

Investigation of Factors Associated with Treatment-Seeking in Southern Chinese with Orofacial Pain

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Aims: To investigate key factors associated with treatment-seeking for orofacial pain symptoms in community-dwelling adult Chinese people in Hong Kong. **Methods:** A cross-sectional study was conducted using a Hong Kong Hospital Authority Family Medicine Clinic as the sampling frame. People aged 35 to 70 years with recent orofacial pain symptoms participated. Standard questions were asked about orofacial pain symptoms and characteristics in the previous month, Oral Health Impact Profile (OHIP-14), General Health Questionnaire (GHQ-12), Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) depression/nonspecific physical symptoms (NPS) scales, sleep and illness behavior measures, and questions on pain disability, professional treatment-seeking, pain medication usage, and dental attendance were administered prior to a standard clinical assessment. Multiple logistic regression with a forward stepwise selection method was used for data analysis. **Results:** Two hundred people with orofacial pain symptoms participated in the definitive study. Twenty-seven percent had sought professional advice. The majority had consulted a medical practitioner (66.7%) or dentist (40.7%), 16.7% had consulted a traditional Chinese medicine (TCM) practitioner, and the majority (60%) had taken pain medication. There was no significant association between different orofacial pain diagnoses and professional treatment-seeking ($P = .602$). Four independent factors were significantly related to an increased likelihood of treatment-seeking ($P < .05$): more frequent dental attendance for check-up (odds ratio [OR] > 3), time when pain was experienced during the past month (days) (OR > 5), multiple pain symptoms (OR = 4.99), and use of TCM when ill (OR = 3.31). **Conclusion:** Professional treatment-seeking for orofacial pain was low in this ethnic group. The strongest predictor of treatment-seeking for orofacial pain was an increase in the number of days when pain was experienced during the past month. Key factors associated with treatment-seeking should be considered when formulating community health outreach programs. A further validation study with a larger sample size is recommended to confirm the present findings. J OROFAC PAIN 2010;24:181-188

Key words: associated factors, Chinese, orofacial pain, treatment-seeking

Orofacial pain symptoms are widespread in communities throughout the world and can have substantial adverse effects on physical functioning, psychosocial well-being, and social health.¹⁻⁵ Nonetheless, the majority of people with orofacial pain symptoms do not seek professional help.^{3,4,6,7} Locker⁶ coined the “symptom iceberg” to describe the general observation

that only a small proportion of oral and facial pain symptoms experienced by community-dwelling people lead to professional treatment-seeking. He further postulated that neither symptom prevalence nor severity necessarily result in the seeking of health care. These observations are supported by studies that revealed that moderate to severe orofacial pain symptoms did not prompt a professional consultation in more than half of the cases^{2,4} even though specific pain characteristics appear to be associated with treatment-seeking.⁸

The prevalence and adverse impact of orofacial pain symptoms in southern (Hong Kong) Chinese people is comparable to that observed in Western communities.^{4,7} However, treatment-seeking for orofacial pain conditions appears to be considerably lower in this ethnic group (20% versus 40 to 46% in Western populations).^{3,4,6,8,9} Psychological factors, specific pain behaviors, and different coping strategies have been proposed to explain why only a small proportion of Asians, including Chinese people, with symptoms seek treatment.^{4,10,11} However, key features that may underpin the disparity in treatment-seeking between western and Chinese communities are presently unclear.

Whilst orofacial pain symptoms are often experienced by adult southern (Hong Kong) Chinese people and may have a substantial adverse psychosocial impact, many orofacial pain conditions remain untreated due to a low level of treatment-seeking in this ethnic group. The hypothesis tested in the present study was that there were no specific factors associated with treatment-seeking for orofacial pain. The aim of the study was to investigate key factors associated with treatment-seeking for orofacial pain in community-dwelling adult Chinese people in Hong Kong.

Materials and Methods

Study Sample

In this community-based study the sampling frame was adult people aged 35 to 70 years registered as patients at the Ap Lei Chau Family Medicine Clinic run by the Hong Kong Hospital Authority (the sole public health authority in Hong Kong that provides clinical services to the vast majority [$> 95\%$] of Hong Kong people). The clinic is one of many general out-patient clinics throughout Hong Kong that provide primary care services to the population of Hong Kong. The Family Medicine Unit, the University of Hong Kong, is an integral part of this

Hospital Authority clinic and provides teaching and learning in family medicine to medical students at the University of Hong Kong and uses Hospital Authority patients as a clinical resource.

A previous population-based telephone survey in Hong Kong revealed that the 1-month period prevalence of orofacial pain symptoms in adult people was 24%.⁴ Therefore, in order to recruit 200 patients with orofacial pain, it was anticipated that 800 patients would need to be contacted. With the expectation of a 50% response rate, it was decided that 1,600 people should be contacted. They were randomly selected from the Family Medicine Clinic patient pool after being stratified by age (35 to 54 years, 55 to 70 years) and gender. The patient database was considered to be relatively complete as it included all patients registered since the computer database system was established. However, since the complete database was used for selecting the sample, there were patients selected who had not been to the clinic for some time, who may have moved to another residential address, and thus the addresses and contact phone numbers may not have been totally up-to-date.

First, information about the study was provided in the form of an information sheet mailed to the selected 1,600 Family Medicine Clinic patients consisting of 800 males and 800 females. Then, they were contacted by phone by a trained interviewer and invited to take part in a short telephone questionnaire survey to determine if they had experienced orofacial pain symptoms within the previous four weeks. The screening questionnaire included 10 questions on various kinds of orofacial pain, namely, (1) toothache, (2) pain in the jaw joints at rest, (3) pain in the face just in front of the ears, (4) pain in or around the eyes, (5) pain when opening the mouth wide, (6) pain in the jaw joint(s) when chewing food, (7) pain in and around the temples, (8) tenderness of muscles at the side of the face, (9) prolonged burning sensation in the tongue or other parts of the mouth, and (10) shooting pain in the face or cheeks. When the interviewee responded positively to at least one question and agreed to participate, he or she was invited to attend the Family Medicine Unit clinic to take part in the definitive study that involved completion of a comprehensive questionnaire interview and a clinical assessment.

The Questionnaire Interview

Participants completed the questionnaire assisted by a trained interviewer. The questionnaire included questions about various types of orofacial

pain symptoms experienced (ie, symptoms described in the 10 questions above), the commencement of pain, the time pain was experienced during the past month, pain intensity, duration of pain episodes, dental attendance pattern for check-up, professional treatment-seeking for orofacial pain, and whether they had taken self-prescribed medication for the orofacial conditions. The response choices for pain commencement were within 3 months, more than 3 months ago, and don't know. For pain frequency (days) in the previous month the response choices were 1 to 5, 6 to 10, 11 to 15, 16 to 20, and more than 20 days. For duration of pain episodes the response choices were less than half an hour, half an hour to 1 hour, 1 to 4, 5 to 8, 9 to 12, and more than 12 hours. The severity of pain was measured in two ways. One consisted of a 4-point category scale with options: mild, moderate, severe, and very severe. The other was a numerical rating scale ranging from 0 (no pain) to 10 (pain as bad as it could be).

Participants who reported orofacial pain symptoms were asked to choose the sentence which best described disability associated with their pain, from "I can usually ignore the pain" to "The pain is so bad it interferes with all activities and complete rest or bed rest is necessary."⁸ In addition, those who reported pain were asked whether they had taken time off work, had sought professional treatment, had taken any medication for the pain, and whether they used traditional Chinese medicine (TCM) when ill. For professional treatment-seeking the response categories were medical practitioner, dentist, and/or TCM practitioner.

Psychological distress was measured using the 12-item General Health Questionnaire (GHQ-12).¹² Scores ranged from 0 to 12 with a higher score indicating a higher level of distress. It has been proposed that a cut-off point of 4 is optimal for screening mental disorders.¹³ Thus patients who scored 4 or more were defined as having probable nonpsychotic psychiatric disorders. The Chinese version of GHQ-12 was used in this study and had been validated previously.^{14,15} Maladaptive responses to illness were measured using the Chinese version of the 30-item Illness Behaviour Questionnaire (IBQ).¹⁶ This measure has seven domains: general hypochondriasis; disease conviction; psychological versus somatic perception of illness; affective inhibition; affective disturbance; denial; and irritability. A sleep measure described by Jenkins et al¹⁷ was used to evaluate sleep disturbance. Depressive and nonspecific physical symptoms were explored using depression

and somatization subscales of the Symptom Checklist 90 (SCL-90; Derogatis)¹⁸ in the Chinese version of the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD Axis II) questionnaire.¹⁹ The short-form Oral Health Impact Profile (OHIP-14) was used to evaluate the impact of pain-related oral conditions on quality of life.²⁰ The Chinese version of OHIP-14 that has been translated and validated for use in Hong Kong was used.²¹ Participants were also asked whether they had been bothered by widespread pain in the previous 4 weeks. This aspect was rated on a 5-point Likert scale (0 = not at all to 4 = an extreme amount). Sociodemographic data and information on dental attendance patterns were obtained for all participants.

Clinical Assessment

All participants with orofacial pain symptoms who attended the Family Medicine Unit received a clinical assessment of the face and mouth by a trained clinician after they had completed the questionnaire. The examiner used a standard history form and clinical examination technique.^{22,23} Diagnostic criteria for the different conditions were those described by the International Association for the Study of Pain.²⁴ The diagnoses were assigned to one of three broad clinical groups: musculoligamentous/soft tissue (MST), dentoalveolar (DA), and neurological/vascular (NV), based on the classification of Hapak et al²⁵ that has been used previously in the clinical assessment of orofacial pain.^{22,23,26}

The study was approved by the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster. Participants who attended the Family Medicine Unit provided written informed consent.

Data Analysis

Percentage distributions of self-reported orofacial pain symptoms and clinically assessed orofacial pain diagnoses and clinical diagnostic subgroups were reported together with the corresponding 95% confidence intervals (CIs). The association between clinical diagnostic subgroups and professional treatment-seeking was tested by the chi-square test. The categorization of variables used in the study by Macfarlane et al⁸ was followed so that later comparisons could be made with their data. Crude odd ratios (OR) were computed to compare the likelihood of treatment-seeking for orofacial pain among people with different sociodemographics, dental

Table 1 Percentage Distributions of Pain Symptoms (95% CI) and Treatment-seeking

Symptoms	Percent (n = 200)	95% CI	Percent sought treatment
Pain in and around the temples	68.5	(61.8, 74.5)	21.2
Toothache	57.5	(50.6, 64.2)	20.9
Pain in and around eyes	27.0	(21.3, 33.5)	22.2
Prolonged burning sensation in the tongue or other parts of mouth	17.5	(12.9, 23.4)	25.7
Pain in the jaw joint(s)	14.0	(9.9, 19.5)	10.7
Pain in the jaw joint(s) when chewing	11.5	(7.8, 16.7)	8.7
Pain in the jaw joint(s) while opening the mouth wide	11.5	(7.8, 16.7)	8.7
Pain in the face in front of the ear	9.0	(5.8, 13.8)	22.2
Sharp shooting pain across the face and cheeks	6.0	(3.5, 10.2)	0.0
Tenderness of the muscles at the side of the face	4.5	(2.4, 8.3)	11.1

attendance pattern for check-up, pain characteristics, medication usage, and psychological factors individually. Multiple logistic regression was performed to investigate the key factors associated with treatment-seeking for orofacial pain. Factors with $P < .05$ in the bivariate analyses were considered with the use of a forward stepwise selection method, with only significant factors remaining in the final model. The level of significance was set to be $P = .05$.

Results

Sample Profile

Among the 1,600 people randomly selected from Family Medicine Clinic patient pool, 823 could not be contacted, either due to wrong/invalid telephone numbers ($n = 303$) or because of no response after three attempts ($n = 520$). Thus, 777 were successfully contacted by phone and 645 completed the screening questionnaire, giving a response rate of 83.0%. Among the 645 people who completed the telephone questionnaire, 267 reported having orofacial pain symptoms, 376 had no orofacial pain symptoms, and 2 only partially completed the questionnaire. Two hundred people with orofacial pain symptoms agreed to attend the clinic. The participation rate of those agreeing to attend the clinic was 74.9%. For those people with OFP symptoms who refused to participate in the study at the clinic, common reasons were lack of time due to working or taking care of family, physical disability, and poor general health.

Among the 200 participants, there were 52 men (26%) and 148 (74%) women. The ages ranged from 35 to 70 years with a mean of 54.6 years (standard deviation [SD] 8.2). One hundred and six (53%) had only received primary school or no

formal education. The monthly household income was below HK \$15,000 (US \$1,900) for 44% of the participants.

Among the 200 people examined, 27% had sought professional treatment. Most of them had sought advice from a medical practitioner (66.7%), 40.7% had sought care from a dentist, and 16.7% had consulted a TCM practitioner. Sixty percent had taken medication for pain, with western-style medication most commonly used (95%).

The experience of orofacial pain symptoms in the month prior to assessment and the number (%) of people who sought professional treatment for symptoms is shown in Table 1. Toothache, pain in front of the ear, pain in and around the eyes, pain in and around the temples, and burning sensation were the symptoms that most commonly prompted treatment-seeking (20.9 to 25.7%). Specific orofacial pain diagnoses and diagnostic subgroups of the study group are presented in Table 2. The most common conditions were tension-type headache and TMD. The percent of people who sought professional treatment in the MST, DA, and NV clinical diagnostic subgroups were 31.7%, 28.8%, and 24.0%, respectively. There was no significant association between the clinical subgroups and professional treatment-seeking ($P = .602$).

The likelihood of people with orofacial pain symptoms who sought treatment (in terms of crude OR) in relation to sociodemographic variables, dental attendance pattern, pain characteristics, medication usage, and psychosocial factors individually was calculated. Only five out of the 35 factors considered were found to be significant ($P < .01$, adjusted for multiple testing). These were time pain was experienced during past month (in days) [$P < .001$]; duration of pain episodes (in hours) [$P = .010$]; multiple pain symptoms ($P < .001$); taking medication for pain ($P < .001$); use of TCM when ill ($P = .005$).

Table 2 Distribution of Subjects by Orofacial Pain Diagnosis

Diagnosis	Percent (n = 200)	95% CI
MST	20.5	(15.5, 26.6)
TMD	15.0	(10.7, 20.6)
Oral mucosal disease	4.5	(2.4, 8.3)
Soft tissue trauma	1.0	(0.3, 3.6)
DA	29.5	(23.6, 36.2)
Dentinal/thermal sensitivity	8.5	(5.4, 13.2)
Periodontal	8.0	(5.0, 12.6)
Pulpal	5.5	(3.1, 9.6)
Cracked tooth syndrome	2.0	(0.8, 5.0)
Dental abscess	2.0	(0.8, 5.0)
Tooth mobility	1.5	(0.5, 4.3)
Pericoronitis	1.0	(0.3, 3.6)
Dry socket	0.5	(< 0.1, 2.8)
Gingival	0.5	(< 0.1, 2.8)
NV	50.0	(43.1, 56.9)
Tension-type headache	27.5	(21.2, 34.1)
Migraine	8.0	(5.0, 12.6)
Atypical facial pain	3.5	(1.7, 7.1)
Trigeminal neuralgia	3.0	(1.4, 6.4)
Unknown neuralgia	2.5	(1.1, 5.7)
Burning mouth syndrome	2.0	(0.8, 5.0)
Atypical odontalgia	1.5	(0.5, 4.3)
Cluster headache	0.5	(< 0.1, 2.8)
Secondary headache	0.5	(< 0.1, 2.8)
SUNCT*	0.5	(< 0.1, 2.8)
Unclassified headache	0.5	(< 0.1, 2.8)

*Short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing.

Table 3 Treatment-seeking for Orofacial Pain and Significant Associated Factors

	OR	95% CI	P
Dental attendance pattern			.002
< Once per year*	1.00		
Once per year	3.21	(1.32, 7.79)	
> Twice per year	5.33	(1.96, 14.47)	
Time pain experienced during past month (d)			.003
1 to 5*	1.00		
6 to 15	5.43	(1.85, 15.94)	
16 to 20 or more	5.14	(1.87, 14.10)	
Multiple pain symptoms			.001
Subjects with one pain symptom*	1.00		
Subjects with multiple pain symptoms (≥ 2)	4.99	(2.02, 12.36)	
Use of TCM when ill			.002
Never/rarely*	1.00		
Sometimes/always	3.31	(1.56, 7.00)	

*Reference category.

Taking medication for pain was associated with professional treatment-seeking. However, since this may have been a consequence of seeking treatment, this factor was excluded from the final analysis. A multiple logistic regression was then carried out to identify key factors associated with treatment-seeking for orofacial pain. Six variables with $P < .05$ in the bivariate analyses (time pain was experienced during the past month [days] [$P < .001$], duration of pain episodes [hours] [$P = .010$], multiple pain symptoms [$P < .001$], use of TCM when ill [$P = .005$], dental attendance pattern [$P = .044$], and depression [$P = .033$]) were considered at one time by using a forward stepwise selection method in order to adjust for potential confounders among the variables.

In the final model, four independent factors were revealed to be significantly related to an increased likelihood of professional treatment-seeking (Table 3, $P < .05$): more frequent dental attendance pattern for check-up, an increase in the number of days when pain was experienced during the past month, multiple pain symptoms, and use of TCM when ill. The predicted probabilities for the final

multiple logistic regression model were calculated. Based on the classification table, the final model showed that the specificity = 93.2%, the sensitivity = 42.6%, and the total classification = 79.5%. The Nagelkerke R^2 of the final model was 0.341. Thus, it was considered to be a satisfactory model. Factors in the final model were also tested for multicollinearity. Since the tolerances for all variables were ≥ 0.07 , there was no problem of multicollinearity.

The multiple logistic regression was also run with participants experiencing toothache excluded from the computation. One hundred and sixty-six participants had orofacial pain of nondental origin. In the recalculated final model two independent factors were associated with treatment-seeking. Being female (OR = 5.42; 95% CI, 1.11 – 14.43; $P = .034$) and increased duration of pain symptoms (reference category: 1 to 5 days; 6 to 10 days: OR = 7.31; 95% CI, 1.92 – 27.9; > 16 days: OR = 10.85; 95% CI, 3.02 – 38.9; $P < .001$) were significantly related to an increased likelihood of professional treatment-seeking.

Discussion

This community-based study described orofacial pain experience and factors associated with treatment-seeking for orofacial pain symptoms in southern Chinese people in Hong Kong. It was prompted by the marked disparity in treatment-seeking related to orofacial pain symptoms between Chinese and western populations even although symptom prevalence data are similar.

The study sample was a convenience one, although the Hospital Authority Family Medicine Clinic was selected as the sampling frame because it was considered generally to mirror the adult population of Hong Kong. However, the nature of the database for sampling should be considered. There were inherent biases related to sampling from a patient register, not least because of the out-of-date registrations. In addition, the matter of people who were not registered is pertinent as the experience of orofacial pain symptoms in registered patients and unregistered people is likely to differ. Thus, caution should be exercised when extrapolating the findings to the general population. The participation rate was good, although more females (74%) than males (26%) with orofacial pain symptoms took part in the definitive assessment; therefore, self-selection bias should also be considered as a potential confounding factor. Nonetheless, in this community-based sample, the respondents' experience of orofacial pain symptoms was similar to the prevalence rates described previously in western and southern Chinese populations.²⁻⁴ In addition, about a half of those with orofacial pain were of low socioeconomic status. Thus, there was a clear link between orofacial pain experience and deprivation as shown previously in population-based surveys worldwide.^{27,28} What makes the present study distinct from previous community-based orofacial pain studies was that respondents' orofacial pain symptoms were confirmed by clinical assessment. The combined questionnaire/clinical assessment approach improved the reliability of the data substantially as it avoided the potential for misinterpretation of patient self-reports alone.

Less than a third of participants (27%) with clinically diagnosed orofacial pain had sought professional care. This was comparable with the level of treatment-seeking described in a previous population-based study of orofacial pain symptoms in Hong Kong⁴ and lower than previous reports in western populations.^{2,8} There was no difference in the proportion of men and women seeking treatment which supports a previous observation by Macfarlane et al⁸ that men and women are equally

likely to seek initial care for orofacial pain symptoms. However, no age-related differences were discerned in those who had sought treatment in contradistinction to the findings of Macfarlane et al⁸ where seeking treatment increased with age. The present study involved middle-aged and elderly people (34 to 70 years), whereas Macfarlane et al⁸ also included a younger group (18 to 35 years) which may account for the different observations. As clinical data were available for all patients, the relationship between pain diagnoses and professional treatment-seeking was also explored. The classification of pain diagnoses adapted from Hapak et al²⁵ was used to aggregate diagnoses. No differences in professional treatment-seeking were observed between MST, DA, and NV clinical subgroups. However, it should be noted that the results may have been different had another classification method been used, for example, the International Headache Society classification.²⁹

In order to identify key factors associated with treatment-seeking for orofacial pain, bivariate analyses were first performed to investigate the associations between treatment-seeking and sociodemographics, dental attendance pattern, pain characteristics, medication usage, and psychological factors individually. In consideration of the possible problem of multiple testing, the significance level was adjusted to $P < .01$ in order to reduce the risk of type I error. Multiple logistic regression was then performed to adjust the possible effects of confounding variables with only factors with $P < .05$ in the bivariate analyses considered in the multivariate analysis. It was acknowledged that with the sample size in this study, only five to six variables would be reliably evaluated in the multiple logistic regression. With this consideration in mind, the authors adopted the forward stepwise selection method in the multiple logistic regression, and the model was built up by adding in significant variables ($P < .05$) one by one. Six variables with $P < .05$ in the bivariate analyses were considered in the multiple logistic regression and only four significant variables were entered into the model in the following sequence: time experienced pain during the past month (days), multiple pain symptoms, dental attendance behavior, and then use of TCM when ill. Still, caution should be exercised when interpreting the results from this analysis, with a small sample size and a relatively large number of variables. There is a potential risk of falsely designating findings as statistically significant and it is recommended that a further validation with a larger sample size be undertaken to confirm the results of the study.

It was noted that while dental attendance was insignificant in the bivariate analysis ($P > .01$), it was significant in the multivariate analysis ($P = .002$) and the estimates of ORs differed markedly. It seems that the bivariate result was confounded towards the null hypothesis (no association) while, after the controlling of confounding variables in the multivariate model, the effect of dental attendance was revealed. However, it was also noted that the 95% CI of ORs for dental attendance continued to be wide (eg, 1.96 – 14.47) in the multivariate model, indicating the precision of the estimates was still low when compared to the bivariate estimate. It is acknowledged that multivariate modeling should be able to generate unbiased and more precise estimates after the controlling of confounding variables. Again, a further validation study with a larger sample size is desirable to better estimate the effect of dental attendance on treatment-seeking.

Four independent factors were associated with professional treatment-seeking in the present study, viz: more frequent dental attendance for check-ups (not withstanding the interpretation of the effect of dental attendance in the multilevel model and the recommendation discussed in the preceding paragraph), increased duration of pain in the previous month, multiple pain symptoms, and using TCM when ill. In a previous study by Macfarlane et al,⁸ six factors were associated with health-care seeking for orofacial pain symptoms (more frequent dental attendance, older age, pain commenced more than 3 months previously, higher pain frequency, inability to decrease the pain, and taking time off work because of pain). The only factor in common was more frequent dental attendance for dental check-ups. It is notable that in the Macfarlane et al⁸ study, orofacial pain symptoms were not confirmed by clinical assessment which may, at least in part, have accounted for some of the differences. In addition, the definition of orofacial pain did not include pain of dental origin and thus excluded toothache. In the present study, it was considered important to include toothache as untreated dental conditions are common in Hong Kong and people are often reluctant to seek treatment for them.³⁰ Nonetheless, in order to make a more direct comparison with the study by Macfarlane et al,⁸ participants with toothache were excluded and the statistical analyses were rerun. In the recalculated final model, two independent factors were associated with professional treatment-seeking viz being female and increased duration of pain episodes. Thus, factors associated with treatment-seeking for

orofacial pain appeared generally to be different in this ethnic group. Whilst it would generally be anticipated that people with orofacial pain symptoms would be more likely to take time off of work because of the pain,⁸ this was not the case in the present study. The authors have observed previously in a population-based sample that Hong Kong people are very unlikely to take time off as a consequence of orofacial pain symptoms due, at least in part, to local business practices and work-related culture whereby people with orofacial pain symptoms would be concerned about losing their jobs if sick leave was taken for such conditions.⁷

The relationship between psychological factors and health-care seeking remains unclear. This study showed that factors such as psychological distress, illness behavior, and depression (as measured by the RDC/TMD) did not appear to be related to treatment-seeking for orofacial pain. These findings are generally in agreement with previous observations by Macfarlane et al^{8,31} in the United Kingdom. Von Korff et al³² also found that psychological distress was not associated with health-care seeking for pain. Putative cultural differences in treatment-seeking are also pertinent as pain-related behaviors based on ethnic norms may affect the perception, evaluation, and responses to pain.^{33,34}

In this community-based study, only a small amount of orofacial pain symptoms and conditions resulted in a professional consultation. These findings support other orofacial pain studies in a community setting^{4,6,8} and represent another example of the iceberg-like nature of illness.³⁵ Available evidence suggests that potential barriers to health-care seeking are likely to differ between ethnic groups.^{4,6-8} In a recent study, Leung et al³⁶ observed in adult Hong Kong Chinese people that chronic orofacial pain symptoms were common and associated disability was quite high and yet the level of expressed need for professional care was low. Future qualitative studies that investigate barriers to treatment-seeking and pain-related illness behavior are warranted.

Acknowledgment

This study was supported by a CRCG grant from the University of Hong Kong.

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