

Prevalence of Oromandibular Dysfunction in a General Population

Rigmor Jensen, MD

Birthe Krogh Rasmussen, MD

Birthe Pedersen, DDS

Inger Lous, DDS

Jes Olesen, MD, PhD

The Glostrup Population Studies
Department of Internal Medicine C
Glostrup Hospital
University of Copenhagen
and Department of Neurology
Gentofte Hospital
University of Copenhagen
Copenhagen, Denmark

Correspondence to:

Dr Rigmor Jensen
Department of Neurology
Gentofte Hospital
DK-2900 Hellerup, Denmark

The prevalence of oromandibular dysfunction was studied in 735 subjects from a random sample population of 1,000 subjects aged 25 to 64 years. A diagnosis of oromandibular dysfunction was based on criteria established by the International Headache Society, as a subgroup to tension-type headache. Tenderness in pericranial or jaw muscles was not included. The most common symptoms were clenching (22%) and grinding of teeth (15%). The most common sign was irregular jaw movements on opening and closing (29%). The ratio of men to women for most symptoms and signs ranged from 2:3 to 1:3. This study serves as a base in evaluating the importance of oromandibular dysfunction as a causative factor for tension-type headache.

J OROFACIAL PAIN 1993;7:175-182.

Disorders affecting the masticatory system may be related to occlusion (lack of molars, occlusal disorders), parafunction (bruxism, clenching, tongue pressure), or articulation (arthritis, arthrosis, clicking at function), as well as other factors. Whether morphologic or physiologic factors cause masticatory muscle tenderness and headache is difficult to evaluate from the previous literature because tenderness in jaw muscles often has been included as a sign of dysfunction.¹⁻⁶ Various indexes of temporomandibular joint pain dysfunction syndrome,⁷ myofascial pain dysfunction syndrome,⁸ and craniomandibular disorders⁹ have all included jaw muscle tenderness. Because tenderness may be a part of a generalized myofascial syndrome, cause-effect relations have largely remained unclear.¹⁰

The headache classification committee of the International Headache Society (IHS) tried to obviate such problems by creating a new term, oromandibular dysfunction (OMD),¹¹ which included some signs and symptoms of dysfunctions and parafunctions of the jaw, tongue, and mouth, but not pericranial or jaw muscle tenderness (Table 1). The criteria for OMD were, however, chosen rather arbitrarily.

The aim of the present study was to evaluate the prevalence of some symptoms and signs of dysfunction and parafunctions, and to describe the prevalence of OMD according to the IHS criteria (OMD criteria). Symptoms, signs, and OMD will be related to the prevalence of headaches in a subsequent publication. Whether these factors can cause or contribute to tenderness of masticatory muscles or headache has not been clarified, despite much effort.¹⁻⁴

Table 1 Criteria of Oromandibular Dysfunction

Three or more of the following:
1. Temporomandibular joint noise on jaw movements
2. Limited or jerky jaw movements
3. Pain on jaw function
4. Locking of jaw on opening
5. Clenching of teeth
6. Gnashing (grinding) of teeth
7. Other oral parafunction (tongue, lip, or cheek biting or pressing)

Materials and Methods

A random sample population of 1,000 persons aged 25 to 64 years was drawn from the National Central Person Registry; the subjects lived in the western part of Copenhagen County. The total population of the sampling area was 325,621, which is 54% of the Copenhagen County population and 6% of the total Danish population. The sampling area was representative of the total Danish population with regard to most sociodemographic variables (except for underrepresentation of fishing and agriculture and overrepresentation of trades, services, and salaried employees).

The total population of 1,000 subjects was reduced to 975 because of death ($n = 3$) and emigration ($n = 17$) in the period between the date of sampling and the date of planned examination; five subjects were lost as a result of address errors. The dental examination was attended by 735 subjects. The nonparticipants ($n = 235$) were contacted by telephone or postal questionnaires, and information was thus obtained from 78.7% of these. The nonparticipants did not differ from the participants with regard to age, sex, general health, and sociodemographic variables. Further analysis of the representativeness of the examined population has been reported elsewhere.¹² All subjects received a standard letter inviting them to a general health examination lasting 3 to 4 hours. Included with the invitation was a detailed questionnaire to be completed at home before the examination. The subjects were studied between January and July 1989 at the Glostrup Population Studies. The project was approved by the local ethics committee.

The questionnaire comprised 13 questions about functional disturbances of the masticatory system and awareness of frequent parafunctions (Table 2). This information was discussed with the physician on the day of examination.

The investigator (BP) is a trained dentist and was completely unaware of each subjects' case his-

Table 2 Questions Asked of Study Participants to Determine Their Awareness of Masticatory Disturbances (Yes or No)

1. Do you have difficulty or pain when you yawn? (OMD criteria 3)
2. Do you have difficulty or pain when you chew food? (OMD criteria 3)
3. Do you have difficulty or pain when you swallow food?
4. Do your jaws make audible clicks that others can hear when you yawn?
5. Do your jaws make audible clicks that others can hear when you chew or talk?
6. Do you often press your teeth together? (OMD criteria 5)
7. Do you often grind your teeth during sleep? (OMD criteria 6)
8. Do you often press your tongue against your teeth or palate? (OMD criteria 7)
9. Do you often bite your tongue or lips? (OMD criteria 7)
10. Do you often bite your cheeks? (OMD criteria 7)
11. Do you often have restlessness in your mouth, jaw, or tongue?
12. Are your jaws tender and stiff when you wake up in the morning?
13. Have you ever injured your mandible in an accident or by violence?

tory. The dentist was not allowed to communicate with the subjects except by giving the relevant instructions and recording responses. The examination was standardized and done by the same dentist throughout the study. Results were recorded on computer-ready forms.

Each participant was examined while sitting in a comfortable dental chair with headrest. Tenderness of the pericranial muscles and tendons was first tested,¹³ followed by palpation of the temporomandibular joint (TMJ).

The subject was asked to open and close the mouth several times and to move the mandible from side to side. Directly audible clicking on condylar movement was recorded (OMD criteria 1). Auscultation with a stethoscope was not used.

The lateral and dorsal aspects of the TMJs were palpated. The subject was asked to open and close the mouth several times during palpation. Any significant irregular and/or asymmetric movement of the condyles (OMD criteria 2), as well as verbally expressed discomfort or pain, was recorded.

Mobility of the mandible was measured as the distance between the incisal edges of a corresponding pair of central incisors when the mouth was opened widely. No correction was made for vertical overlap of anterior teeth. The lower limit for normal variation of this movement was 40 mm¹⁴ (OMD criteria 2).

Table 3 Age and Sex Distribution of the Examined Population

Age (yr)	No. (%) men	No. (%) women	Total (%)
25-34	87 (11.8)	91 (12.4)	178 (24.2)
35-44	117 (15.9)	101 (13.7)	218 (29.7)
45-54	105 (14.3)	91 (12.4)	196 (26.7)
55-64	75 (10.2)	68 (9.3)	143 (19.5)
Total	384 (52.2)	351 (47.8)	735 (100.0)

Table 4 Prevalence of Individual Symptoms and Signs Included in Oromandibular Dysfunction According to Sex

	No. (%) men (n = 384)	No. (%) women (n = 351)	Total (%) (n = 735)
Symptoms			
Pain at function	9 (2.3)	17 (4.8)	26 (3.5)
Clenching	61 (15.8)	101 (28.9)**	162 (22.1)
Grinding	46 (12.0)	66 (18.9)**	112 (15.3)
Tongue/lip biting	20 (5.2)	47 (13.4)**	67 (9.1)
Cheek biting	27 (7.0)	49 (14.0)**	76 (10.3)
Tongue-pressing	43 (11.2)	90 (25.6)**	133 (18.1)
Other oral parafunction†	68 (17.8)	133 (38.4)**	201 (27.6)
Signs			
TMJ clicking sounds	47 (12.2)	67 (19.0)*	114 (15.4)
Limited movement (<40 mm)	21 (5.5)	39 (11.0)**	60 (8.1)
Irregular jaw movement	90 (23.4)	123 (34.8)**	213 (28.9)

*Significant at .05 (M-H test).

**Significant at .01 (M-H test).

***Significant at .001 and below (M-H test).

† n = 728 (7 patient questionnaires were incomplete).

Open bite was recorded when the vertical distance between the maxillary and mandibular incisal edges was more than 2 mm. Large horizontal overbite (overjet) was defined as a horizontal distance between the maxillary and mandibular incisors of 6 mm or more. Deep vertical overbite (deep bite) was defined as a vertical overlap of the mandibular incisors by the maxillary incisors of 5 mm or more. Crossbite was defined as an occlusion of the buccal cusps of the maxillary premolars or molars lingually to the cusps of the corresponding mandibular teeth. Scissorbite was defined as an occlusion of the lingual cusps of the maxillary premolars or molars buccally to the cusps of the corresponding mandibular teeth.

Uncompensated tooth loss in the molar and premolar areas was defined to include a loss of two or more neighboring teeth. Function of dentures was based on evaluation of placement, retention, form, vertical dimension, and occlusal conditions. Function was classified as satisfactory or unsatisfactory by the dentist.

Data were analyzed using the chi-square test for unpaired data and McNemar's test for paired data

with a 5% level of significance. Mantel-Haenszel summary chi-square test (M-H test) was used to control for age confounding.¹⁵

Results

The distributions of age and sex of the participants are listed in Table 3. The single symptoms included in OMD definition are presented according to sex in Table 4. Significantly more women than men reported awareness of frequent clenching ($P < .0001$), grinding ($P = .01$), and other oral parafunction (tongue/lip/cheek biting and tongue pressing; $P < .00001$). Pain caused during function was not significantly different between the sexes ($P = .15$). The signs included in the OMD definitions—audible clicks, irregular jaw movements, and limitations of movement—were significantly more prevalent in women than in men ($P = .02$, $P < .001$, $P < .01$, respectively) (Table 4).

Significantly more subjects in the younger age group reported frequent grinding than in the older age group ($P = .01$) when the two younger age

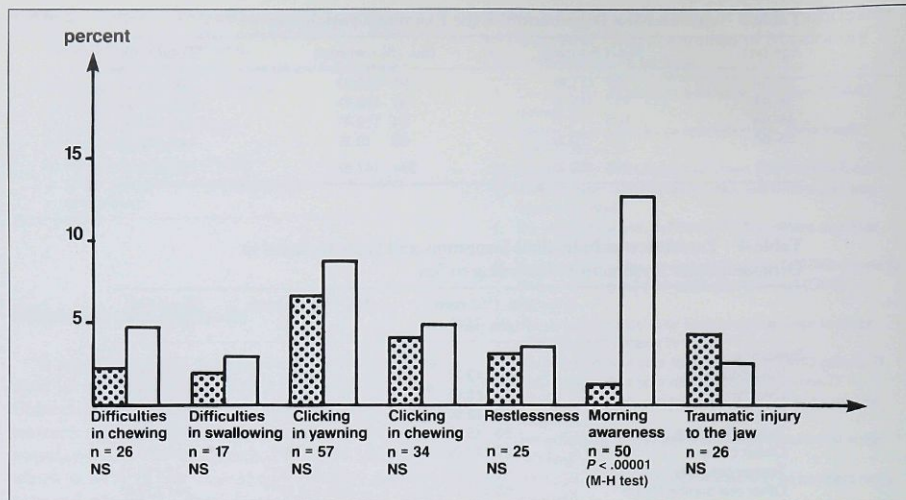


Fig 1 Distribution by sex of symptoms not included in the OMD definition of the IHS. Filled bars represent men; open bars represent women.

Table 5 Morphologic Malocclusion According to Sex

Age group	No. (%) with large horizontal overbite	No. (%) with deep vertical overbite	No. (%) with crossbite	No. (%) with scissorbite	No. (%) with open bite
Men (n = 384)	20 (5.2)	8 (2.1)	58 (15.0)**	8 (2.1)	7 (1.8)
Women (n = 351)	25 (7.1)	4 (1.1)	31 (8.8)	8 (2.3)	5 (1.4)
Total (n = 735)	45 (6.1)	12 (1.6)	89 (12.0)	16 (2.2)	12 (1.6)

** $P = .01$ (M-H test).

Table 6 Tooth Loss and Denture Prevalence According to Sex and Age Group

	No. (%) with uncompensated tooth loss	No. (%) with complete dentures (total)	No. (%) with complete dentures (satisfactory)	No. (%) with complete dentures (unsatisfactory)
Age				
25-34 (n = 178)	57 (31.8)	2 (1.1)	0	2 (1.1)
35-44 (n = 218)	117 (53.9)	4 (1.8)	3 (1.4)	1 (0.5)
45-54 (n = 196)	153 (77.3)	35 (17.7)	28 (14.1)	7 (3.5)
55-64 (n = 143)	134 (92.4)***	38 (26.2)*	20 (13.8)	18 (12.4)
Sex†				
Men (n = 384)	241 (62.4)	38 (9.8)	22 (5.7)	16 (4.1)
Women (n = 351)	220 (62.3)	41 (11.6)	29 (8.2)	12 (3.4)
Total (n = 735)	461 (62.4)	79 (10.7)	51 (6.9)	28 (3.8)

*Significant at .05 (chi-square test).

**Significant at .001 and below (chi-square test).

†No significant differences according to sex (M-H test).

groups (ages 25 to 34 and 35 to 44 years) were analyzed together against the two older age groups (ages 45 to 54 and 55 to 64 years). Of the signs included in the OMD definitions, limited jaw opening capacity was more prevalent in the older age groups than in the younger age groups ($P < .001$). No other significant differences or trends between age groups emerged.

Of oromandibular symptoms not included in OMD definition (Table 2, questions 3 to 5 and 11 to 13), morning awareness of stiffness and tenderness in the masticatory muscles was noted significantly more frequently by women than by men ($P < .00001$), while the other symptoms showed no significant differences between sexes (Fig 1). No significant differences were detected between age groups. Crossbite was significantly more common in men ($P = .01$), but no other differences were found between sexes and age groups with regard to the morphologic malocclusions presented in Table 5.

Table 6 shows the distribution of persons with uncompensated tooth loss in molar/premolar regions, with complete dentures and with unsatisfactory function of dentures. Not surprisingly, tooth loss ($P < .0001$) and the number of persons with dentures increased with age ($P = .02$), but there was no significant difference between the sexes. Tenderness of the TMJ on palpation showed no significant variation between sexes on either side (right: $P = .15$; left: $P = .35$) (Table 7) or between different age groups (right: men, $P = .18$, women, $P = .29$; left: men, $P = .72$, women, $P = .15$). The right TMJ was significantly more tender on palpation than the left in both sexes (total, $P = .0001$; men, $P = .002$; women, $P < .001$) (Table 7). Bilateral TMJ tenderness was present in 67 participants. There were significantly more women with three or more OMD symptoms than men (M-H test: $P < .00001$), with the ratio of men to women being about 1:3 (Table 8). Having three or more

OMD symptoms or signs did not vary with age (total, $P = .26$; men, $P = .07$; women, $P = .98$) (Table 8).

Discussion

There is no internationally accepted classification of craniomandibular disorders. Several terms have been used to describe functional and painful disturbances of the masticatory system since Costen¹⁶ described his pain syndrome in 1934. In 1956 Schwartz⁷ described the TMJ pain dysfunction syndrome and in 1969 Laskin and coworkers⁸ defined the MPD syndrome. They concluded that muscle fatigue was the primary factor responsible for the symptoms and signs of MPD. During the 1970s and 1980s, functional disturbances were termed mandibular dysfunction,^{3-6,17,18} craniocervical-mandibular syndrome,¹⁹ and craniomandibular disorders.⁹ All these terms included a functional evaluation of the TMJ as well as of the condition of masticatory muscles.

Attempts to introduce indexes of severity have been made by several investigators by simple summation of symptoms and/or signs.^{2,3,20-22} The validity of these indexes has been limited because experimental design and diagnostic criteria varied

Table 7 TMJ Tenderness According to Sex

Sex†	No. (%) right side	No. (%) left side
Men (n = 384)	70 (18.1)*	39 (10.1)
Women (n = 351)	79 (22.5)**	43 (12.2)
Total + (n = 735)	149 (20.2)***	82 (11.1)

* $P < .01$ (McNemar test).

** $P < .001$ (McNemar test).

*** $P < .0001$ (McNemar test).

†No significant differences according to sex.

Table 8 Distribution of Three or More Symptoms and Signs of Oromandibular Dysfunction in Relation to Sex and Age Group

Sex	No. (%) 25-34 (n = 173)	No. (%) 35-44 (n = 214)	No. (%) 45-54 (n = 189)	No. (%) 55-64 (n = 139)	Total (%) (n = 715)‡
Men ≥ 3 OMD (n = 376)	6 (7.0)	7 (6.1)	2 (2.0)	9 (12.2)	24 (6.4)
Women ≥ 3 OMD (n = 339)	19 (21.8)	18 (18.2)	15 (17.0)	14 (21.5)	66 (19.5)***
Total ≥ 3 OMD (n = 715)‡	25 (14.5)	25 (11.7)	17 (9.0)	23 (16.5)	90 (12.6)

*** $P < .00001$ (M-H test).

‡Total was reduced because 25 patients returned incomplete questionnaires or did not undergo complete dental examinations.

between studies,^{4,23} and specificity and sensitivity of these indexes have seldom been documented or tested in subsequent studies.^{21,22} Recently, guidelines for evaluation and diagnosis of CMD have been presented.²⁴ The diagnostic criteria for oromandibular dysfunction given by the IHS classification¹¹ as a subcriteria of tension-type headache are operational and do not include muscle tenderness. In this way the criteria diverge from previous indexes and are composed rather arbitrarily to evaluate TMJ disturbances and oral parafunctions as possible risk factors for tension-type headache. Muscle tenderness may be a part of a generalized myofascial syndrome or it may indicate a transient local dysfunction in the neck, shoulder, or back without any relation to oromandibular disorders.¹⁰

The pericranial musculature was the main source of pain in a recent epidemiologic study,²⁵ and it emphasized the need for independent evaluations of dysfunctions and muscles for the use of a secondary comprehensive analysis. The IHS criteria of OMD are easy for a physician to use during screening, but there may be limitations in using summation of major or minor symptoms or signs without implications of frequency or severity. The new OMD criteria have never received formal testing, and this is the first study to apply them to a general population.

Prevalence Results in Relation to Previous Studies

We have found the prevalence of symptoms to be fairly common in the general population with a significant female preponderance. This is in agreement with the majority of previous studies, in which reports of grinding, clenching, tongue pressing, and morning stiffness of the jaws have been more frequent among women than men.^{1-4,6,7,26,27} Only earlier traumatic injuries of the jaws showed a higher, but not significant, prevalence in men. Ingervall et al²⁸ reported that 20% of the male population in his study had a traumatic mandibular injury at some time, and Helkimo⁶ found traumatic injuries preceding onset of symptoms of mandibular dysfunctions in 7% of the male subjects. With regard to age, grinding was more frequently reported in the younger age groups, which corresponds to the findings of routine dental treatment in a private practice.¹² As in other investigations,^{4,23} limitation of mandibular movement was more prevalent in older age groups and is a reflection of age-related joint limitations rather than a pathologic phenomenon.

Our general prevalence rate of individual symptoms and signs is very difficult to compare with

previous prevalence rates because of differing methods and criteria. However, regarding the younger age groups there is agreement with the studies of Solberg³ and Molin²⁹ but not with other studies.^{4,5,17,18,30}

The prevalence of morphologic malocclusions corresponds to previous studies.^{19,31} The frequency of tenderness on TMJ palpation is higher than that reported by Solberg³ but lower than the frequency cited elsewhere.^{1,2,5,6} No differences were found between sexes, and while this corresponds to the results of one study,³ others have reported a significant female preponderance of TMJ tenderness.¹

Some of the differences between symptoms and signs in previous studies are caused by a high prevalence of muscle tenderness and TMJ sounds recorded by stethoscope.^{1,3,5,6,17,18} In the present study, muscle tenderness was not included, and only directly audible sounds were recorded. This is probably why an approximately equal number of symptoms and signs was found.

Methodologic Considerations

The population in the present study was randomly drawn from the general Danish population, and the examined population included 52% men and 48% women. Other investigations¹² have had a larger proportion of women. When comparing study populations to general populations, correction for these differences is necessary.

Because of time constraints masticatory ability and efficiency was not investigated, as it was in Agerberg's studies^{4,30} nor did this study focus on the onset and time profile of the oromandibular symptoms.^{5,6} Such questions were beyond the scope of this study; however, they could be important in a longitudinal population study of dental health. The present study included the response option "often" in questions about the most frequent parafunctions, such as grinding, clenching, and tongue biting. Although there was a risk of underestimating these symptoms, it was nevertheless desirable to obtain useful information without recording lifetime prevalence of these very widespread parafunctions. It is of fundamental importance to be aware of the wordings of the questions to get reliable and reproducible answers. In the present study no inquiry was made as to the occurrence of locking, because locking very seldom occurs without preceding symptoms of TMD, ie, clicking or irregular movement.²⁷ Such a question was excluded so that the study would be highly specific; however, its importance in longitudinal, clinical, and epidemiologic studies is understood.

The results of this study could be considered representative of the total Danish population but not necessarily of other populations, because dental health varies widely. The majority of our younger population had regular dental examinations from 3 or 4 years of age and therefore probably had better dental health than individuals examined several years ago.^{5,6}

Diagnostic Considerations

It is extremely difficult to decide the limits of normality for phenomena that occur quite frequently in the general population. However, this is the case for most of the symptoms included in the usual definition of oromandibular disorders. Many important studies have been carried out in selected and unselected populations. These studies have given an estimate of the prevalence of the disorders and served to identify notable symptoms and to establish diagnostic criteria for each symptom. Nevertheless, to define normal limits of common oromandibular phenomena, it is necessary to examine large samples from the general population. With defined criteria and standardized protocols, use of one or very few trained examiners and blinding is necessary to reduce observer bias. The present study fulfills the demands for information about a general population: it documents for the first time that 13% of the general population meet the operational diagnostic criteria of the IHS for oromandibular dysfunction, although further analysis of the single elements and their relationship to headache disorders are under preparation to evaluate the present criteria.

Acknowledgments

This survey was supported by grants from the Danish Health Insurance Foundation (H 11/238-88, H 11/262-89), DAK-Medica (379), the Lundbeck Foundation (86/88), Glaxo (1989), the Foundation for Experimental Research in Neurology (1988), and the Danish Migraine Society (1988).

References

- Rieder CE, Martinoff JT, Wilcox SA. The prevalence of mandibular dysfunction. Part I: Sex and age distribution of related signs and symptoms. *J Prosthet Dent* 1983; 50:81-88.
- Rieder CE. The incidence of some occlusal habits and headaches/neckaches in an initial survey population. *J Prosthet Dent* 1976;35:445-451.
- Solberg WK. Prevalence of mandibular dysfunction in young adults. *J Am Dent Assoc* 1979;98:25-34.
- Agerberg G, Carlsson GE. Symptoms of functional disturbances of the masticatory system. *Acta Odontol Scand* 1975;33:183-196.
- Helkimo M. Studies on function and dysfunction of the masticatory system. An epidemiological investigation of symptoms of dysfunction in Lapps in the north of Finland. *Proc Finn Dent Soc* 1974;70:37-49.
- Helkimo M. Studies on function and dysfunction of the masticatory system. IV. Age and sex distribution of symptoms of dysfunction of the masticatory system in Lapps in the north of Finland. *Acta Odontol Scand* 1974;32:255-267.
- Schwartz L. A temporomandibular joint pain dysfunction syndrome. *J Chronic Dis* 1956;3:284-296.
- Laskin DM. Etiology of the pain-dysfunction syndrome. *J Am Dent Assoc* 1969;79:147-153.
- McNeill C, Danzig W, Farrar WB, Gelb H, Lerman M, et al. Craniomandibular disorders—The state of art. *J Prosthet Dent* 1980;44:134-137.
- Yunus M, Masi AT, Calabro JJ, Miller KA, Feigenbaum SL. Primary fibromyalgia (fibrositis): Clinical study of 50 patients with matched normal controls. *Semin Arthritis Rheum* 1981;11:151-171.
- Headache Classification Committee of the International Headache Society. Classification and diagnostic criteria for headache disorders, cranial neuralgias and facial pain. *Cephalalgia* 1988;8(suppl 7).
- Rasmussen BK, Jensen R, Schroll M, Olesen J. Epidemiology of headache in a general population—A prevalence study. *J Clin Epidemiol* 1991;44:1147-1157.
- Jensen R, Rasmussen BK, Pedersen B, Lous I, Olesen J. Cephalic muscle tenderness and pressure pain threshold in a general population. *Pain* 1991;48:197-203.
- Kroggh-Poulsen WG. Examination, diagnosis, treatment. In: Schwartz L, Chayes CM (eds). *Facial Pain and Mandibular Dysfunction*. Philadelphia: Saunders, 1968: 249-280.
- Mantel N, Haenszel W. Statistical aspects of the analysis of data from retrospective studies of disease. *J Natl Cancer Inst* 1959;22:719-748.
- Costen JB. Syndrome of ear and sinus symptoms dependent upon disturbed function of the temporomandibular joint. *Ann Otol Rhinol Laryngol* 1934;43:1-15.
- Wänman A, Agerberg G. Mandibular dysfunction in adolescents I. Prevalence of symptoms. *Acta Odontol Scand* 1986;44:47-54.
- Wänman A, Agerberg G. Mandibular dysfunction in adolescents II. Prevalence of signs. *Acta Odontol Scand* 1986;44:55-62.
- Gelb H, Tarte J. A two-year clinical evaluation of 200 cases of chronic headache: The craniocervical-mandibular syndrome. *J Am Dent Assoc* 1975;91:1230-1236.
- Helkimo M. Studies on function and dysfunction of the masticatory system. II. Index for anamnestic and clinical dysfunction and occlusal state. *Swed Dent J* 1974;67: 101-121.
- Fricton JR, Schiffman EL. The craniomandibular index: Definition and reliability. *J Dent Res* 1986;65:1359-1364.
- Fricton JR, Schiffman EL. The craniomandibular index: Validity. *J Prosthet Dent* 1987;58:222-228.
- Hansson T, Nilner M. A study of the occurrence of symptoms of diseases of the temporomandibular joint masticatory musculature and related structures. *J Oral Rehabil* 1975;2:313-324.
- American Academy of Craniomandibular Disorders. *Craniomandibular Disorders: Guidelines for Evaluation, Diagnosis, and Management*. Chicago: Quintessence, 1990.

25. Schiffmann EL, Friction JR, Haley DP, Shapiro BL. The prevalence and treatment needs of subjects with temporomandibular disorders. *J Am Dent Assoc* 1990;120:295-305.
26. Agerberg G, Inkapool I. Craniomandibular disorders in an urban Swedish population. *J Craniomandib Disord Facial Oral Pain* 1990;4:154-164.
27. Seligman DA, Pullinger AG, Solberg WK. The prevalence of dental attrition and its association with factors of age, gender, occlusion, and TMJ symptomatology. *J Dent Res* 1988;67:1323-1333.
28. Ingerwall B, Mohlin B, Thilander B. Prevalence of symptoms of functional disturbances of the masticatory system in Swedish men. *J Oral Rehabil* 1980; 7:185-197.
29. Molin C, Carlsson GE, Friling B, Hedegaard B. Frequency of symptoms of mandibular dysfunction in young Swedish men. *J Oral Rehabil* 1976;3:9-18.
30. Agerberg G, Carlsson GE. Chewing ability in relation to dental and general health. *Acta Odontol Scand* 1981;39:147-153.
31. Helm S, Kreiborg S, Solow B. Malocclusion at adolescence related to self-reported tooth loss and functional disorders in adulthood. *Am J Orthod* 1984;85:393-400.
32. Schwartz L. The pain-dysfunction syndrome. In: Schwartz L, Chayes CM (eds). *Facial Pain and Mandibular Dysfunction*. Philadelphia: Saunders, 1968: 150-155.

Resumen

La prevalencia de la disfunción oromandibular en una población general

Se estudió la prevalencia de la disfunción oromandibular en 735 personas seleccionadas al azar de una población de 1,000 sujetos que tenían de 25 a 64 años de edad. El diagnóstico de la disfunción oromandibular estaba basado en las normas establecidas por la Sociedad Internacional de Cefaleas, como un subgrupo de las cefaleas relacionadas a la tensión. No se incluyeron los síntomas de sensibilidad en los músculos pericraneales o mandibulares. Los síntomas más comunes fueron el apretamiento (22%) y el crujido de los dientes (15%). Los signos más comunes fueron los movimientos mandibulares irregulares en la apertura y el cierre (29%). La proporción de hombres a mujeres afectados por la mayoría de los síntomas y signos varió entre 2:3 a 1:3. Este estudio sirve de base para evaluar la importancia de la disfunción oromandibular como un factor causante de la cefalea relacionada a la tensión.

Zusammenfassung

Prävalenz von oromandibulären Störungen in der allgemeinen Bevölkerung

Die Prävalenz von oromandibulären Störungen wurde an 735 Probanden aus einer Stichprobe von 1000 Leuten im Alter von 25 bis 64 Jahren untersucht. Die Diagnose einer oromandibulären Störung als Untergruppe von Spannungstypkopfweh wurde anhand von Kriterien gestellt, welche von der International Headache Society definiert wurden. Druckempfindlichkeit von perikranialen und von Kaumuskeln wurde nicht eingeschlossen. Die häufigsten subjektiven Symptome waren Pressen (22%) und Knirschen der Zähne (15%). Unregelmässigkeiten in den Unterkieferbewegungen beim Öffnen und Schliessen (29%) waren das häufigste objektive Symptom. Das Verhältnis von Männern zu Frauen reichte für die meisten subjektiven und objektiven Symptome von 2:3 bis 1:3. Diese Untersuchung dient als eine Grundlage für die Evaluation der Bedeutung von oromandibulären Störungen als kausaler Faktor beim Spannungstypkopfweh.