



ORIGINAL ARTICLE

EFFECT OF AWARENESS OF THE NATIONAL MAXILLOFACIAL ASSOCIATION ON THE PERCEPTION OF SCOPE OF MAXILLOFACIAL PRACTICE

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ABSTRACT

Background: Oral and maxillofacial surgery (OMFS) encompasses a broad scope of procedures, yet public and professional awareness of its full capabilities remains inconsistent. Thai Association of Oral and Maxillofacial Surgeons (TAOMS) plays a pivotal role in promoting the specialty, but its influence on OMFS perception has not been thoroughly examined. This study aims to evaluate whether awareness of TAOMS affects recognition of OMFS-performed procedures among preclinical dental students.

Materials and Method: A cross-sectional survey was conducted among 129 pre-clinical dental students to assess their recognition of OMFS procedures across four domains: dentofacial deformity, maxillofacial trauma, oral oncology and reconstruction, and miscellaneous interventions. Students were grouped based on their awareness of the TAOMS into aware (Aw) and unaware (Uaw) groups. Recognition levels were classified as high, moderate, or low. Chi-square tests were used to compare groups, with statistical significance set at $p < 0.05$.

Results: Among 129 participants, 57 (44.19%) were aware of TAOMS. The Aw group exhibited significantly higher recognition rates for OMFS procedures across all domains. Open reduction and internal fixation of zygomatic fractures had the largest discrepancy (Aw: 87.72%, Uaw: 61.11%; $p < 0.05$). Procedures with interdisciplinary overlap, such as facial liposuction and nasal augmentation, had the lowest recognition rates.

Conclusions: Awareness of the national maxillofacial association affected the perception of the scope of OMFS practices. The variability in awareness across different procedure categories including dentofacial deformity and maxillofacial trauma procedures were generally well recognized, surgical interventions with interdisciplinary overlapped were more frequently attributed to other specialties.

Keywords: oral and maxillofacial surgery; oral and maxillofacial association; oral and maxillofacial education; awareness; medical and dental student; developing country

INTRODUCTION

Oral and maxillofacial surgery (OMFS) is the unique dental specialty that bridges the fields of dentistry and medicine, dealing with a wide range of conditions including facial trauma, congenital craniofacial anomalies, oral cancer, complex dentoalveolar surgery and maxillofacial esthetic

surgeries.¹ Despite the broad and specialized nature of the field, public awareness of the full scope of practice of oral and maxillofacial surgeons (OMS) remains limited, especially in countries where the specialty is still developing in terms of visibility and policy support.² In Thailand, the role of OMS has grown significantly in recent decades. Procedures performed by OMS can range

from the removal of impacted teeth and corrective jaw surgery to complex facial reconstructions and management of head and neck cancers. However, studies suggest that many individuals including those in related health professions have only partial or inaccurate understanding of what OMS are trained and authorized to perform.³ This misperception may impact referrals, patient access to specialized care, and the professional identity of OMS.

One of the most important factors influencing public and professional understanding is awareness of the National Professional Society, Thai Association of Oral and Maxillofacial Surgeons (TAOMS) which established in 1981 by Professor C Hangsasoot, a pioneer in the field of oral and maxillofacial surgery in Thailand. TAOMS served to establish standards, promote education, and inform the public about the role of the OMS.^{4,5} The purpose of this study is to investigate the level of public and professional understanding in Thailand, and to determine whether awareness of the national professional association has an impact on that understanding. Specifically, the study aims to: (1) measure and compare perceived knowledge about the procedures performed by OMS among individuals who are aware of TAOMS versus those who are not, and (2) identify which procedures are most commonly misperceived or underrecognized by the general population. The primary hypothesis is that individuals who are aware of TAOMS will have a significantly higher level of recognition and correct understanding of the OMS scope of practice compared to those who are not aware. A secondary hypothesis is that certain advanced or surgical procedures, particularly those that overlap with plastic surgeons or otolaryngologists, are less likely to be correctly attributed to OMS by the general public. The findings

could support future educational or advocacy strategies to improve public and professional recognition of OMS capabilities in any countries.

MATERIALS AND METHOD

A cross-sectional survey, conducted in accordance with the principles of the Declaration of Helsinki and approved by the Human Research Ethics Committee of Health Science, Bangkokthonburi University (Approval No. BTU-IRB-23/2568), was carried out during June and July 2025. A self-administered, anonymous questionnaire (Table 1) consisting of 42 questions in Thai language was distributed to pre-clinical dental students at our institution. In addition to collecting demographic data—including gender and age—the survey assessed participants' awareness of TAOMS, which served as the predictor variable. The remaining sections of the questionnaire evaluated perceptions of the surgical scope of general oral and maxillofacial surgeons (OMS), which were treated as outcome variables. Perceived surgical abilities were categorized into four domains: dentofacial deformity (9 questions), maxillofacial trauma (9 questions), oral oncology and reconstruction (9 questions), and miscellaneous procedures (11 questions). The questionnaire further distinguished between intraoral (17 questions) and extraoral (21 questions) procedures. Awareness of OMFS procedures was categorized as low (<30% of participants indicated that OMS can perform the procedure), moderate (30–70%), and high (>70%).

Table 1 The self-administered, anonymous questionnaire.

1. From your current understanding, do you believe that an oral and maxillofacial surgeon can perform... 1) repair of a cleft lip(cheiloplasty)? 2) repair of a cleft palate(palatoplasty)? 3) joint lavage of the temporomandibular joint (TMJ arthrocentesis)? 4) orthognathic (jaw repositioning) surgery in conjunction with orthodontic treatment? 5) aesthetic surgery to reduce the angle of the jaw(anguloplasty or V-line surgery)? 6) aesthetic surgery to reduce the cheekbones (zygomatic reduction or malarplasty)? 7) temporomandibular joint (open-TMJ) surgery? 8) repair of an alveolar cleft in patients with cleft lip and palate? 9) sliding genioplasty (chin advancement or reduction)?
2. From your current understanding, do you believe that an oral and maxillofacial surgeon can perform... 1) application of fixation splints to the upper or lower jaw(closed reduction of jaws)? 2) application of fixation splints to the nasal bones(nasal splint)? 3) fixation of zygomatic (cheekbone) fractures with plates and screws?

- 4) repair of the floor of the mouth due to trauma?
- 5) repair of lacerations on the forehead caused by trauma?
- 6) placement of fixation hardware (plates and screws) on the frontal bone (forehead)?
- 7) repair of lacerations on the lower eyelid?
- 8) orbital floor reconstruction using titanium mesh?
- 9) repair of a damaged tear duct (repair canaliculi)?

3. From your current understanding, do you believe that an oral and maxillofacial surgeon can perform...

- 1) surgery for tongue cancer?
- 2) neck dissection for head and neck cancer?
- 3) removal of tumors in the parotid gland (parotidectomy)?
- 4) removal of tumors in the submandibular gland?
- 5) removal of tumors in the maxillary sinus?
- 6) harvesting bone from the hip for facial bone grafting?
- 7) reconstruction of facial defects using a part of chest muscle reposition (pectoralis major flap)?
- 8) skin grafting from the thigh to the oral cavity for alveolar ridge repair?
- 9) reconstruction of a defect at the palate using a nasolabial flap?

4. From your current understanding, do you believe that an oral and maxillofacial surgeon can perform...

- 1) surgical removal of an impacted tooth located near the nasal cavity?
- 2) placement of zygomatic dental implants?
- 3) alveolar ridge augmentation?
- 4) chin augmentation using silicone implants?
- 5) nasal augmentation using ear cartilage?
- 6) frenectomy for tongue-tie in newborns?
- 7) surgical closure of an oroantral communication (a hole between the oral cavity and the maxillary sinus)?
- 8) facial contouring through liposuction?
- 9) buccal fat pad removal?
- 10) drainage of a deep neck abscess?
- 11) drainage of an abscess in the parotid gland?

Data were collected electronically via Google Forms (Alphabet Inc., Mountain View, CA), and all responses were exported using Excel 365 (Microsoft Corporation, Redmond, WA). Statistical analyses were performed using SPSS version 29.0 (IBM Corp., Armonk, NY). Differences between the two groups—those aware of TAOMS (Aw) and those unaware (Uaw)—were analyzed using the chi-square test. Additionally, differences between intraoral (IO) and extraoral (EO) procedures were evaluated. A significance level of $P < 0.05$ was used for all analyses.

RESULTS

A total of 129 responses were collected, comprising 85 females, 37 males, and 7 non-binary individuals. The participants had a mean age of 22.43 years ($SD = 4.46$). The sample included 57 Aw participants (44.19%) and 72 Uaw participants (55.81%). The demographic data was shown in the Table 2.

Table 2. Demographic Data, stratified by awareness of the national maxillofacial association (Awareness vs. Unawareness Group)

	Awareness of the national maxillofacial		
	association		All Data
	Awareness group	Unawareness group	(n=129)
	(n=57)	(n=72)	
Age (Mean±S.D, years)	22.05 ± 3.73	22.74 ± 4.97	22.43 ± 4.46
Gender			
Male (n)	13	24	37
Female (n)	41	44	85
Non-binary(n)	3	4	7

Among the 38 procedures assessed, only facial liposuction was categorized as having low awareness, with 27.13% of participants indicating that OMS can perform the procedure. The perception of the scope of OMFS practice across all procedures showed in the Table 3.

Table 3. Perception of the scope of maxillofacial practice across all procedures, stratified by awareness of the national maxillofacial association (Awareness vs. Unawareness Group)

Operation	Awareness of the national maxillofacial association				All		P-value
	Awareness Group		Unawareness Group				
	(n=57)		(n=72)		(n=129)		
	Yes(%)	No(%)	Yes(%)	No(%)	Yes(%)	No(%)	
Dentofacial deformity (9 questions)							
Cheiloplasty	52(91.23)	5(8.77)	56(77.78)	16(22.22)	108(83.72)	21(16.28)	0.07
Palatoplasty	54(94.74)	3(5.26)	57(79.17)	15(20.83)	111(86.05)	18(13.95)	0.03*
TMJ arthrocentesis	48(84.21)	9(15.79)	54(75.00)	18(25.00)	102(79.07)	27(20.93)	0.28
Orthognathic	52(91.23)	5(8.77)	55(76.39)	17(23.61)	107(82.95)	22(17.05)	0.046*
Anguloplasty	53(92.98)	4(7.02)	49(68.06)	23(31.94)	102(79.07)	27(20.93)	0.001*
Malarplasty	43(75.44)	14(24.56)	38(52.78)	34(47.22)	81(62.79)	48(37.21)	0.01*
Open joint surgery	56(98.25)	1(1.75)	57(79.17)	15(20.83)	113(87.60)	16(12.40)	0.003*
Repair alveolar cleft	53(92.98)	4(7.02)	55(76.39)	17(23.61)	108(83.72)	21(16.28)	0.02*
Sliding genioplasty	47(82.46)	10(17.54)	48(66.67)	24(33.33)	95(73.64)	34(26.36)	0.06
Maxillofacial trauma (9 questions)							
Closed reduction of jaws	46(80.70)	11(19.30)	54(75.00)	18(25.00)	100(77.52)	29(22.48)	0.58
Closed reduction of nasal bone	38(66.67)	19(33.33)	37(51.39)	35(48.61)	75(58.14)	54(41.86)	0.12
Internal fixation of zygoma	50(87.72)	7(12.28)	44(61.11)	28(38.89)	94(72.87)	35(27.13)	0.002*
Surgical repair of the floor of mouth	55(96.49)	2(3.51)	57(79.17)	15(20.83)	112(86.82)	17(13.18)	0.01*
Surgical repair at forehead	38(66.67)	19(33.33)	36(50.00)	36(50.00)	74(57.36)	55(42.64)	0.09
Internal fixation at forehead	31(54.39)	26(45.61)	29(40.28)	43(59.72)	60(46.51)	69(53.49)	0.16
Surgical repair at eyelids	32(56.14)	25(43.86)	23(31.94)	49(68.06)	55(42.64)	74(57.36)	0.01*
Orbital floor reconstruction	34(59.65)	23(40.35)	24(33.33)	48(66.67)	58(44.96)	71(55.04)	0.005*
Repair canaliculi	27(47.37)	30(52.63)	26(36.11)	46(63.89)	53(41.09)	76(58.91)	0.27
Oral oncology and reconstruction (9 questions)							

Excision of tongue cancer	40(70.18)	17(29.82)	39(54.17)	33(45.83)	79(61.24)	50(38.76)	0.09
Neck dissection	31(54.39)	26(45.61)	30(41.67)	42(58.33)	61(47.29)	68(52.71)	0.21
Parotidectomy	74(58.95)	12(21.05)	40(55.56)	32(44.44)	85(65.89)	44(34.11)	0.01*
Excision of submandibular gland	51(89.47)	6(10.53)	54(75.00)	18(25.00)	105(81.40)	24(18.60)	0.06
Excision of maxillary sinus tumor	50(87.72)	7(12.28)	52(72.22)	20(27.78)	102(79.07)	27(20.93)	0.05*
Iliac crest bone graft	35(61.40)	22(38.60)	27(37.50)	45(62.50)	62(48.06)	67(51.94)	0.01*
Pectoralis major muscle flap	35(61.40)	22(38.60)	29(40.28)	43(59.72)	64(49.61)	65(50.39)	0.03*
Skin graft	43(75.44)	14(24.56)	44(61.11)	28(38.89)	87(67.44)	42(32.56)	0.12
Nasolabial flap	51(89.47)	6(10.53)	51(70.83)	21(29.17)	102(79.07)	27(20.93)	0.02*
Miscellaneous procedures (11 questions)							
Impacted tooth in nasal cavity	48(84.21)	9(15.79)	43(59.72)	29(40.28)	91(70.54)	38(29.46)	0.005*
Zygomatic implant	46(80.70)	11(19.30)	46(63.89)	26(36.11)	92(71.32)	37(28.68)	0.06
Alveolar ridge augmentation	48(84.21)	9(15.79)	54(75.00)	18(25.00)	102(79.07)	27(20.93)	0.29
Chin silicone	27(47.37)	30(52.63)	22(30.56)	50(69.44)	49(37.98)	80(62.02)	0.08
Rhinoplasty with conchal cartilage	24(42.11)	33(57.89)	21(29.17)	51(70.83)	45(34.88)	84(65.12)	0.18
Frenectomy in newborn	52(91.23)	5(8.77)	49(68.06)	23(31.94)	101(78.29)	28(21.71)	0.003*
Oroantral communication closure	55(96.49)	2(3.51)	56(77.78)	16(22.22)	111(86.05)	18(13.95)	0.005*
Facial liposuction	21(36.84)	36(63.16)	14(19.44)	58(80.56)	35(27.13)	94(72.87)	0.04*
Buccal fat pad removal	32(56.14)	25(43.86)	29(40.28)	43(59.72)	61(47.29)	68(52.71)	0.11
Incision and drainage of deep neck infection	36(63.16)	21(36.84)	30(41.67)	42(58.33)	66(51.16)	63(48.84)	0.02*
Incision and drainage of parotid abscess	47(82.46)	10(17.54)	48(66.67)	24(33.33)	95(73.64)	34(26.36)	0.07

* Statistically differences between awareness and unawareness groups analyzed using the chi-square test.

Seventeen procedures were classified as moderate awareness, including nasal augmentation with ear cartilage (34.88%), orbital floor reconstruction with titanium mesh (44.69%), pectoralis major flap operation (49.61%), and esthetic malarplasty (62.79%). The remaining 20 procedures were categorized as high awareness, with 14 of these belonging to the IO group. Of all procedures, open temporomandibular joint surgery had the highest awareness, with 87.60% of participants recognizing it as within the scope of OMS.

When procedures were analyzed by category, those related to dentofacial deformity were predominantly associated with high awareness, with a moderate-to-high ratio of 1:8. In the maxillofacial trauma and oral oncology/reconstruction groups, the moderate-to-high awareness ratio was 6:3. For the miscellaneous category, the distribution of awareness levels was low:moderate:high in a ratio of 1:4:6.(Table 4).

Table 4. Perceived scope of oral and maxillofacial surgery procedures, stratified by intraoral and extraoral approaches and awareness level

Approach of the operation	Level of the awareness of the procedures		
	Low (<30%)	Moderate (30-70%)	High (>70%)
Intraoral approach (17 questions)			
All	0	3	14
Awareness group	0	2	15
Unawareness group	0	7	10

Extraoral approach (21 questions)

All	1	14	6
Awareness group	0	12	9
Unawareness group	2	14	5

When participants' awareness of TAOMS was assessed, those in the Aw group demonstrated a higher perception of the scope of maxillofacial practice across all procedures compared to the Uaw group. The greatest difference was observed in the perception of open reduction and internal fixation with miniplates and screws at the zygomatic bone, reported by 87.72% of the Aw group and 61.11% of the Uaw group. The smallest difference was noted in the perception of closed reduction of the jaw, with 80.70% in the Aw group and 75.00% in the Uaw group. The chi-square analysis revealed statistically significant differences in the perception of certain procedures between Aw and Uaw groups. For example, buccal fat pad removal ($p = 0.017$), nasal augmentation using ear cartilage ($p = 0.003$), and facial contouring through liposuction ($p = 0.011$) demonstrated substantial gaps in understanding. Additionally, major surgical interventions such as open temporomandibular joint surgery ($p = 0.027$) and neck dissection for head and neck cancer ($p = 0.034$) also exhibit notable differences, suggesting that Aw group strongly influenced the perception of OMFS scope of practice. Perception of the scope of OMFS practice across all procedures, stratified by awareness of the national maxillofacial association was showed in the Table 3.

For the surgical site category, 3 out of 17 procedures in the IO group including chin silicone, buccal fat removal and excision of tongue cancer were classified as moderate awareness, while the remaining procedures were classified as high awareness. In contrast, 6 out of 21 procedures in the EO group were classified as high awareness, consisted of fixation of zygomatic fractures with plates and screws, joint lavage of the temporomandibular joint, reconstruction of a defect at the palate using a nasolabial flap, removal of tumors in the submandibular gland, cheiloplasty, and open temporomandibular joint surgery. (Table 4)

DISCUSSION

The result of this study showed the significant impact of awareness of the TAOMS on the perception of OMS scope of practice. Participants who were aware of TAOMS demonstrated consistently higher recognition of OMS-performed procedures across all domains, particularly in trauma surgery and dentofacial deformity correction.

This suggests that formal exposure to professional associations may play a significant role in shaping accurate perceptions of a specialty's competencies. Notably, procedures with interdisciplinary overlap, such as facial liposuction and nasal augmentation using ear cartilage, were among the least recognized as being within OMS scope, determining a need for clearer delineation of OMS expertise in areas often associated with neighbor surgical specialties such as plastic surgery and otolaryngology.⁶ By contrast, highly specialized maxillofacial procedures such as open TMJ surgery and fixation of zygomatic fractures with plates and screws were recognized at a high rate, reflecting stronger association with core OMS training. These disparities indicate that while awareness influences perception, certain procedures remain underrecognized due to their perceived alignment with other surgical fields.

A study from New Zealand⁷ showed that awareness and understanding of OMS procedures are generally low among healthcare students, with dental students demonstrating better recognition than their medical counterparts. This aligns with our findings, which reveal that familiarity with TAOMS significantly enhances accurate identification of OMS-performed procedures. Both studies emphasize the impact of formal education and exposure in improving OMS recognition, suggesting that integrating OMS training more comprehensively into medical and dental curricula could help bridge gaps in understanding. Jarosz et al.⁸ stated that dental students' perceptions of OMS evolve throughout their academic training, with increased exposure leading to greater recognition of the specialty's scope. While Jarosz et al focused on how clinical experience influences referral patterns, our study specifically selected pre-clinical dental students as representatives of a well-educated population to assess their baseline awareness before formal OMS exposure. The awareness of OMS procedures may be even lower among the general population. In 2014, study examining the distinction between OMS and oral surgeon showed that ongoing confusion regarding their respective scopes of practice. Research indicated that while OMFS encompasses a broader range of procedures, including facial trauma management, orthognathic surgery, and head and neck oncology, while oral surgery was often perceived as limited to intraoral procedures.⁹

Additionally, oral and facial surgeons have emerged in some regions as a distinct designation. Data from professional organizations indicate that oral and facial surgery often focus on aesthetic and reconstructive facial procedures, overlapping with OMFS in areas such as orthognathic surgery and facial trauma repair. These findings revealed the importance of nomenclature in clarifying professional roles, reinforcing awareness of OMS capabilities.¹⁰ This insight could guide TAOMS in refining its association's name to better reflect the full scope of OMS practice and enhance public and professional recognition. Moreover, some overlap procedure a broader procedures such as botulinum toxin injection, facial liposuction, nasal augmentation, and orthognathic surgery often fall into a gray area where multiple specialties claim expertise.¹¹⁻¹³ Strengthening OMS advocacy and educational outreach, including a promotional campaign by the national association, academies, or OMS, could help clarify the scope of practice and improve referral patterns for such procedures. Incorporating targeted social media advertisements into these efforts can further enhance public and professional awareness,¹⁴ reach a broader audience efficiently, and position OMS specialists as authoritative providers of these overlapping aesthetic and functional procedures.

This study is a cross-sectional analysis, which inherently limits its ability to establish causal relationships between awareness and perception of OMS procedures. Additionally, the study focuses on a small and specific population, primarily pre-clinical dental students, which may not fully represent broader healthcare professionals or the general public. Future research could expand the sample size to include general people, medical students, nurses, dental hygienists, dental or medical general practitioners, and specialists from overlapping fields to provide a more comprehensive comparison. Longitudinal studies tracking awareness shifts following educational campaigns from national association may also offer deeper insights into the effectiveness of advocacy efforts in improving OMS recognition.

This study confirmed that awareness of the TAOMS has a significant related to recognition of OMFS scope. Participants who were aware of TAOMS demonstrated a higher level of correct identification of OMFS procedures compared to those who were unaware. The variability in awareness across different procedure categories including dentofacial deformity and maxillofacial trauma procedures were generally well recognized, surgical interventions with interdisciplinary overlapped such as facial liposuction and nasal augmentation were more frequently attributed to other specialties. These findings revealed the critical role that national professional organizations play in shaping perceptions

and advancing specialty recognition.

DECLARATION

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Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Author contributions

A. Yongvikul and T. Kumchai contributed to conception, design, data acquisition, drafted and critically revised manuscript. M. Khanijou contributed to conception, design and critically revised manuscript. N. Wongsirichat contributed to conception, design and critically revised manuscript. All authors gave final approval and agree to be accountable for all aspects of the work.

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