Lack of disability in patients with chronic orofacial pain

A retrospective study

Glenn Hægerstam and Madeleine Allerbring

Departments of Endodontics and Oral Diagnostics, Karolinska Institute, School of Dentistry, Huddinge University Hospital, Huddinge, Sweden

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Although patients with chronic orofacial pain are frequently disabled, the disability is not necessarily due to the orofacial pain: various other factors may contribute. This retrospective study investigated the possible relationship between reports of pain, fatigue, disease conviction (DC), and denial of psychologic factors as explanation of the suffering (P-S) and limitations in occupational, domestic, physical, social, and sexual activities. The subjects comprised 30 patients referred to the Facial Pain Diagnostic Group at the Karolinska Institute, School of Dentistry, Huddinge, Sweden. None of the disability measures were significantly ($p \leq 0.01$) correlated with the facial pain reports. Fatigue was not correlated with degree of reported pain. DC was significantly ($p \leq 0.01$) correlated only with the minimum pain intensity. P-S was negatively correlated ($p \leq 0.01$) with maximum pain intensity and pain distribution (number of zones) outside the face. In 50% of the patients chronic orofacial pain was the formal reason for their occupational disability. However, such disability was related only to pain distribution (number of zones) outside the face. Social activity was negatively correlated ($p \leq 0.01$) with fatigue and positively correlated ($p \leq 0.01$) with P-S. It is suggested that the findings could be satisfactorily explained by a symptom perception hypothesis.
☐ *Facial pain; fatigue; intractable pain; occupational disability*

Glenn Hægerstam, M.D., Medical Department, Astra Läkemedal AB, S-151 85 Södertälje, Sweden

Chronic pain not only causes great personal suffering but has also tremendous socioeconomic consequences. Disability of the patients with chronic pain may be a direct consequence of the pain or indirectly related to the pain.

Disability is defined differently and sometimes used interchangeably with the term impairment (1). Impairment is a medical term, defined as 'a loss or functional limitation of an organ or organ system of the body or mind, based upon documented pathological findings' (2). In patients with chronic pain there may be impairment due to documented organic abnormalities or as a consequence of the experienced chronic pain (3). Other investigators describe the pain per se as a sort of impairment (4). The patients with chronic orofacial pain investigated at The Facial Pain Diagnostic Group at the Karolinska Institute, School of Dentistry at Huddinge University Hospital, Stockholm, have no documented organic pathologic findings explaining the pain (5) and do not by definition have any physical impairment other than the experienced pain. Disability, which is used mainly as a legal term, is 'judged administratively, based on the patient's actual or presumed ability to engage in gainful activity' (6).

Millard et al. (7) discussed three different hypotheses to explain the relationship between disability and pain, health complaints, and psychologic variables. A psychosocial hypothesis proposing that pain-related disability is a primary consequence of psychologic factors was rejected. The second hypothesis assumes that pain leads to disability and that distress is the product of chronic disability. As an antithesis to this so-called disability hypothesis, they presented the symptom perception hypothesis, which emphasizes deficits in information processing. This model proposes that physical symptoms are differently reported because of cognitive differences. Such differences are normally of marginal importance unless a traumatic event or illness occurs.

The aim of this study was to investigate how pain and some other symptoms correlate with disability in a cohort of patients with chronic orofacial pain and to determine whether the findings can be explained by the disability hypothesis or the symptom perception hypothesis.

Materials and methods

The subjects of this retrospective study comprised 30 patients with orofacial pain referred to The Facial Pain Diagnostic Group at the Karolinska Institute, School of Dentistry at Huddinge University Hospital, Stockholm. All the patients had undergone thorough investigation and any necessary treatment by senior dental clinicians at the different departments at the School of Dentistry. When the pain persisted, the patients were evaluated by the Facial Pain Diagnostic Group. The subjects were selected by studying the records of all 61 patients referred to the group between 1981 to 1987. The clinical characteristics of this patient sample have been de-

Table 1. Demographic characteristics of 30 patients with chronic orofacial pain

Gender, M/F	Mean years of age ± SD (range)	Mean years of pain ± SD (range)	Married	Divorced	Single	Widowed	No. with children
3/27	55 ± 12 (27–72)	5.5 ± 4.6 (1–20)	11	7	8	4	22

scribed previously (8). The basis of inclusion was that adequate information necessary for evaluation of disability was available in the patients' records. The demographic variables are presented in Table 1.

The patients had completed a set of questionnaires on various aspects of their pain (5) but also on fatigue. The pain intensity was assessed by means of a questionnaire containing nine sensory verbal descriptors. The patients were asked to describe the pain when it was minimal (minimum pain intensity) and maximal (maximum pain intensity). The patients marked on outlines of a face their facial pain distribution and on full-body outlines the pain distribution in the rest of the body. The face was divided in 6 areas and the rest of the body in 45 anatomic areas (5). The ability to cope with domestic activities is measured as the reported percentage of the housekeeping that the patient is able to take care of. A translated Swedish version of the Illness Behaviour Questionnaire (8) was also completed. From this questionnaire the responses necessary for evaluation of disease conviction (DC) and denial of psychologic factors involved in the illness behavior (P-S) were selected. DC and P-S (psychologic versus somatic factors) were recorded for each subject. Information on occupational, domestic, physical, social, and sexual activity was collected from a questionnaire.

Non-parametric methods (Spearman rank correlation) were applied for statistical analysis of the correlation between disability measures, different pain measures, DC, and P-S. When pain measures, DC, and P-S were compared with yes or no answers, the Spearman rank correlation can be seen as a Wilcoxon test of the comparison between the yes group and the no group.

Results

Pain related to fatigue, DC, and P-S

It was decided to study whether there were any correlations between different pain measures and fatigue, DC, and P-S, respectively, in this patient population. Pain intensity ranging from 0 to 95 (scale, 0–100) was reported by 28 of 30 patients. Pain was reported in several zones, ranging from 0 to 43. The pain distribution in the face ranged from 0 to 6 zones. The duration of pain varied from 1 year up to 20 years. Fatigue was a prominent complaint in 30% (nine) of the patients. DC ranging from 0 to 6 and P-S ranking between 0 and 2 were reported in all 30 subjects.

A rank correlation analysis of pain, fatigue, DC, and P-S was performed. The upper end of the pain intensity window (maximum pain intensity) and the body distribution correlate ($p \leq 0.01$) negatively with P-S. The negative correlation indicates that the higher the values of maximal pain intensity and the number of pain areas on the body, the lower the values of P-S. A low value on P-S means that the patient denies psychologic factors in favor of somatic factors as explanation for the suffering. The lower end of the pain intensity window (minimum pain intensity) was positively correlated ($p \leq 0.01$) with DC. No correlation was found between any of the recorded pain variables and the presence of fatigue.

The relation between different activity measures

The patients were asked about their ability to cope with domestic activities and to participate in social and sexual activities and in physical exercise. The occupational role of disability was investigated. Nine of 30 (30%) were employed full time and six (20%) part time. The formal reason for being employed only part time was the orofacial pain. Of the 15 patients not working, 6 (20%) were old-age pensioners (≥65 years). Pain was the formal reason for being retired for 9 (30%) of the patients. Thus, 50% of these patients were partly or totally occupationally disabled owing to reported chronic orofacial pain.

As many as 17 (59%) of 29 patients reported participation in some sort of physical exercise. One patient did not respond to the question. Eleven patients of the 29 (38%) who responded to the question on social activity reported that they were restricted in taking part in social life because of pain. Of the 24 subjects who responded to the questions on their sexual activity, 9 (38%) reported some degree of disability because of pain. The six who did not respond to this question were single, widowed, or divorced.

The rank correlation between different activity measures was calculated. None of the activity measures correlate with each other. In fact, there was no correlation between employment status and any of the other activity measures.

The relation between different activity measures and pain, fatigue, DC, and P-S

Occupational disability was correlated ($p \leq 0.01$) only with the number of painful zones on the body except for those on the face. Thus, the higher number of painful body zones, the greater the occupational disability. The distribution of facial pain did not correlate with any disability. Ability to manage domestically was not correlated with any of the pain variables, DC, or P-S. Social activities, on the other hand, were negatively correlated ($p \leq 0.01$) with fatigue and positively correlated ($p \leq 0.01$) with P-S. These findings suggest that those who report fatigue tend to be less socially active. On the other hand, those who accept the influence of psychologic factors as an explanation of their suffering report more social activities. Physical exercise was not correlated with reports of fatigue or any report of pain. Nor was physical activity correlated with disease conviction (DC) or denials of psychologic factors (P-S). Sexual activity seems not to be correlated with any of the pain variables, with fatigue, with DC, or with P-S.

Discussion

One of the findings in this study was that disability was not correlated with any measured facial pain variables. There was, however, a significant correlation between pain distribution outside the face and occupational disability. A weak correlation between pain and disability has been reported in the literature (9, 10), which has resulted in the suggestion that there is an indirect relationship between pain and disability. The lack of correlation between the disability measures further suggests that the forms of disability are related to different factors. Disability seems to be a multifactorial problem. Factors such as motivation and social and economic factors contribute to the final type and degree of disability (11).

The occupational disability is in this study related (negatively) only to the number of painful zones on the body outside the face. The patients do not seem to be aware of the relationship between occupational disability and pain outside the face. As a result of the patient's attitude they seem to be convinced of a pathologic process in the teeth as the reason for their disability. The lack of correlation between pain intensity and occupational disability seen in this study is in accordance with findings from studies on low-back pain (12–14).

Whereas impairment is analogous with disease, disability has been linked to the concept of illness (15). Therefore, the disability seems to be related to the concept of illness behavior (16). However, in this study except for the correlation between social activity and P-S, no correlation was found between disability and disease conviction (DC) or acceptance of psychologic factors as an explanation of their suffering (P-S). If there is any relationship between disability and illness behavior, this is not detected by the DC and P-S factors of the Illness Behaviour Questionnaire.

The restriction in social activities is related to the absence of abnormal fatigue and also related to the patients' acceptance of psychologic factors as an explanation of their suffering (P-S). It is important to observe that the fatigue is not correlated with any of the pain measures and is therefore due to factors other than the pain. No other factors explaining the disability measures were detected in this study.

The disability hypothesis assumes that pain causes disability and that distress is a consequence of chronic disability (7). As no correlation has been found between any of the disability measures and any of the facial pain measures, this hypothesis is not in agreement with the findings in this study.

The symptom perception hypothesis (7) postulates that individuals vary in their responses to symptoms and in their perceptions of symptoms. Mental factors are expected to be important components in the mechanism behind an abnormal response to symptoms. The fact that some patients with chronic pain and high levels of distress do not develop formal depression or other forms of psychopathology can be explained by the hypothesis. The fact that the different pain reports in this study do not correlate with each other is in accordance with the hypothesis. Furthermore, the observed absence of correlation between pain reports and the disability measures can be satisfactorily explained by the symptom perception hypothesis.

Although interpretation of negative results is difficult, the present data seem to be in harmony with the symptom perception hypothesis.

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