

# Pain and the Quality of Life in Patients Referred to a Craniofacial Pain Unit

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*Although there are reasons to believe that temporomandibular disorders and other facial pain conditions would have a major impact on the quality of patients' lives, only a small number of studies have attempted to address this in a systematic way. In this study, data on pain and its consequences were assessed for 121 patients making their first visit to a craniofacial pain research unit. The extent to which musculoskeletal and neurologically based facial pain compromised the quality of life was measured using the Oral Health Impact Profile, a recently developed index of the functional and psychosocial outcomes of oral conditions. The data indicated that facial pain had a substantial impact on daily life and that its most common outcomes were psychologic. When compared with a nonpain population, the extent of this impact was striking. There was a four-fold increase in functional problems such as difficulty chewing foods and a nine-fold increase in reports of depression. As anticipated, scores on the Oral Health Impact Profile were associated with the characteristics of the pain and diagnostic subgroups.*

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Facial pain conditions, including temporomandibular disorders (TMD), often share a common set of symptoms. These may include pain in the masticatory and associated muscles, pain in the face or in the temporomandibular joint (TMJ), dysfunction in the form of limitations in jaw opening or other movements, and joint sounds involving clicking, popping, or grating. Studies in the United States<sup>1</sup> and Canada<sup>2</sup> have suggested that the prevalence of TMD-related pain is approximately 12%. Although other facial pain conditions such as trigeminal neuralgia and atypical facial pain are less common, they add to the burden imposed by facial pain on individuals and the community.

Research focusing on behavioral science issues and on facial pain conditions has largely been concerned with documenting the social, psychologic, and personality characteristics of TMD patients,<sup>3,4</sup> or it has been etiologic in character with a focus on stress as a causal factor.<sup>4,5</sup> More recently it has been suggested that facial pain can be a chronic pain condition and, like all such conditions, needs to be viewed from a perspective that includes biologic, psychologic, and social/cultural influences.<sup>6</sup> In characterizing TMD as an illness rather than a disease, for example, Dworkin<sup>6</sup> has indicated the necessity of taking into account "the physical discomfort, emotional distress, behavioural limitations and psychosocial disruptions" that accompany them. This means understanding the health outcomes of these disorders in terms of their functional, psychologic, and social impact.<sup>7</sup>

Given the importance of the oral cavity in terms of key functions such as eating and communication, the psychologic significance of the face and mouth, and the manifestations of TMD and other conditions involving facial pain, there is reason to believe that this group of disorders has a major impact on functioning and quality of life. Although quality-of-life issues have been given passing reference in a number of studies<sup>8-10</sup> of these patients, relatively few have addressed the functional and psychosocial impact of facial pain in a systematic way. This is in part because of the predominantly biomedical perspective through which facial pain conditions have been viewed,<sup>6</sup> and in part because of a lack of appropriate instruments for measuring this dimension of the problem. Even though health-related quality-of-life measures have been used extensively in medicine, their development and application in dentistry is relatively recent. The development of such measures will facilitate a multidisciplinary approach to diagnosis, treatment, and patient management.<sup>11</sup>

The few studies that are available pertain to TMD and lend support to the hypothesis that these disorders have a major impact on the quality of life. This is evident in the work of Reisine and Weber,<sup>3</sup> who assessed TMD patients recruited from general dental practices with a battery of generic health status measures. Using seven subscales from the Sickness Impact Profile,<sup>12</sup> substantial proportions of these subjects were found to be compromised in terms of social functioning and activities of daily life. For example, 53% reported dysfunction in the area of sleep and rest, and 57% reported dysfunction with respect to intellectual activities. In four of the seven areas of daily life examined, the TMD patients had higher scores than did a comparison group of cardiac patients. Bush and Harkins<sup>13</sup> and Dao et al<sup>14</sup> used concise seven- and eight-item measures of pain-related disability and quality of life, and they demonstrated significant impacts on daily living, the magnitude of which varied among diagnostic subgroups of TMD patients. Von Korff et al<sup>15,16</sup> demonstrated that the psychologic outcomes of TMD in terms of rates of depression and somatization were equivalent to, if not greater than, those associated with headache and back pain. Whether these findings apply to other facial pain conditions is not currently known.

The present study investigated the impact of facial pain and associated symptoms on daily life using the Oral Health Impact Profile (OHIP).<sup>17</sup> This is a comprehensive measure specifically developed for assessing the health outcomes of oral con-

ditions. In this regard, it is likely to be more sensitive than measures previously used, and it is also likely to reveal negative effects on areas of life not addressed by earlier studies. The aims of the present study were to describe the impact of facial pain on the quality of life and to assess variations because of the sociodemographic, pain, and diagnostic characteristics of patients. Pain patients' scores on the OHIP were also compared with those of a nonpain patient population to determine the relative magnitude of the effects of facial pain on daily living.

## Materials and Methods

### Study Subjects

Study subjects were new patients referred to a facial pain research unit situated in a large tertiary care center in a major metropolitan area in Canada. Female patients at this clinic outnumber male patients by 4:1. Patients were identified from the appointment book and were contacted approximately 1 month before their first clinic appointment. The design used was a simple clinical case series, and subjects were recruited sequentially until the target of 120 was reached.

### Research Procedures

Each new patient was mailed a letter requesting their participation in the study. It explained the aims of the study, the tasks required, and the confidential nature of all data collected. Along with the letter was a self-administered questionnaire, a consent form for the release of diagnostic and treatment information, and a stamped addressed return envelope. The study design and its procedures were approved by the relevant institutional Human Subjects Certification Committee.

The questionnaire had two sections. The first collected information on the characteristics of the pain experienced by subjects. Ten questions were asked concerning the type and location of pain and associated symptoms, the frequency of pain, and its approximate duration during a pain episode. The severity of pain was measured in two ways. One method consisted of a five-point category scale that had the following response options: mild; discomforting; moderately severe; severe; and very severe. The other was a numerical rating scale in which 0 indicated "no pain" and 10 indicated "pain as bad as it could be."

The OHIP consists of 49 items organized into

seven subscales: functional limitation; physical pain; psychologic discomfort; physical disability; psychologic disability; social disability; and handicap. The measure and its component subscales were based on a series of concepts derived from the International Classification of Impairments, Disabilities and Handicaps.<sup>18</sup> To minimize respondent burden, only 30 items were used. The items comprising the physical pain subscale were dropped to avoid overlap with the pain symptoms and severity questions, and a number of other items that were not relevant to facial pain were dropped. Two items not in the original OHIP, "Taking longer to complete a meal" and "Avoiding eating with others" were added because they had proven useful in previous studies that the authors had undertaken using this instrument.

The OHIP items were written as questions with the following format: "In the past month, how often have you had difficulty chewing any foods because of your pain?" The response options were "very often," "fairly often," "occasionally," "hard-

ly ever," and "never." Following the initial clinic visit, diagnostic information was abstracted from the records of those subjects giving their consent.

### Statistical Analysis

In analyzing the data, the chi square test was used for categorical data, and *t* tests and one-way analysis of variance were used for numerical scores. The former test was done for the significance of group differences in proportions, and the latter tests were done for the significance of group differences in means. Cronbach's  $\alpha$  was used to assess the internal consistency reliability of the OHIP and its subscales for this patient population.

### Results

Completed questionnaires were obtained from 121 patients who attended the Craniofacial Pain Unit. These represent 54% of those invited to take part in the study. Females comprised 78.5% of subjects, and males comprised 21.5%. Their age distribution was as follows: 29 years or younger, 27.5%; 30 to 49 years, 45.0%; and 50 years and older, 27.5%. The mean age of subjects was 40.2 years (standard deviation [SD] = 15.9).

**Table 1** Prevalence of Pain Symptoms in the Past Month

Symptoms	n	%
Pain in the TMJ	80	66.1
Pain in face in front of ear	72	59.5
Pain in or around the eyes	37	30.6
Pain when opening the mouth wide	71	58.7
Shooting pains in the face or cheeks	31	25.6
Pain in the TMJ when chewing	73	60.3
Pain in and around the temples	49	40.5
Frequent headaches	57	47.1
Tenderness of muscles at side of face	73	60.3
Clicking or grating noise in jaw joint	79	65.3

### Characteristics of Pain Symptoms

The percentage of subjects experiencing 10 TMD- and facial pain-related symptoms during the previous month is shown in Table 1. The mean number of pain symptoms per subject was 5.1 (SD = 2.8), and 82.7% experienced multiple symptoms. On average, males reported more symptoms than did females (5.5, SD = 2.8 versus 4.0, SD = 3.0;  $P < .05$ ), but there were no statistically significant differences by age. The most frequently reported symptoms were pain in the TMJ (66.1%), TMJ sounds (65.3%), pain in the TMJ while chewing (60.3%), and muscle tenderness (60.3%). Shooting pain in the face or cheeks was the symptom least likely to be reported (25.6%).

Although only 16.8% of subjects rated their pain as severe or very severe on the category rating scale, 30.4% gave it a severity score of 7 to 10 on the numerical rating scale (Table 2). Pain was experienced by 50.0% on a daily basis, and for 35.3%, pain episodes lasted for 9 or more hours (Table 2). Those with the most symptoms, the most frequent pain, and pain episodes of the longest duration had the highest numerical pain ratings ( $P < .0001$  for all). The only difference to

**Table 2** Characteristics of Pain (% Distributions)

Severity by category	
Mild to discomforting	61.9
Moderately severe	21.2
Severe to very severe	16.8
Severity by pain scale	
0-3	25.2
4-6	44.3
7-10	30.4
Frequency of facial pain	
Daily	50.0
Two to four times a week	26.8
Once a week or less	23.2
Duration of facial pain	
One hour or less	35.3
Two to 8 hours	29.4
Nine to 12 hours or more	35.3

emerge with respect to sex or age was that males were more likely than females to report infrequent pain. About two fifths of males (39.1%) and about one fifth of females (19.1%) experienced pain once a week or less.

### Pain-Related Disability and Quality of Life

When asked to describe themselves during a facial pain episode, 50.5% indicated that they could ignore the pain or, if it could not be ignored, that it did not interfere with daily activities. Another 27.0% found that the pain interfered with their ability to concentrate only. The remainder, 22.5%, indicated that their pain was more debilitating; during a pain episode they could only do basic things like taking care of themselves, or they needed to resort to complete rest or bed rest.

The  $\alpha$  coefficient for the 30-item OHIP used in the study was .97. The coefficients for the six subscales were as follows: .81, functional limitation; .85, psychologic discomfort; .84, physical disability; .90, psychologic disability; .90, social disability; and .92, handicap.

Using "very often" and "fairly often" as the somewhat stringent cutoff point for the responses identifies those patients whose lives are compromised on a constant or frequent basis. The data indicate that psychologic discomfort (67.8%) and psychologic disability (61.2%) were the most commonly reported, followed by physical disability (55.4%) and functional limitations (46.3%). Social disability (38.8%) and handicap (38.0%) were the least likely to be reported but were still experienced by almost two fifths of subjects.

Table 3 shows the distribution of responses to the 30 OHIP items, with the initial five response options reduced to three. Using the response options "very often" and "fairly often" as an indicator, the problems most frequently reported by these patients were being worried about the pain, feeling tense, being upset and finding it difficult to relax. Approximately half experienced these problems. Two fifths found it difficult to chew, one third felt depressed, and almost one third reported disturbed sleep. A quarter were unable to work to their full capacity, nearly one third found life overall to be less satisfying, and almost one tenth said they had been totally unable to function. If the response option "occasionally" is considered as well, between 24% and 85% of subjects experienced these problems.

To appreciate the extent to which the quality of life of these patients was compromised, their responses to selected OHIP items were compared

with those of a random sample of community-dwelling Canadians aged 50 years and older ( $n = 699$ ) who took part in an oral health survey.<sup>19</sup> Although this group was predominantly pain free, they had high rates of conditions such as tooth loss and xerostomia, which can also have a substantial impact on daily living.<sup>20,21</sup> Nevertheless, the difference between these two groups was striking (Table 4). Only 1.2% of the older adults reported that their sleep was disturbed on a frequent basis because of oral conditions, compared with 29.7% of the pain patients. Similarly, feeling depressed because of oral health problems was reported by 4.1% of the former and 36.4% of the latter.

### Pain and the Quality of Life

To investigate the associations between pain and the quality of life, an OHIP score was calculated for each subject by counting the number of items to which they responded "very often" or "fairly often." The overall mean for this scale was 8.1 (SD = 7.9). As anticipated, mean OHIP scores were higher among those with more symptoms ( $P < .0001$ ), those reporting severe or very severe pain ( $P < .0001$ ), those with daily pain ( $P < .01$ ), and those reporting pain episodes of 9 hours or longer ( $P < .01$ ) (Table 5). Scores of some subgroups of these pain patients were very high; the mean score of those with severe pain was 18.8 (SD = 6.5).

Differences in mean OHIP scores were also examined with respect to reports of the presence of each of the symptoms listed in Table 1. Significantly higher scores were observed among those with each of seven of the 10 symptoms ( $P < .05$  to  $P < .001$ ). There were no associations between OHIP scores and pain when opening the mouth wide, pain in the TMJ with chewing, and clicking or grating noise in the TMJ. For example, the mean OHIP score of those reporting pain in and around the eyes was 13.3 (SD = 8.7) compared to a mean of 5.7 (SD = 6.1) for those without this symptom ( $t$  test,  $P < .001$ ). The mean score was 8.1 (SD = 8.2) for those with joint sounds, and 8.2 (SD = 7.3) for those without ( $t$  test, not statistically significant).

### Variations According to Diagnosis

The diagnosis reached at the initial visit was available for 56 patients. There were no statistically significant differences between patients for whom a diagnosis was available and those for whom a diagnosis was not available, according to age, sex, type and number of pain symptoms, severity, fre-

Table 3 How Pain Affects Daily Living: Responses to the Question, "During the last month, how often have you had the following problems because of pain?"

	Very/ fairly often (%)	Occasion- ally (%)	Hardly ever/ never (%)
Functional limitation			
Difficulty chewing any foods	43.2	29.7	27.1
Trouble pronouncing any words	12.1	17.2	70.7
Longer to complete a meal	25.0	36.2	38.8
Psychologic discomfort			
Been worried by the pain	54.4	30.7	14.9
Been self-conscious	34.8	18.8	46.4
Been miserable	42.7	30.8	26.5
Felt tense	51.3	27.4	21.2
Physical disability			
Speech has been unclear	13.6	19.5	66.9
People misunderstood some of your words	11.1	15.4	73.5
Unable to brush teeth properly	20.0	19.1	60.9
Had to avoid eating some foods	36.8	32.5	30.8
Had difficulty doing chores	20.7	19.0	60.3
Had to interrupt meals	14.7	27.6	57.8
Uncomfortable to eat any foods	42.0	31.9	26.1
Psychologic disability			
Your sleep has been disturbed	29.7	25.4	44.9
Been upset	47.9	29.9	22.2
Found it difficult to relax	44.1	32.2	23.7
Felt depressed	36.4	24.6	39.0
Your concentration has been affected	37.4	28.7	33.9
Been embarrassed	15.8	13.2	71.1
Social disability			
Avoided going out	19.0	22.4	58.6
Been less tolerant of spouse or family	25.0	25.9	49.1
Had trouble getting on with other people	16.4	18.1	65.5
Been irritable with people	19.0	31.9	49.1
Avoided eating with other people	12.9	13.8	73.3
Avoided smiling	21.2	19.6	59.3
Handicap			
Unable to enjoy other peoples' company	20.5	25.6	53.8
Felt that life in general was less satisfying	29.7	23.7	46.6
Been totally unable to function	8.5	16.1	75.4
Unable to work to full capacity	26.1	20.9	53.0

Table 4 Percent of Pain Unit Patients and Older Adult Subjects (50 Years and Older) Responding "Very Often" or "Fairly Often" to Selected OHIP Items\*

	Pain unit patients (n = 121)	Older adults (n = 699)
Difficulty chewing any foods	43.2	10.5
Felt tense	51.3	4.8
Sleep has been disturbed	29.7	1.2
Felt depressed	36.4	4.1
Been less tolerant of spouse or family	25.0	0.7
Felt that life was less satisfying	29.7	3.7
Unable to work to full capacity	26.1	0.7

\*All differences statistically significant, chi square test,  $P < .0001$ .

quency and duration of the pain, and the impact of pain on daily life.

To furnish enough subjects for analysis, two groups were formed: one consisting of TMD patients, which included those with joint and/or muscle involvement; and one consisting of neurologically based or other diagnoses. The latter group was more likely to be male than the former (38.7% versus 3.5%;  $P < .05$ ) and more likely to be older than 50 years (41.7% versus 13.3%;  $P < .05$ ). A higher proportion reported that their pain was severe (17.4% versus 3.3%;  $P < .01$ ) and that their pain episodes lasted 9 hours or more (52.4% versus 16.7%;  $P < .05$ ).

The OHIP scores of these diagnostic subgroups

did not differ (7.2, SD = 8.5 versus 9.5, SD = 6.9; *t* test, not statistically significant). However, Table 6 suggests that there were differences in the way in which these conditions compromised the quality of life. Although these differences did not always reach statistical significance, a higher proportion of TMJ/myofascial pain patients reported problems in the areas of functional limitation and physical disability, while a higher proportion of the neurologically based and mixed diagnostic group reported problems of a psychologic and social nature. This may reflect the pattern and characteristics of pain symptoms experienced by each group.

## Discussion

The subjects in this study were predominantly female, reflecting the general gender distribution of patients who seek treatment at specialist facial pain clinics.<sup>22</sup> Recent studies using random samples of the general population have found that females tend to report symptoms of TMD more frequently than do males, but the gender ratio is lower, ranging from 1.25:1<sup>2</sup> to 2:1.<sup>23</sup> In addition, the subjects with neurologically based diagnoses were older than those with musculoskeletal conditions, a finding reported by others.<sup>24,25</sup> In this respect, the subjects in the present study do not appear to be very different from other clinical facial pain populations.

However, because the study used a case series design, caution should be exercised in generalizing our findings beyond the subjects we studied. It should also be remembered that the subjects were patients referred to a tertiary care treatment facility and may represent the more severe or intractable cases of facial pain. In addition, response bias may mean that those who were the most compromised in terms of quality of life were more likely to agree to take part. This may explain the high rate of disability observed in this group of patients with facial pain.

Nevertheless, the results of this study both confirm and extend the findings of earlier studies<sup>3,13,14</sup> in showing that facial pain appears to have a substantial impact on functional and psychosocial well being. These earlier studies<sup>3,13,14</sup> used generic health status measures or rather limited scales and indexes to document impacts on daily life, which may not have been as sensitive as the comprehensive measure used in the present study. Moreover, because the Oral Health Impact Profile is organized into subscales, it was possible to assess the relative effects of facial pain conditions on concep-

**Table 5** Mean (and SD) OHIP Scores by Pain Symptoms

	OHIP score	<i>P</i>
Number of symptoms		
3 or fewer	4.5 (6.1)	
4 to 6	5.7 (5.8)	
7 to 10	13.4 (8.3)	< .0001
Severity of pain		
Mild/discomforting	5.2 (6.1)	
Moderately severe	8.9 (5.4)	
Severe/very severe	18.0 (7.0)	< .0001
Frequency of pain		
Daily	9.9 (7.6)	
Two to four times per week	9.3 (9.2)	
Once a week or less	3.7 (4.7)	< .01
Duration of pain		
One hour or less	4.4 (6.0)	
Two to 8 hours	7.4 (6.0)	
Nine to 12 hours or more	13.9 (8.7)	< .001

**Table 6** Percent With One or More OHIP Responses (Very Often/Fairly Often) by Subscale and Diagnosis

Subscales	TMD/ myofascial	Other	<i>P</i> *
Functional limitation	54.8	33.3	NS
Psychologic discomfort	58.1	79.2	NS
Physical disability	61.3	54.2	NS
Psychologic disability	51.6	75.0	NS
Social disability	29.0	55.0	< .05
Handicap	25.8	58.3	< .05

\*NS = not significant.

tually distinct dimensions of health. The main impact seemed to be in the areas of psychologic discomfort and disability, closely followed by physical disability and functional limitation. Although fewer subjects reported problems in the areas of social disability and handicap, two fifths had problems of this kind. Difficulty in social relations, withdrawal and problems with work were prominent.

A further benefit of using the OHIP was that data from another population was available against which the experience of these pain patients could be compared. The population we used was a group of older adults, who would be expected to have higher OHIP scores than strictly normative populations. Nevertheless, dramatic differences emerged between the two groups. The percentage of pain patients reporting negative impacts on daily life was substantially higher than with this comparison population,

even though the latter had high rates of oral disorders. This gives some indication of the significant burden imposed by facial pain disorders on the individual and the community at large.

As expected, based on previous findings,<sup>13</sup> the impact on the quality of life varied directly with the severity, frequency, and duration of pain episodes in this group of patients. Alpha coefficients for the scale overall and its subscales were also high. These findings tend to support the reliability and validity of the shortened OHIP as a measure of the health outcomes of facial pain, and it means that it may prove useful in the clinical evaluation of patients and clinical trials of various kinds of interventions. In this regard, it facilitates a multidisciplinary biopsychosocial approach to the problem posed by facial pain.

Also of interest was the finding that the impact on the quality of life varied for seven of the 10 symptoms on which data were collected, but not for the remaining three. These three referred to pain on function and joint sounds, suggesting that the functional manifestations of TMD and other facial pain conditions are largely tolerated by patients, but the pain symptoms are not. This parallels the findings of a study of the outcomes of TMJ arthroscopic surgery carried out in the same craniofacial pain unit.<sup>26</sup> Six months after surgery, there were no changes in maximal opening or joint sounds, but significant reductions in joint pain, headache, and jaw pain were found. There was also a significant reduction in terms of impact on the quality of life. These results are also consistent with the findings of Dworkin and Massoth<sup>11</sup> concerning the relationship between physical and psychosocial factors in TMD.

The OHIP also seemed to differentiate between diagnostic subgroups of patients with facial pain. This also confirms the previous work of Bush and Harkins<sup>13</sup> and Dao et al.<sup>14</sup> In the former, patients with myogenous complaints had higher disability scores than did those with discal disorders. However, our data on this issue need to be treated with caution. First, diagnoses were available for only half of the subjects, so the two diagnostic groupings were not large. Second, although the groups were broadly divided into musculoskeletal and neurologically based diagnoses, they both consisted of a mix of diagnoses that may have created or obscured differences. Further research in this area is warranted.

Further research is also needed to document the course of facial pain in terms of its impact on the quality of life. In the only longitudinal study to address this issue, Reisine and Weber<sup>3</sup> found improvements in both pain and quality of life follow-

ing treatment. However, clinical indicators did not improve over time. This raises the possibility that the improvement may be primarily the result of placebo effects or other psychosocial mechanisms, as recently reported in a clinical trial of occlusal planes.<sup>27</sup> It is clear that a greater understanding of psychosocial processes and psychosocial outcomes in facial pain is needed because these have a role to play in maximizing patient well being.<sup>11</sup>

Finally, it has been suggested that clinicians dealing with chronic conditions need to appreciate the burden imposed on patients by the condition itself, and by the treatments intended to relieve it, to adapt their treatment and advice to patients' everyday realities. Given that the impact of disease and treatment on an individual has tended to be neglected in contemporary clinical practice, instruments such as the OHIP may provide a means by which these dimensions of human experience may be addressed.<sup>28</sup>

## Conclusion

Although the present study has a number of design limitations that prevent generalization of the results, the data support the hypothesis that facial pain can have a substantial functional, social, and psychologic impact, negatively affecting the quality of life of some patients. Comparison with a non-pain patient population clearly indicated the burden imposed by facial pain and associated symptoms on the subjects studied. The data indicate that the Oral Health Impact Profile has good psychometric properties and may be a useful instrument for measuring the outcomes of facial pain conditions. Scores on this index were associated with the severity and characteristics of pain. There was also an indication that the nature of the impact on the quality of life varied across diagnostic subgroups, even though this conclusion needs to be treated with caution because of small groups and mixed diagnostic classifications.

## References

1. Dworkin S, Huggins K, LeResche L. Epidemiology of signs and symptoms in temporomandibular disorders: Clinical signs in cases and controls. *J Am Dent Assoc* 1990;120:273-281.
2. Locker D, Slade G. Prevalence of symptoms associated with temporomandibular disorders in a Canadian population. *Community Dent Oral Epidemiol* 1988;16:310-313.
3. Reisine ST, Weber J. The effects of temporomandibular joint disorders on patients' quality of life. *Community Dent Health* 1989;6:257-270.

4. Greene C, Olson R, Laskin D. Psychological factors in the etiology, progression and treatment of MPD syndrome. *J Am Dent Assoc* 1982;105:443-448.
5. Lipton J. Biobehavioral aspects of oral diseases. In: Cohen L, Gift H (eds). *Disease Prevention and Oral Health Promotion*. Copenhagen: Munksgaard, 1995.
6. Dworkin SF. Perspectives on the interaction of biological, psychological and social factors in TMD. *J Am Dent Assoc* 1994;125:856-863.
7. Locker D. Health outcomes of oral disorders. *Int J Epidemiol* 1995;24(suppl):S85-S89.
8. Solberg W, Woo M, Houston J. Prevalence of mandibular dysfunction in young adults. *J Am Dent Assoc* 1982;98:25-34.
9. Ageberg G, Inkerpool I. Craniomandibular disorders in an urban Swedish population. *J Craniomandib Disord Facial Oral Pain* 1990;4:154-164.
10. Locker D, Grushka M. The impact of oral and facial pain. *J Dent Res* 1987;66:1414-1417.
11. Dworkin SF, Massoth DM. Temporomandibular disorders and chronic pain: Disease or illness? *J Prosthet Dent* 1994;72:29-38.
12. Bergner M, Bobbitt R, Carter W, Gilson B. The Sickness Impact Profile: Development and final revision of a health status model. *Med Care* 1981;19:786-805.
13. Bush FM, Harkins SW. Pain-related limitation in daily living in patients with chronic orofacial pain: Psychometric properties of a disability index. *J Orofacial Pain* 1995;9:57-63.
14. Dao T, Lund JP, Lavigne GJ. Comparison of pain and quality of life in bruxers and patients with myofascial pain of the masticatory muscles. *J Orofacial Pain* 1994;8:350-355.
15. Von Korff M, Dworkin S, LeResche L, Kruger A. An epidemiologic comparison of pain complaints. *Pain* 1988;32:173-183.
16. Von Korff M, Ormel J, Keefe F, Dworkin S. Grading the severity of chronic pain. *Pain* 1992;50:133-149.
17. Slade GD, Spencer AJ. Development and evaluation of the Oral Health Impact Profile. *Community Dent Health* 1994;11:3-11.
18. Locker D. Measuring oral health: A conceptual framework. *Community Dent Health* 1987;5:3-18.
19. Locker D, Slade G. Oral health and the quality of life among older adults: The oral health impact profile. *Can Dent Assoc J* 1993;59:830-838.
20. Locker D. The burden of oral disorders in a population of older adults. *Community Dent Health* 1992;9:109-124.
21. Locker D. Subjective reports of oral dryness in older adults. *Community Dent Oral Epidemiol* 1993;21:165-168.
22. Foreman P, Harold P, Hay D. An evaluation of the diagnosis, treatment and outcome of patients with chronic orofacial pain. *N Z Dent J* 1994;90:44-48.
23. Lipton JA, Ship JA, Larach-Robinson D. Estimated prevalence and distribution of reported orofacial pain in the United States. *J Am Dent Assoc* 1993;124:115-121.
24. Hapak L, Gordon A, Locker D, Shandling M, Mock D, Tenenbaum H. Differentiation between musculoligamentous, dentoalveolar, and neurologically based craniofacial pain with a diagnostic questionnaire. *J Orofacial Pain* 1994;8:357-367.
25. Gerke DC, Richards LC, Goss AN. A multivariate study of patients with temporomandibular joint disorder, atypical facial pain, and dental pain. *J Prosthet Dent* 1992;68:528-532.
26. Freeman B, Psutka D, Baker G, Hunter J, Mock D, Tenenbaum H. An assessment of the outcome of TMJ arthroscopic surgery: A comparison of objective and subjective outcome measurement [abstract]. *J Dent Res* 1996;75 (special issue):27.
27. Dao T, Lavigne G, Charbonneau A, Feine J, Lund J. The efficacy of oral splints in the treatment of myofascial pain of the jaw muscles: A controlled clinical trial. *Pain* 1994;56:85-94.
28. Gerhardt U. Qualitative research on chronic illness: The issue and the story. *Soc Sci Med* 1990;30:1149-1159.

## Resumen

El Dolor y la Calidad de Vida de los Pacientes Remitidos a una Unidad de Dolor Craneofacial

Aunque hay razones para creer que los desórdenes temporomandibulares y otras condiciones de dolor facial tendrían un gran impacto en la calidad de vida de los pacientes, sólo un número reducido de estudios ha intentado referirse a este tópico de una manera sistemática. En este estudio se evaluó la información sobre el dolor y sus consecuencias en 121 pacientes que visitaban por primera vez la unidad investigativa de dolor craneofacial. El punto hasta el cual el dolor facial de origen musculoesquelético y neurológico comprometió la calidad de vida fue medido por medio del Perfil del Impacto de la Salud Oral, un índice desarrollado recientemente sobre los resultados funcionales y psicosociales de las condiciones orales. Los datos indicaron que el dolor facial tenía un impacto considerable sobre la vida diaria y sus efectos más comunes eran de tipo psicológico. Al compararlo con la población que no sufría de dolor, la extensión de este impacto fue impresionante. Los problemas funcionales aumentaron cuatro veces más, como por ejemplo la dificultad para masticar los alimentos. La depresión aumentó nueve veces más. Como se había anticipado, los valores del Perfil del Impacto de la Salud Oral estaban asociados con las características del dolor y los subgrupos de diagnóstico.

## Zusammenfassung

Schmerzen und Lebensqualität bei Gesichtsschmerzpatienten

Trotzdem es Gründe gibt, zu glauben, dass Myoarthropathien und andere Gesichtsschmerzen einen wichtigen Einfluss auf die Lebensqualität der Patienten haben können, haben bis jetzt noch wenige Studien versucht, dies systematisch zu beweisen. In dieser Studie wurden Angaben über Schmerzen und deren Folgen ausgewertet. Es wurden 121 Patienten, die zum ersten Mal eine Gesichtsschmerz-Forschungseinheit besuchten, untersucht. Das Ausmass, in welchem muskuloskeletale und neuralgische Schmerzen die Lebensqualität beeinflussen, wurde durch das Oral Health Impact Profile (OHIP) gemessen, welches ein vor kurzem entwickelter Index für die funktionellen und psychosozialen Folgen des oralen Zustand ist. Die Angaben zeigten, dass Gesichtsschmerzen einen wesentlichen Einfluss auf das tägliche Leben haben und dass die häufigsten Folgen psychologische Art waren. Wenn man diese Patienten mit einer Kontrollgruppe vergleicht ist das Ausmass dieser Folgen auffallend. Die Patienten haben viermal mehr funktionelle Probleme und neunmal mehr Depressionen. Ausserdem wurden die Ergebnisse des OHIP den unterschiedlichen Schmerzzeichen-schaften und den diagnostischen Untergruppen zugeordnet.