Improvement and care seeking for temporomandibular-pain complaints: The complexity of chronic pain
Rollman, A.

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“Temporomandibular disorders” (TMD) is a collective term used to describe a group of musculoskeletal conditions occurring in the temporomandibular region. TMD shares features with other chronic musculoskeletal syndromes (such as low back pain and neck pain) including pain, limited range of motion and hindrance in function. About half of the people with TMD-pain complaints seeks care for their complaints. Common treatments that are used are: counseling, physiotherapy and oral appliances, from which most patients benefit. As with other musculoskeletal pain disorders, most patients with an acute TMD pain show fast recovery, regardless of treatment. Especially in those patients with long lasting complaints, treatment success becomes difficult to achieve. In patients who develop persistent complaints, pain can have far-reaching consequences. That is, chronic pain may not only impair physical function, but may also result in mental and emotional difficulties and a diminished quality of life. To improve patient care, particularly for those with long lasting pain complaints, much can be gained by further understanding of the factors that influence the development of chronic pain. Therefore, the aim of this thesis was to improve the understanding of the role of biopsychosocial factors in the development of TMD-pain complaints and care seeking behavior.

For this purpose, a questionnaire survey was conducted among a sample of participants with TMD pain. The questionnaire aimed to cover a wide range of potentially important biopsychosocial factors. Many instruments were available to be implemented in the questionnaire: the so-called “Characteristic Pain Intensity” (CPI) was used to measure pain intensity, the “Symptom Check List 90” (SCL-90) was used to measure depression and somatization, and coping strategies like catastrophizing were measured by the “Pain Coping and Cognition List” (PCCL). Two instruments, that were considered important for this purpose, were not readily available and needed to be developed. These were the so-called “Patient-Specific Approach” (PSA) measure, and a measure for social support in pain patients.

In Chapter 2 the development of the “Patient-Specific Approach” (PSA) is described. The PSA is based upon an instrument that is widely used in treatment evaluation of patients with other musculoskeletal complaints, like low back pain or neck pain. It rates the amount of hindrance that patients perceive while performing the activity that is most important to them in their daily life, which is hindered because of their jaw complaints, on a Visual Analogue Scale (VAS). First, the activities chosen on the PSA in a sample of TMD patients were evaluated. Second, the clinometric properties of the VAS scores of the PSA, in terms of reproducibility and responsiveness were determined. At treatment start, TMD patients from the department of Oral Kinesiology of ACTA were asked to report the most important activity which is impaired due to their TMD complaints. The amount of hindrance during this activity was rated on a Visual Analogue Scale (VAS). During two follow-up measurements, patients rated the VAS and appraised their overall complaints in terms of ‘much worsened’, ‘slightly worsened’, ‘remained stable’, ‘slightly improved’, or ‘much improved’. Of the 132 patients who fulfilled baseline measurements, 13% reported an activity that is not included in existing TMD-disability questionnaires. The reproducibility of the VAS scores of the 78 patients who
reported that their complaints had ‘remained stable’ at second measurement, was good (ICC=0.73). At third measurement, the number of patients who had improved and those who did not was about equal. The responsiveness of the PSA was high (AUC=0.91), and the cutoff score for important improvement, where sensitivity (0.85) and specificity (0.84) were as much as possible the same, was 58%: a decrease in VAS score of 58% can be considered an important improvement. Since the activity that is most important to the TMD patient is not always included in existing measurements, and the VAS score of the PSA has good reproducibility and responsiveness, the PSA is a promising tool in TMD-treatment evaluation.

In Chapter 3, a new pain-relevant social support instrument, the "Social Support and Pain Questionnaire" (SPQ), was presented, together with an evaluation of its psychometric properties. Satisfaction with social support (pain-relevant social support) may influence behavior in chronic pain patients. In prior studies on measurement of social support, however, commonly instruments that measure social support in daily-life situations are used, rather than pain-specific instruments. A literature search was performed to establish different aspects of social support. For each of the six aspects found, one item was selected for inclusion in the new questionnaire. The draft version of the instrument was field-tested. Thereafter, the psychometric properties of the SPQ were assessed in 250 orofacial pain patients. These subjects were referred to the department of Oral Kinesiology of ACTA or to one of the other six participating Centres for Dental Care in The Netherlands. Principal component analysis showed that the SPQ had a one-factor structure. The test-retest reliability of the SPQ (in a subsample of 54 patients) was fair to good. Convergent validity, as compared with a non-specific social support instrument, was good (N=140; R=0.54; p<0.001). The SPQ is a valid and reliable instrument, which offers the possibility to explore the patient's satisfaction with pain-related social support. With the SPQ, a useful tool to assess the influence of social support in various types of pain patients is provided.

The newly developed instruments (PSA and SPQ) were then implemented in a baseline questionnaire. This questionnaire was set out amongst subjects with TMD-pain complaints in seven TMD-clinics in The Netherlands, and in a non-clinical population sample. First, biopsychosocial characteristics of those who did seek care for their TMD-pain complaints (care seekers), were compared to those who did not (non-care seekers) (Chapter 4). Additionally, the group of care seekers was further studied with respect to the number of care practitioners they had attended for their TMD complaints. This enabled us to study whether the biopsychosocial profiles varied with increasing complexity of the care seeking behavior. To study which predictive variables were associated with the decision to seek care and with the number of care practitioners attended, multiple regression models were built. Two-hundred-and-three persons with TMD pain (in this chapter referred to as orofacial pain) participated in the study. Of these participants, 169 (140 females) had visited at least one healthcare practitioner (care seekers), while the other 34 persons (25 females) did not (non-care seekers). The decision to seek care was not only associated with pain intensity (p<0.05), but, in women, also
with fear of jaw movements (p<0.01): women with more fear of jaw movements were more likely to seek care. Possibly, the absence of the association between fear of movement and care seeking was due to the low number of male non-care seekers (N=9). Pain intensity and disability were not associated with the number of health care practitioners attended. Instead, the main predictors were catastrophizing (p=0.004) and the use of painkillers (p=0.008). It was concluded that pain intensity and fear of jaw movements play an important role in the decision to seek care for TMD-pain. The continuous search for help is associated with catastrophizing and the use of painkillers.

Moreover, in Chapter 5, to further investigate differences between care seekers and non-care seekers, semi-structured interviews were held with 16 subjects with TMD-pain complaints: 8 care seekers and 8 non-care seekers, matched for age, sex, pain intensity and fear of jaw movement were selected from the preceding study sample (Chapter 4). The interviews were audio-taped, transcribed verbatim and analyzed according to qualitative content analysis. From the analysis, seven themes differentiating care seekers from non-care seekers were identified: “catastrophizing”, “pain management”, “assertiveness”, “critical attitude towards healthcare”, “confidence in medical care”, “recognition” and “adequate referral”.

Finally, it was investigated whether biopsychosocial factors at baseline also influence the 6-month rehabilitation of TMD-pain (Chapter 6). Half-a-year after their recruitment, participants of the survey study who were recruited at a TMD-centre (Chapter 4), received a follow-up questionnaire. Most of these patients had received treatment within this time period. Based on this questionnaire, participants were classified as “improved” or “not improved”. Then, to study which predictive variables were associated with improvement, multiple regression models were built. From the 129 patients that responded to the baseline questionnaire, 100 patients also filled in the follow-up questionnaire (85% female, mean age (years) ±SD = 46.0 ±13.8). Fifty percent of these subjects had improved at the 6-month follow-up. Pain duration was the strongest (negative) predictor for 6-month improvement (p=0.009). Also the number of care providers visited before (p=0.017), and the degree of hindrance on function as measured with the PSA (p=0.045) were negative predictors for improvement. No evidence was found to support the role of psychological or social factors on the improvement in patients with a report of TMD pain.
Conclusion

Besides from the intensity of the pain complaint, care seekers are more alarmed by their complaints than non-care seekers. This is expressed in higher levels of fear of movement and more catastrophic thoughts in care seekers as compared to non-care seekers. Moreover, within the subsample of care seekers, also the continuous search for help (as expressed by the number of healthcare practitioners they had visited) is mainly related to the level of catastrophizing thoughts and use of pain medication, and not influenced by the pain intensity.

Besides pain duration, patients who have visited many healthcare practitioners and who show higher levels of hindrance in function (as measured with the Patient Specific Approach), have a higher risk of persisting pain complaints at 6-months follow-up.

Surprisingly, only few associations are found between biopsychosocial factors and care seeking or improvement.