

ILLNESS COGNITIONS IN PATIENTS WITH TEMPOROMANDIBULAR DISORDERS

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Abstract: Background: Temporomandibular disorders (TMD) is a term covering heterogeneous musculoskeletal disorders, including the temporomandibular joint and related structures. Pain is a common symptom in TMD. Chronic pain is a condition that affects the physical, psychological, cognitive and social domains of people who frequently have negative effects on quality of life. Illness cognitions is defined that patients who have a chronic illness have their own beliefs about their illness. In another saying, illness cognitions contain patient's perception and understanding of the disease and its treatment.

Material and Methods: This study was performed on 80 patients who applied to clinic with chronic TMD disorder. A written consent was obtained from the appropriate participants and the Illness Cognition Questionnaire (ICQ) forms were filled in by the patients under the guidance of the researchers. The statistical software SPSS (Statistical Package for Social Sciences, Version 20, Chicago IL, USA) was used.

Results: ICQ subscores of individuals with TMD: The mean score was 16.95 (SD = 4.05) for helplessness, 10.36 (SD = 3.14) for acceptance, and 15.55 (SD = 3.70) for perceived benefits. There was a statistically significant intra class correlation of 93.8% (0.915-0.957) among the Acceptance and 92.5% (0.896-0.948) among the Perceived benefits scale scores of the participants.

Conclusion: Psychological interventions that can create a positive perception against TMD and highlight the ability to overcome problem-oriented TMD, can prevent the disease from controlling the daily life of people with TMD in a positive way and can help to affect the health promotion process positively.

Keywords: Illness Cognition Questionnaire, Chronic Disease, Temporomandibular disorders.

INTRODUCTION

Temporomandibular disorders (TMD) is a term covering heterogeneous musculoskeletal disorders, including the temporomandibular joint and/or related structures. It is also accompanied by pain in the hard and soft tissues to which it is associated. Pain is common symptom in subtypes of TMD such as degenerative joint disease, primarily internal derangements and disorders associated with the temporomandibular joints (1).

The incidence of TMD symptoms in the population is between 6-12%. Approximately 80 percent of TMD patients present with signs and symptoms of joint disease, including disc replacement, arthralgia, osteoarthritis, and osteoarthritis (1). Poor understanding of the etiology or pathogenesis of TMD and deficiencies in the treatment approach lead to a process in which patients have to tolerate painful symptoms. This situation adversely affects the quality of life of patients (2).

Illness cognition is defined that patients who have a chronic illness have their own beliefs about their illness. In another saying, illness cognitions contain patient's perception and understanding of the disease and its treatment. A patient's beliefs affect their ability to cope with and adapt to the disease, and illness cognitions can be an important mediator between the situation and the patient's well-being (3,4). If patients perceive their illness as treatable and controllable, they experience less physical, emotional and social problems (5).

Chronic pain and fatigue is a condition that affects the physical, psychological, cognitive and social domains of people lives, and frequently have negative effects on quality of life (4). But it is often limited to fully explain its negative effects. Because there are many variables that can prevent or encourage adjustment, such as self-efficacy, coping strategies, and disease belief

(3, 5). Although there is a wide range of disease beliefs and cognitions related to correction of chronic symptoms. We focus on three general structures of helplessness, acceptance, and experienced benefits of disease. Some studies have found evidence for the beneficial effects of perceived control on symptoms (4, 5). In contrast, the lack of repetition of control over adverse events may lead to helplessness. Similarly, many studies have shown that lack of control is associated with adverse outcomes in chronic pain situations (2-5). There are studies showing that having control over symptoms may be associated with better compliance. Patients, who accepted pain, reported less depression, anxiety, and disability (3, 6).

Recently, the Illness Cognition Questionnaire (ICQ) has been developed as a general measure of disease beliefs. ICQ which was developed to determine individuals' cognitive cognition, is very advantageous for research because of its low cost, ease of application, validity and reliability (7). There have been studies using the ICQ questionnaire, but there are no studies on dental-related diseases. Psychological effect of TMD on individuals and cognitive evaluation of patients is quite an issue. In our study, a reliable and valid Turkish version was used (2). The research hypothesis of the study is that ICQ gives significant results in the assessment of the disease cognition of individuals with TMJ disorder and patients focus on the "Helplessness" category.

MATERIAL AND METHODS

Ethics approval was provided by Istanbul Ayd2n University Ethics Committee. This research adhered to the principles of the Declaration of Helsinki. This study was performed on 80 patients whose age range was 18-70 years. The age, gender, marital status, educational status and employment status of the patients were recorded on the form prepared previously.

Intraoral and extraoral jaw joint, gnathology, muscle and occlusion examinations of patients who were directly admitted to Istanbul Aydin University Faculty of Dentistry or were referred by other dentists due to jaw joint, temple, pain in the face area, restriction of movement, and clenching complaints were made.

In extraoral and intraoral gnathological examination included: bilaterally assessment of TMJ sounds, palpation of TMJ, temporal, masseter, lateral pterygoid, sternocleidomastoid and posterior cervical muscles during opening, closing, laterotrusion and protruding movements. For 5 seconds on palpation, when 0.5 or 1.0 kg pressure is applied by calibrating according to the examined area, it was determined whether there was pain (8). The findings were recorded in the prepared "TMJ Clinic Patient Exam Form" (Figure 1).

TMJ CLINIC PATIENT EXAM FORM	Patient No:
Facial symmetry: Symmetrical (....) Asymmetrical (....)	
Facial type (with soft tissue appearance)	
Class I (....) Class II (....) Class III (....) Normal (....) Short (....) Long (....)	
Pain (Indicate as right / left)	
TMJ lateral palpation : mild (...../.....) Medium (...../.....) Severe (...../.....)	
TMJ posterior palpation : mild (...../.....) Medium (...../.....) Severe (...../.....)	
TME loading: Lateral (...../.....) Posterior (...../.....) Vertical (...../.....)	
Swelling: mild (...../.....) Medium (...../.....) Severe (...../.....)	
Masseter muscle : mild (...../.....) Medium (...../.....) Severe (...../.....)	
Temporal muscle: mild (...../.....) Medium (...../.....) Severe (...../.....)	
Medial pterygoid muscle: mild (...../.....) Moderate (...../.....) Severe (...../.....)	
Lateral pterygoid muscle: mild (...../.....) Moderate (...../.....) Severe (...../.....)	
Joint sounds (Indicate as right / left)	
Opening: Early (...../.....) Medium (...../.....) Late (...../.....)	
Closing: Early (...../.....) Medium (...../.....) Late (...../.....)	
Can only be heard with a stethoscope (...../.....)	
It sounds without a stethoscope (...../.....)	
Can be heard palpating (...../.....)	
Clicking (...../.....) Crepitation (...../.....) Popping (...../.....)	
Multiple voice (...../.....) Severe dysfunction cannot be tested due to (...../.....)	
Jaw movements (mm)	
Max . painless interincisal opening:	
Max . painful (with voluntary effort) interincisal opening:	
Max . Interincisal opening with passive assistance (with physician manipulation) :	
In the passive Assistem termination feeling: Soft (....) Hard (....)	
Lateral excursion (mm): Right : Left :	
Protruziv :	

Figure 1. TMJ clinic patient exam form

Patients diagnosed with fibromyalgia, trigeminal neuralgia, burning mouth syndrome, atypical facial pain, migraine, atypical odontalgia, cervical and neuropathic pain, were excluded from the study group.

A written consent was obtained from the appropriate participants and the ICQ forms were filled in by the patients under the guidance of the researchers. ICQ is an 18-item scale that assesses individuals' feelings and attitudes towards chronic diseases: it consists of 3 separate sub-categories, each containing 6 questions: 1- "Acceptance reflects the perceived ability of the individual to perceive his / her negative ideas in a positive way. For example, 'I have learned to live with TMD'; 2- "Helplessness", focusing on the negative consequences of the disease and generalizing them to everyday life - for example, "My TMJ disorder restricts me to everything that is important to me"; and 3- 'Perceived benefits', to investigate the benefits that a person may experience as a result of TMJ disorder; for example, 'TMJ disturbance has taught me to enjoy the moment. The questions were answered with the Likert scale: "not at all-1" and "completely agree-4". Total increasing scale scores indicate that the helplessness and acceptance of the disease are kept to a greater extent by the participant. In addition to strong internal reliability, ICQ has a good structure and predictive validity under chronic conditions (1, 6).

The statistical software SPSS (Statistical Package for Social Sciences, Version 20, Chicago IL, USA) was used for calculations. All values presented as mean \pm standard deviation and mean (Maximum - Minimum) percent and frequencies. The results of normality tests (Shapiro Wilk) were used to decide which statistical methods to apply in the comparison of the study groups. The relationship between the two continuous variables was evaluated by the Pearson Correlation Coefficient and Spearman Correlation Coefficient when the parametric test did not meet the prerequisites. Test-retest reliability coefficients were evaluated by intra class correlation coefficient. P values < 0.05 were considered statistically significant.

RESULTS

The average age of the study group was 39.23 ± 13.74 years. 76% of the group was female patients and 24% was male patients. The ratio of female patients to male patients was 3.1 : 1. When evaluated according to the diagnoses, the difference between male and female patients was not statistically significant.

ICQ subscores of individuals with TMD: the mean score was 16.95 ± 4.05 (range min-max = 8-24) for helplessness, 10.36 ± 3.14 (range min-max = 6-18) for acceptance, and 15.55 ± 3.70 (range min-max = 8-24) for perceived benefits.

Intra class correlations were statistically significant among the Helplessness, Acceptance and Perceived benefits scales scores of the participants (Table 1).

There is a statistically significant difference between "Acceptance" and "Helplessness". There is a 47.1% relationship, as one increases the other decreases ($r = -0.471$, $p = 0.000$). There is a statistically significant difference between "Perceived benefits" and "Acceptance". There is a 48.5% relationship, one increases as the other increases ($r = 0.485$, $p = 0.000$).

DISCUSSION

The research hypothesis of the study was accepted because the highest scores were in "Helplessness" subscales. The disease cognition of individuals with TMJ disorder will focus on this category. This study provides evidence about the perceptions of disease cognitions in individuals with TMD and the psychological effect of the disorder. Regardless of sociodemographic, it describes how one perceives TMD and the ability to overcome its negative effects. The results support the view that disease cognitions are an important factor that correlates the disease with psychological well-being in general (7-10). Increased perception of helplessness in chronic disorders is consistent with studies that associate a weaker psychological condition with respect to other individuals (4, 6, 11, 12).

"Acceptance" from disease cognitions suggests that it can be a necessary prerequisite for all areas of TMD. Adaptive emotion change, strategies to eliminate useless thinking, and seeking social support are important protective factors for mental health, and the findings reflect the significant impact of disease cognitions on these domains. Conversely, "helplessness" from the cognitions of her illness is associated with withdrawal from social domains, and she is desperate for fear and anxiety about TMD and does not seek support. Therefore, intervention directed by individuals who do not benefit from cognition or disturbing emotions is essential to make the treatment of psychological state positive or treat people with TMD. Individuals' perception, attitude and ability to overcome chronic diseases are changeable situations.

CONCLUSION

Factors used and examined in this study, i.e., disease cognition, are dynamic. Future research can produce new results that can be modified and improved us-

Table 1. Intraclass correlation coefficient of ICQ subscales

	Intraclass Correlation			F Test with True Value 0	p
	ICC	Lower Limit	Upper Limit	Value	
Helplessness	.838	0.777	0.888	6.188	0.001*
Acceptance	.938	0.915	0.957	16.246	0.001*
Perceived Benefits	.925	0.896	0.948	13.283	0.001*

* $p < 0,05$

ICC: Intraclass correlation coefficient

ing our findings. In conclusion, psychological interventions that can create a positive perception against TMD and highlight the ability to overcome problem-oriented TMD can prevent the disease from controlling the daily life of people with TMD in a positive way and can help to affect the health promotion.

Abbreviations

ICQ — Illness Cognition Questionnaire

TMD — Temporomandibular disorders

TMJ — Temporomandibular joint

Sažetak

SPOZNAJA BOLESTI KOD PACIJENATA SA TEMPOROMANDIBULARNIM POREMEĆAJIMA

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Uvod: Temporomandibularni poremećaji (TMD) je termin koji obuhvata heterogene mišićnokoštane poremećaje, uključujući temporomandibularni zglob i odgovarajuće strukture. Bol je čest simptom TMD. Hronični bol je stanje koje utiče na fizički, psihički, kognitivni i socijalni aspekt čovekovog života, što za posledicu ima i negativan uticaj na sam kvalitet života. Spoznaja bolesti je definisana i time da pacijenti koji imaju hronično oboljenje imaju sopstveno ubeđenje o svojoj bolesti. Drugim rečima, spoznaja bolesti sadrži percepciju pacijenta, njegovo razumevanje bolesti i lečenja iste.

Materijal i Metode: Ova studija sprovedena je na 80 pacijenata koji su se javili na Kliniku zbog hroničnog temporomandibularnog poremećaja. Od odgovarajućih ispitanika dobijen je pismeni pristanak, a obrasci Upitnika o spoznaji bolesti (ICQ) su popunjeni od strane pacijenata pod nadzorom istraživača. Stati-

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tički program SPSS SPSS (Statistical Package for Social Sciences, Version 20, Chicago IL, USA) je korišćen za statističku obradu podataka.

Rezultati: ICQ rezultati ispitanika sa TMD: prosečna ocena za bespomoćnost bila je 16,95 (SD = 4,05), za prihvatanje 10,36 (SD = 3,14) i 15,55 (SD = 3,70) za opažene koristi. Postoji statistički značajna korelacija unutar grupe ispitanika među ocenama za Prihvatanje od 93,85% (0,915-0,957) i za Opažene koristi od 92.5% (0,896-0,948).

Zaključak: Psihološka potpora koja može razviti pozitivnu percepciju TMD-a i istaći sposobnost prevazilaženja orijentisanosti na TMD kao na problem, može sprečiti negativan uticaj bolesti na svakodnevni život pacijenata sa TMD-om i pozitivno uticati na proces promocije zdravlja.

Ključne reči: Illness Cognition Questionnaire, hronična bolest, temporomandibularni poremećaji.

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