use in clinical settings. To address this, we developed the International Classification of Orofacial Pain Algorithm (ICOP-AL), a flowchart-based tool designed to simplify the diagnostic process by methodically guiding users through ICOP's hierarchical criteria. International Classification of Orofacial Pain Algorithm integrates well-established diagnostic standards, including those from the International Classification of Headache Disorders, 3rd edition and Diagnostic Criteria for Temporomandibular Disorders, to enhance clinical applicability and diagnostic precision. The algorithm's validity was assessed in a study with 100 anonymized patient cases and further evaluated by clinicians across varied experience levels. The results demonstrated substantial agreement between ICOP-AL-derived diagnoses and expert clinician diagnoses (Cohen's Kappa $\kappa = 0.688$, $P < 0.001$), with ICOP-AL outperforming nonexpert evaluators, thereby underscoring its reliability and potential to standardize diagnostic outcomes across clinical environments. International Classification of Orofacial Pain Algorithm represents a promising step toward improving OFP diagnosis, providing a structured and accessible approach for integrating ICOP into routine clinical practice. Although early results are encouraging, further refinement and real-world validation, particularly for more detailed diagnoses, are necessary to determine its full potential as a diagnostic and educational tool.

Keywords: Validation, Development, International Classification of Orofacial Pain, Algorithm

1. Introduction

Orofacial pain (OFP) encompasses a diverse group of conditions that often present diagnostic challenges due to overlapping symptoms and complex etiologies. To standardize diagnoses and improve patient care, the International Classification of Orofacial Pain (ICOP) was published in *Cephalalgia* in 2020, marking the first internationally accepted classification system dedicated to OFP.[4] International Classification of Orofacial Pain provides detailed criteria for approximately 200 distinct orofacial pain diagnoses, aiming to enhance both research endeavors and clinical management.

International Classification of Orofacial Pain structures OFP into 6 main categories, referred to as first-digit levels:

(1) Orofacial pain attributed to disorders of dentoalveolar and anatomically related structures.
(2) Myofascial orofacial pain.
(3) Temporomandibular joint (TMJ) pain.
(4) Orofacial pain attributed to lesion or disease of the cranial nerves.
(5) Orofacial pains resembling presentations of primary headaches.
(6) Idiopathic orofacial pain.

Each primary category is further divided into subcategories, extending up to seven-digit levels for certain diagnoses, with each additional digit providing increased specificity (**Table 1**). In primary care clinical practice, diagnoses at the first- or second-digit levels are often sufficient. However, specialized settings may require the precision offered by fourth- or fifth-digit level diagnoses. Each diagnosis within ICOP includes a set of criteria that must be met to accurately classify a patient's condition. Notably, assigning higher-digit level diagnoses necessitates the fulfillment of criteria from all preceding levels. For detailed

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Table 1

Hierarchical International Classification of Orofacial Pain for idiopathic orofacial pain.

Level 1	6. Idiopathic orofacial pain
Level 2	6.1. Burning mouth syndrome (BMS)
Level 3	6.1.1. Burning mouth syndrome without somatosensory changes
Level 3	6.1.2. Burning mouth syndrome with somatosensory changes
Level 3	6.1.3. Probable burning mouth syndrome
Level 2	6.2. Persistent idiopathic facial pain (PIFP)
Level 3	6.2.1. Persistent idiopathic facial pain without somatosensory changes
Level 3	6.2.2. Persistent idiopathic facial pain with somatosensory changes
Level 3	6.2.3. Probable persistent idiopathic facial pain
Level 2	6.3. Persistent idiopathic dentoalveolar pain
Level 3	6.3.1. Persistent idiopathic dentoalveolar pain without somatosensory changes
Level 3	6.3.2. Persistent idiopathic dentoalveolar pain with somatosensory changes
Level 3	6.3.3. Probable persistent idiopathic dentoalveolar pain
Level 2	6.4. Constant unilateral facial pain with additional attacks (CUFPA)

It progresses from the broad category (ICOP level 1) to, eg, 6.1 Burning mouth syndrome (ICOP level 2) and its subtypes (ICOP level 3), eg, 6.1.1 Burning mouth syndrome without somatosensory changes.
ICOP, International Classification of Orofacial Pain.

application guidelines, users are encouraged to consult the ICOP user guide.[4]

To ensure consistency and leverage established knowledge, ICOP has integrated preexisting criteria from other authoritative sources. For example, diagnostic criteria for regional myalgias and TMJ pain have been adopted from the Diagnostic Criteria for Temporomandibular Disorders (DC/TMD).[9] Similarly, criteria for orofacial pains that resemble primary headaches reference the International Classification of Headache Disorders, 3rd edition (ICHD-3).[3]

Despite its comprehensive framework, the complexity of ICOP can pose challenges for clinicians seeking to navigate its extensive criteria efficiently. To address this, we have developed a flowchart algorithm designed to guide users systematically through the diagnostic process. The implementation of clinical algorithms has proven effective in enhancing understanding and promoting adherence to best practices in patient care.[2] Our development process mirrors that of the Classification Algorithm for the ICD-11 Chronic Pain Classification (CAL-CP),[6] ensuring a methodical and user-friendly approach.

The aim of this study is to facilitate the integration of ICOP into daily clinical practice by introducing a streamlined algorithm and to evaluate its accuracy in diagnosing OFP conditions.

2. Materials and methods

This study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of University Hospitals Leuven (protocol code S69002, approved April 2, 2024). The development of the International Classification of Orofacial Pain Algorithm (ICOP-AL) was guided by the principles outlined by the Society for Medical Decision Making Committee on Clinical Algorithms,[7] mirroring the approach used in creating the CAL-CP.[6] The goal was to construct a user-friendly algorithm that systematically incorporates all criteria from the ICOP to aid clinicians in diagnosing OFP conditions.

2.1. Algorithm design

To enhance clarity and usability, we integrated standardized symbols and flowchart conventions:

(1) Decision boxes: Represented by green hexagons, these boxes indicate points where a clinical decision is required.
(2) Action boxes: Depicted as orange rectangles, these boxes suggest specific actions to be taken.
(3) Clinical state boxes: Illustrated with blue rounded rectangles, these boxes contain potential diagnoses. The border lines of these boxes transition from dotted to solid as the user approaches a more specific diagnosis, visually guiding the diagnostic process.

The different types of boxes used in the algorithm are illustrated in **Figure 1**. The flow of the algorithm is facilitated by yes/no arrows connecting the boxes, directing the user based on clinical findings. Footnotes are included where additional information or clarification on a diagnosis or decision point is necessary.

Figure 2 presents a segment of the initial decision trunk intended for primary care use. This segment covers broad diagnostic categories and helps clinicians navigate initial assessments. As the algorithm progresses to more specific diagnoses, it begins with clinical state boxes representing conditions, whose criteria have been satisfied in preceding branches. This hierarchical approach ensures that all necessary criteria are systematically evaluated before arriving at a detailed diagnosis.

2.2. Integration of diagnostic criteria

International Classification of Orofacial Pain Algorithm encompasses all diagnostic criteria from the ICOP up to the most detailed level. For category 5, "Orofacial pains resembling

Figure 1. Types of boxes used in ICOP-AL. The green hexagonal box represents a decision box where the clinician determines the presence or absence of a particular criterion. Depending on the clinician's input, the user follows the corresponding yes/no arrow to the next step in the algorithm. Action boxes (orange square boxes) serve as reminders to consider alternative diagnoses if the current pathway does not fully account for the patient's symptoms. Diagnosis boxes (blue rounded boxes) contain hyperlinks in the PDF format, allowing users to navigate to deeper levels of the decision tree with a simple click, thus facilitating access to more detailed diagnostic information. ICOP-AL, International Classification of Orofacial Pain Algorithm.

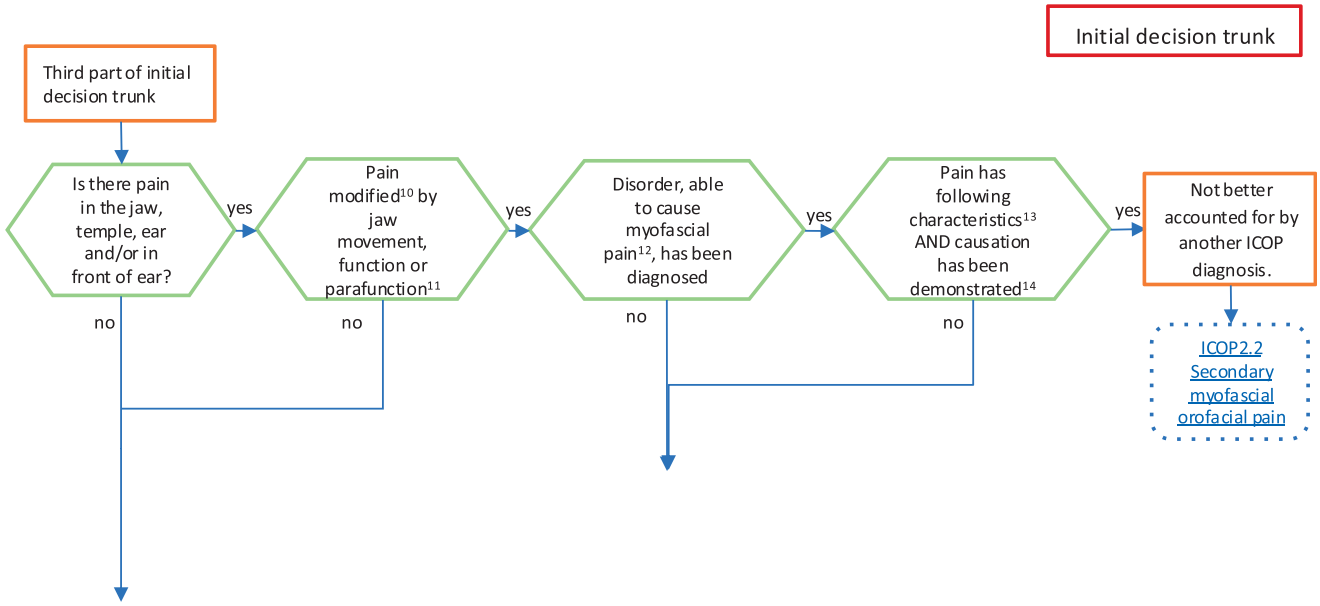

Figure 2. Segment of the initial decision trunk for primary care.

presentations of primary headaches," we incorporated the criteria from the ICHD-3,[3] as referenced by ICOP. The algorithm was structured to follow a logical sequence, reducing redundancy and streamlining the diagnostic pathway. Each pain syndrome concludes with the criterion "Not better accounted for by another ICOP diagnosis," prompting clinicians to consider alternative diagnoses and ensure diagnostic accuracy.

2.3. Algorithm usage

Clinicians begin using the algorithm by assessing the initial criterion presented. Based on the patient's symptoms and clinical findings, they follow the corresponding arrows (yes/no) through subsequent decision points. This process continues until an ICOP diagnosis is reached. If a more detailed diagnosis is desired and available within ICOP, users can utilize embedded hyperlinks to navigate to deeper levels of the decision tree, allowing them to attain the preferred specificity.

2.4. Expert collaboration

The development process involved close collaboration with 8 OFP experts and ICOP authors, all of whom are co-authors of this publication. Multiple meetings were conducted to review and refine the algorithm. The experts provided critical feedback on various aspects, including correcting typographical errors, optimizing the placement and flow of boxes and arrows, and enhancing the overall organization to improve user experience.

2.5. Validation study

To evaluate the accuracy and reliability of ICOP-AL, we conducted a validation study using 100 anonymized patient cases. These cases were selected from patients who visited the University Hospitals Leuven between October 2021 and October 2023 and had all been previously diagnosed by an orofacial pain expert (reference standard). The selection ensured representation across all ICOP diagnostic categories (**Table 2**).

For each patient case, we collected comprehensive information essential for algorithm application:

(1) Pain characteristics: Including site, onset, character, radiation, timing, exacerbating factors, and severity.
(2) General information: Such as age, overall clinical presentation, and current or previous therapies for OFP.

Next, 1 author (H.S.), blinded to the clinicians' original diagnoses, was tasked with applying ICOP-AL to each case to determine a diagnosis independently. This blinding was maintained to prevent bias in the diagnostic process. The diagnoses derived from ICOP-AL were then compared with the clinicians' original diagnoses to assess concordance.

An additional validation study was conducted to assess the diagnostic performance and utility of ICOP-AL among clinicians with varying levels of experience. A subset of 24 anonymized patient cases was presented to 3 distinct groups:

(1) 2 medical students.
(2) 2 general practitioners.
(3) 2 OFP experts.

None of the participants in these groups used ICOP-AL while making their diagnoses. Instead, they relied on their clinical judgment to provide a diagnosis for each case. Each participant was tasked with diagnosing each case up to the third-digit level. Their diagnoses were then compared with diagnoses derived independently by a blinded author (H.S.) using ICOP-AL, and to the original reference standard diagnoses established by expert clinicians.

A scoring system was implemented to quantify diagnostic performance by each evaluator:

(1) 0 points: Incorrect diagnosis.
(2) 1 point: Correct first-digit level diagnosis.
(3) 2 points: Correct second-digit level diagnosis.
(4) 3 points: Correct third-digit level diagnosis.

This scoring method allowed for a maximum possible score of 72 for each evaluator (24 cases × 3 points per case). The cumulative scores provided a measure of each participant's diagnostic performance across all cases, enabling a comparative analysis between the different groups.

Table 2

Patient sample characteristics.

	Initial validation cohort n = 100	Second validation cohort n= 24
Male	44 (44%)	11 (46%)
Female	56 (56%)	13 (54%)
Age, y		
Mean	48 y	51 y
Range	16-86 y	28-86 y
1. Dentoalveolar-related pain	8 (8%)	6 (25%)
1.1 Dental pain	5 (5%)	3 (12.5%)
1.2 Oral mucosal, salivary gland, and jaw bone pains	3 (3%)	3 (12.5%)
2. Myofascial orofacial pain	13 (13%)	3 (12.5%)
2.1 Primary myofascial orofacial pain	5 (5%)	1 (4.2%)
2.2 Secondary myofascial orofacial pain	8 (8%)	2 (8.3%)
3. Temporomandibular joint pain	11 (11%)	1 (4.2%)
3.1 Primary temporomandibular joint pain	5 (5%)	0 (0%)
3.2 Secondary temporomandibular joint pain	6 (6%)	1 (4.2%)
4. Pain related to lesion or disease of the cranial nerves	36 (36%)	7 (29.2%)
4.1 Pain attributed to lesion or disease of the trigeminal nerve	31 (31%)	7 (29.2%)
4.2 Pain attributed to lesion or disease of the glossopharyngeal nerve	5 (5%)	0 (0%)
5. Orofacial pain resembling primary headaches	17 (17%)	4 (16.7%)
5.1 Orofacial migraine	4 (4%)	1 (4.2%)
5.2 Tension-type orofacial pain	2 (2%)	1 (4.2%)
5.3 Trigeminal autonomic orofacial pain	8 (8%)	2 (8.3%)
5.4 Neurovascular orofacial pain	3 (3%)	0 (0%)
6. Idiopathic orofacial pain	15 (15%)	3 (12.5%)
6.1 Burning mouth syndrome (BMS)	6 (6%)	1 (4.2%)
6.2 Persistent idiopathic facial pain (PIFP)	4 (4%)	1 (4.2%)
6.3 Persistent idiopathic dentoalveolar pain	3 (3%)	0 (0%)
6.4 Constant unilateral facial pain with additional attacks (CUFPA)	2 (2%)	1 (4.2%)

Finally, to assess the interrater reliability of the algorithm itself, 4 participants were provided with the same subset of 24 anonymized cases. Each participant was instructed to use only the ICOP-AL, without relying on clinical judgement, to arrive at a diagnosis for each case. Agreement between the diagnoses made by different users of the algorithm was then calculated to determine the consistency and reliability of ICOP-AL when applied by different individuals.

2.6. Statistical analysis

To quantify the level of agreement between the algorithm-derived diagnoses and the clinicians' diagnoses (n = 100), we calculated Cohen's Kappa coefficient using SPSS statistical software (IBM Corp version 27.0, Armonk, NY). This statistical measure accounts for agreement occurring by chance and provides a robust assessment of the algorithm's diagnostic accuracy. Fleiss' Kappa coefficient was similarly calculated to assess the interrater reliability of the algorithm when used by different individuals. Descriptive statistics were used to describe the performance scores overall and stratified according to ICOP level 1 diagnostic groups.

To assess whether diagnostic performance scores differed across evaluator groups (ICOP-AL, medical students, general practitioners, and orofacial pain experts), we used a Kruskal-Wallis H test. A significance threshold of $P < 0.05$ was used for all statistical tests.

3. Results

The complete ICOP-AL is available as a downloadable interactive PDF document (Supplemental data, http://links.lww.com/PAIN/C369). International Classification of Orofacial Pain Algorithm consists of 689 interconnected boxes designed to cover all criteria and diagnoses outlined in the ICOP. In alignment with the structure of the CAL-CP, we have incorporated an initial decision trunk that encompasses diagnoses up to the three-digit level. This feature enhances usability in primary care settings by streamlining the diagnostic process for common orofacial pain conditions and serves as a foundational step for branching into more detailed diagnoses.

3.1. Validation

The level of agreement between ICOP-AL-derived diagnoses and the reference standard (being the clinically confirmed diagnosis) was $\kappa = 0.688$ ($P < 0.001$; 0.584-0.791), indicating substantial agreement across various orofacial pain categories. Fleiss' kappa

was $\kappa = 0.52$ ($P < 0.01$), reflecting moderate interrater reliability among 4 users applying the algorithm independently.

The performance scores showed variability among participants with different levels of clinical experience (**Table 3**, **Fig. 3**). International Classification of Orofacial Pain Algorithm achieved a total quality score of 42 out of 72 (58%), while expert 1 scored the highest at 47 (65%), followed by expert 2 at 44 (61%). Medical students, general practitioners, and orofacial pain experts achieved scores ranging from 32 (44%) to 39 (56%). A Kruskal-Wallis H test showed that the differences in diagnostic performance scores across groups were not statistically significant, $\chi^2(6) = 6$, $P = 0.423$. The a priori statistical power was low (0.1255), likely due to the small sample size per group.

Performance varied when stratifying performance scores for the 100 patient cases according to diagnostic groups (**Table 4**). The algorithm demonstrated the highest accuracy in diagnosing dentoalveolar-related pain (75%) and pain related to cranial nerve lesions (68%). Lower scores were observed in myofascial orofacial pain (49%) and orofacial pain resembling primary headaches (49%), indicating relative challenges in these areas. Temporomandibular joint pain (55%) and idiopathic orofacial pain (58%) fell into a moderate performance range.

When compared with the different human evaluators (**Table 3**), the algorithm's diagnostic accuracy varied across ICOP level 1 categories, showing the highest accuracy for temporomandibular joint pain (100%) and dentoalveolar-related pain (78%). Scores for other categories were lower, with pain related to cranial nerve lesions at 57%, idiopathic orofacial pain at 33%, and orofacial pain resembling primary headaches at 25%. The mean score for human evaluators was 54%, slightly outperforming the ICOP-AL score by 4 percentage points. The model outperformed the nonexpert human evaluators by 2% to 14%.

4. Discussion

The ICOP-AL was developed to address the complexities involved in diagnosing OFP by providing a standardized and accessible tool for clinical use. The validation study indicates that ICOP-AL demonstrated a moderate level of agreement with reference standard clinician diagnoses, achieving a Cohen's Kappa coefficient of 0.688 and outperformed nonexpert human evaluators. Although these findings are promising, further validation in real-world clinical settings is needed to fully assess its reliability and impact on diagnostic accuracy.

The findings from this study highlight the effectiveness of ICOP-AL, but they also suggest room for further refinement and integration. Notably, while ICOP-AL performed comparably to expert clinicians, its total quality score of 58% and moderate interrater reliability suggest the potential for enhancements, especially for more detailed diagnoses. However, as we did not collect qualitative feedback from practitioners or assess the algorithm's integration into routine clinical practice, further in vivo validation and more extensive reliability studies are needed to fully understand its practical impact and usability. In this respect, the algorithm has the potential to reduce variability in diagnostic accuracy, which is often a concern in clinical practice involving OFP. Consistent with literature on clinical decision support systems (CDSS), ICOP-AL can foster better clinical outcomes by enabling standardized approaches to diagnosis, thus reducing diagnostic discrepancies.[8,10]

The expert collaboration that underpinned the development of ICOP-AL was crucial to its success. Throughout the iterative development process, ongoing expert feedback helped optimize the flow, usability, and overall organization of the algorithm, ultimately ensuring a more streamlined diagnostic pathway. This aligns with the findings of Coiera, who noted that expert involvement is vital in the design of CDSS to ensure accuracy and clinical relevance.[1] Furthermore, integrating hyperlinks and a hierarchical approach to decision-making allowed users to move efficiently through the diagnostic levels, ensuring that even rare or complex cases were adequately addressed without unnecessary redundancy.

However, certain limitations were identified. The lack of fully operationalized diagnostic criteria within ICOP remains a foundational limitation, which also impacts ICOP-AL. Although the algorithm successfully translates ICOP's hierarchical structure into a decision-making framework, many of the criteria—outside those adopted from systems like DC/TMD—lack standardized, testable procedures for clinical application. This limits both the algorithm's interpretability and its reproducibility across users. Future research efforts should therefore focus on systematically operationalizing ICOP criteria, enabling more reliable clinical assessments and further improving the consistency and utility of ICOP-AL.

Despite the substantial level of agreement observed, the total quality score highlighted areas where ICOP-AL fell slightly short compared with expert clinicians, particularly in differentiating highly specific diagnoses. This may reflect the inherent difficulty in

Table 3

Diagnostic performance stratified by evaluator expertise according to the International Classification of Orofacial Pain level.

ICOP level 1	No. of cases	Max possible score	ICOP-AL		Expert 1		Expert 2		Student 1		Student 2		GP 1		GP 2		Mean human evaluator score
1. Dentoalveolar-related pain	6	18	14	78%	15	83%	18	100%	14	78%	12	67%	12	67%	13	72%	78%
2. Myofascial orofacial pain	3	9	7	78%	4	44%	3	33%	3	33%	4	44%	5	56%	4	44%	43%
3. Temporomandibular joint pain	1	3	3	100%	2	67%	2	67%	1	33%	3	100%	3	100%	1	33%	67%
4. Pain related to lesions or disease of the cranial nerves	7	21	12	57%	13	62%	13	62%	12	57%	8	38%	5	24%	13	62%	51%
5. Orofacial pain resembling primary headaches	4	12	3	25%	10	83%	3	25%	3	25%	2	17%	5	42%	4	33%	38%
6. Idiopathic orofacial pain	3	9	3	33%	3	33%	5	56%	7	78%	4	44%	2	22%	2	22%	43%
Total	24	72	42	58%	47	65%	44	61%	40	56%	33	46%	32	44%	37	51%	54%

The diagnostic performance was scored on a scale from 0 to 3 points for each case, with higher scores reflecting greater diagnostic precision. Each evaluator's total score per diagnostic group is given in absolute and relative (%) figures. The mean human evaluator score is the mathematical mean of experts 1 to 2, students 1 to 2, and GPs 1 to 2.

GP, general practitioner; ICOP-AL, International Classification of Orofacial Pain Algorithm.

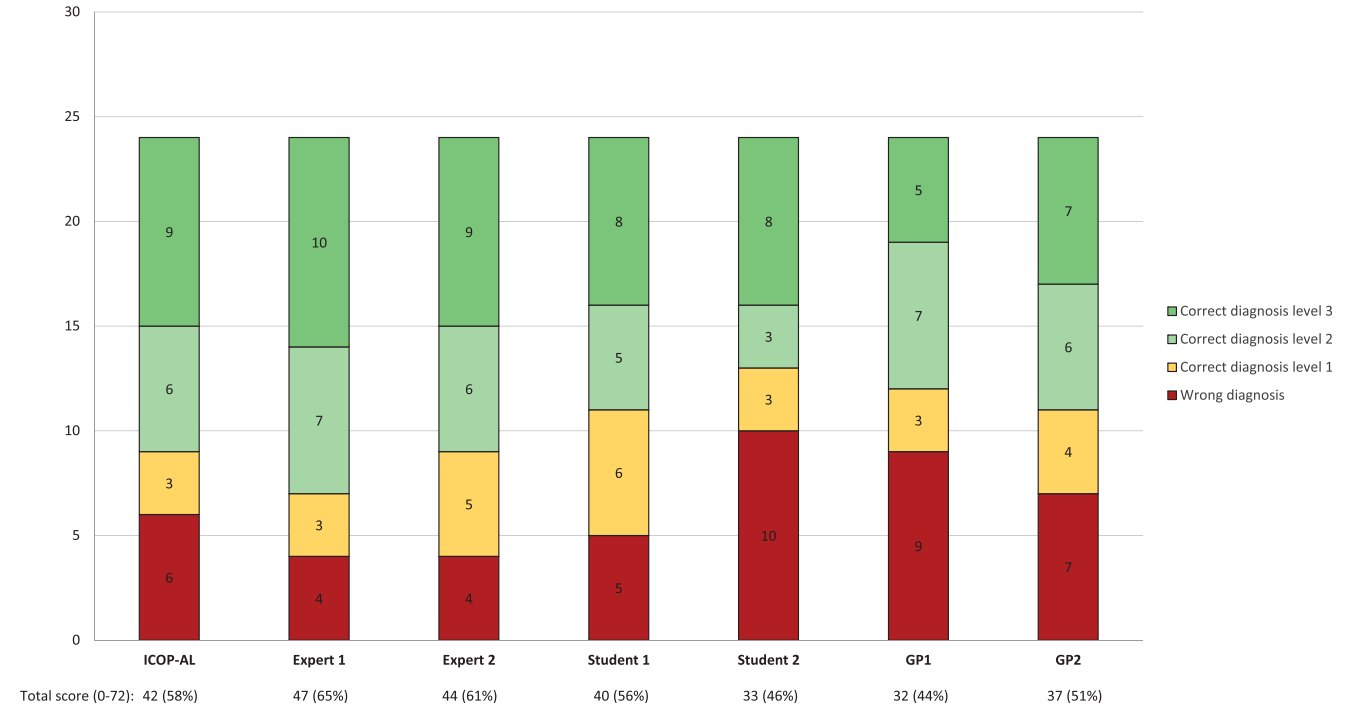

Figure 3. Performance of the algorithm (ICOP-AL) and evaluators (expert 1, expert 2, student 1, student 2, general practitioner 1, general practitioner 2) in diagnosing orofacial pain conditions. The bar chart represents the number of correct and incorrect diagnoses across different diagnostic levels for 24 anonymized patient cases. Correct diagnosis levels are depicted in varying shades of green, with darker shades representing more detailed (third level) correct diagnoses. Incorrect diagnoses are shown in red. A correct third-digit diagnosis also counts at the second- and first-digit levels, and a correct second-digit diagnosis counts at the first-digit level. The results indicate the variability in diagnostic performance across different experience levels, with ICOP-AL achieving comparable outcomes to those of human evaluators, particularly at higher diagnostic levels. The bottom row presents a comparison of diagnostic performance between the algorithm (ICOP-AL) and different evaluators. Each evaluator was assessed based on diagnostic accuracy, using the following scoring system: 0 points for an incorrect diagnosis, 1 point for a correct first-digit level diagnosis, 2 points for a correct second-digit level diagnosis, and 3 points for a correct third-digit level diagnosis. The percentage indicates the score obtained as a proportion of the maximum possible total score of 72 (3 points × 24 cases). ICOP-AL, International Classification of Orofacial Pain Algorithm; GP, general practitioner.

diagnosing certain OFP conditions, which are challenging even for experienced clinicians. In addition, the anonymized patient cases used in this study do not replicate real-world clinical evaluations, which can provide more contextual and dynamic information but can also be more challenging to interpret compared with standardized cases. Real-world patient presentations are often unstructured and nonlinear, influenced by clinician prompts, making them more complex than the structured vignettes employed here. Furthermore, specific diagnostic criteria may not have been fully standardized in these cases, affecting the algorithm's ability to achieve a higher accuracy in certain categories. This observation aligns with existing research suggesting that decision support tools often need refinement to handle edge cases effectively.[5] Thus, future versions of ICOP-AL might need to incorporate additional decision points and guidance for atypical presentations, potentially through the integration of machine learning to continuously adapt to evolving diagnostic patterns.[11] Moreover, these future versions might be replaced by AI tools with advanced reasoning capabilities that are able to continuously adapt to additional information, making them even more effective in handling complex and evolving diagnostic scenarios. Finally, targeted

Table 4

Diagnostic performance of the International Classification of Orofacial Pain Algorithm on International Classification of Orofacial Pain level 1 for 100 patient cases.

ICOP level 1	No. of cases	Max possible score	ICOP-AL	
1. Dentoalveolar-related pain	8	24	18	75%
2. Myofascial orofacial pain	13	39	19	49%
3. Temporomandibular joint pain	11	33	18	55%
4. Pain related to lesions or disease of the cranial nerves	36	108	73	68%
5. Orofacial pain resembling primary headaches	17	51	25	49%
6. Idiopathic orofacial pain	15	45	26	58%
Total	100	300	179	60%

Scores are presented in absolute values and as percentages relative to the maximum possible score for each category. The diagnostic performance was scored on a scale from 0 to 3 points for each case, with higher scores reflecting greater diagnostic precision. This value represents the total individual score for ICOP-AL per diagnostic group.
ICOP-AL, International Classification of Orofacial Pain Algorithm.

training modules accompanying the use of ICOP-AL could enhance the diagnostic performance of less experienced users, helping them achieve levels of diagnostic accuracy closer to those of expert clinicians.

The integration of established diagnostic criteria, such as the ICHD-3 and the DC/TMD, into ICOP-AL reflects best practices in leveraging preexisting knowledge to create comprehensive and usable frameworks.[3,9] Such integration not only enhances diagnostic accuracy but also aligns ICOP-AL with internationally recognized standards, facilitating its adoption and ensuring consistency in OFP diagnosis across different healthcare settings. However, this could also present a potential pitfall if different classification systems evolve independently, leading to confusion or contradictions between siloed systems. Therefore, ongoing collaboration across different classification efforts is crucial to avoid such fragmentation and maintain coherence in diagnostic criteria.

In conclusion, ICOP-AL represents a significant advancement in the standardization and accessibility of OFP diagnosis. It offers a user-friendly, evidence-based approach that has the potential to improve diagnostic accuracy and patient outcomes significantly. Moving forward, continued refinement and validation, incorporating both technological advances and expert insights, will be essential to enhance the algorithm's diagnostic precision further and ensure its adaptability to evolving clinical needs. International Classification of Orofacial Pain Algorithm's role as both a diagnostic aid and an educational tool underscores its capacity to contribute meaningfully to the field of orofacial pain management, particularly in settings where clinician expertise may vary.

Conflict of interest statement

The authors declare the following potential conflicts of interest regarding the submitted work: R.B. has served as the Editor-in-Chief of the *Journal of Orofacial Pain and Headache* and has received royalties from Quintessence Publishing for the book "Orofacial Pain and Headache." A.M. received honoraria for lectures, presentations, or educational events from Novartis, Ipsen, TEVA, and Betapharm, and support for attending meetings from the International Headache Society (IHS) and NorHead. H.S., C.V., P.C., L.B.-H., T.R., and F.V.d.C. report no conflicts of interest related to this work. T.R. and F.V.d.C. are involved in FaceYourPain.org, a venture relevant to the field of orofacial pain. All authors certify that they have disclosed all relevant financial and nonfinancial interests as per the ICMJE guidelines.

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Data availability statement: The data supporting the conclusions of this article will be made available by the authors on request.

Supplemental digital content

Supplemental digital content associated with this article can be found online at http://links.lww.com/PAIN/C369.

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