CHANGES IN PAIN INTENSITY AND ORAL HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH TEMPOROMANDIBULAR DISORDERS DURING STABILIZATION SPLINT THERAPY – A PILOT STUDY

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SUMMARY – The aim of the study was to evaluate changes in pain intensity and self-perceived quality of life in patients with temporomandibular disorders (TMD) during stabilization splint therapy. The hypothesis was that the clinical subtype of TMD, depending on whether pain is of muscular or temporomandibular joint origin, and pain chronicity (acute *vs*. chronic pain) differently affect treatment response. Thirty patients were included and treated with a stabilization splint in a 6-month clinical trial. Treatment outcomes included pain-free maximal mouth opening (MO), assisted maximal MO, path of MO, asymmetry in lateral excursions, spontaneous pain intensity (visual analog scale, VAS), and self-perceived quality of life (Oral Health Impact Profile, OHIP-14). Overall, VAS and OHIP-14 scores changed significantly over time (VAS: $F=80.85$, $p<0.001$; OHIP-14: $F=34.78$, $p<0.001$). After 6 months, changes in pain intensity did not differ significantly between myofascial pain (MP) and disc displacement (DD) groups ($F=0.497$, $p=0.685$, effect size = 0.018), or between acute pain (AP) and chronic pain (CP) patients ($F=1.856$, $p=0.144$, effect size = 0.064). Changes in self-perceived quality of life did not differ significantly between MP and DD groups ($F=0.213$, $p=0.847$, effect size = 0.008), or between AP and CP patients ($F=0.816$, $p=0.489$, effect size = 0.029). Linear regression analysis was used to assess the contribution of each predictor variable to the explanation of the OHIP summary score variance. Results showed pain reduction (coefficient = 0.303; 95% CI: 0.120 to 0.485) and MO increase (coefficient = 0.149; 95% CI: 0.037 to 0.260) to be independent predictors of the OHIP-14 summary score changes ($R^2=0.453$), whereas other variables did not affect treatment outcome as assessed by OHIP-14. In conclusion, during 6-month stabilization splint therapy, significant changes in VAS and OHIP-14 summary scores were found. However, there were no significant differences in improvement rates between subjects with acute and chronic pain. Furthermore, no significant differences in improvement rates were found depending on whether pain was of muscular or temporomandibular joint origin.

Key words: *Occlusal splint; Temporomandibular disorders – therapy; Pain measurement; Quality of life*

Introduction

Temporomandibular disorders (TMD) is a collective term that involves several clinical problems affecting the masticatory muscles, temporomandibular joints (TMJ) and associated structures. The research diagnostic criteria for TMD (RDC/TMD) provide a dual diagnosis that recognizes physical symptoms (Axis I) and psychosocial factors (Axis II). The Axis I includes sub-classifications of clinical diagnosis such as muscle disorders (myofascial pain) and TMJ disorders (disc dislocations and degenerative joint disorders). There is evidence that no single etiologic factor

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or a sole etiopathogenetic theory might be responsible for TMD as a whole[1]. The current perspective regarding TMD is multidimensional and many physical, social and psychological factors can contribute to the development of this disorder[2,3]. TMD are frequently associated with chronic pain and thus have great influence on social behavior and psychological status of patients, and greatly limit the functioning of patients. Due to considerable psychosocial impact of orofacial pain, these patients represent a target population for quality of life assessments.

Splint therapy is the most common form of TMD treatment[4,5]. Most studies of splint therapy, however, have been limited by short duration outcome, small sample size, and failure to compare splint therapy with other forms of treatment[6]. In systematic reviews including randomized controlled trials (RCT), conflicting conclusions were reached on the efficacy of occlusal appliance therapy[7], but Türp *et al.*[8] conclude that, based on the currently best available evidence, most patients with masticatory muscle pain will be helped by the use of a stabilization splint.

The precise mechanism of action of occlusal devices is inconclusive. The historical hypothesis that structural deviations from normality are the main source for the development of pain has been rejected[9]. Therefore, several other factors potentially influenced by stabilization appliance therapy have been suggested, for example, increased vertical dimension, cognitive awareness, or an increase of peripheral input to the central nervous system[10]. Dao and Lavigne[11] drew the conclusion that "the results of controlled clinical trials lend support to the effectiveness of the stabilization appliance in the control of myofascial pain". Results of recent studies suggest that the splint acts primarily as a behavioral intervention, not as a medical device that changes the position of the jaw.

In many cases, the perception and feelings of patients regarding their oral health are ignored. When dealing with patients who suffer from orofacial pain, especially chronic orofacial pain, the impact of pain on the quality of life of these individuals should be assessed, but the benefit of treatment in terms of overall quality of life improvement must also be considered[4,12]. Some investigators, using subjective indicators of general[13,14] and oral health[15-17], have demonstrated that TMD may have great impact on the quality of life. However, changes in the self-perceived quality of life during stabilization splint therapy in TMD patients have not been fully explored.

The aim of the study was to evaluate changes in the self-perceived quality of life and pain intensity in patients with TMD during stabilization splint therapy. The hypothesis was that the clinical subtype of TMD, depending on whether pain is of muscular or joint origin, and pain chronicity (acute *vs.* chronic pain) differently affect treatment response measured by changes in the Oral Health Impact Profile (OHIP)-14.

Materials and Methods

The study was conducted at the Department of Prosthodontics, School of Dental Medicine, University of Zagreb. Subjects were selected from patients referred to the Department of Prosthodontics for reported pain and dysfunction of the temporomandibular region as the primary problem and had not been undergoing any treatment protocols previously. The sample included thirty symptomatic TMD patients, 23 females and 7 males, mean age 36.9 (range 19-63) years. To be included in this clinical trial, participants had to report having spontaneous pain greater than 30 millimeters on the visual analog scale (VAS). The subjects were informed about the study procedure and an informed consent was obtained. The study protocol was approved by the Ethics Committee of the School of Dental Medicine. Exclusion criteria included subjects with: 1) severe periodontitis, 2) removable prosthesis, 3) complete fixed prosthodontic restorations, 4) psychiatric or neurological disturbances, 5) ongoing orthodontic treatment, 6) conditions that may lead to degeneration of the joint and arthritis (RDC/TMD diagnostic category III), 7) history of trauma, 8) other orofacial pain conditions, and 9) any use of occlusal splint in the preceding year.

History data

Data on the participants' age, gender and marital status were obtained by a brief structured questionnaire. Subjects also filled in data related to the characteristics and duration of pain: acute pain (<6 weeks) or chronic pain (>6 months). For bruxism, an individual bruxism index was created based on clinical examination[18,19] and reported bruxism (data on whether the subject did, or

had in the past, clench or grind their teeth). The individual bruxism index (IB) was calculated as the mean of two factors involved, as described previously[20].

The patients underwent a routine clinical examination to detect signs and symptoms of TMD. The examination was based upon the Croatian version of RDC/TMD (Axis I)[20,21]. The first examiner (I.A.), trained in TMD diagnosis, performed clinical and functional examination of each patient. According to RDC/TMD, subjects were classified into two clinical subtypes: myofascial pain (MP) group (46.7%) and disc displacement (DD) group (53.3%).

Clinical sign evaluation

The second examiner (M.G), who was blind to the RDC/TMD and results from the questionnaire, performed baseline assessment and reassessment at six months after treatment initiation.

Training and calibration of the examiner

Standardization of the examiner and calibration of clinical examination was made on ten randomly selected subjects, different from the ones included in the investigation. There were no significant differences between the first and second measurement (p=0.86-0.89, paired t-test).

Pain

Spontaneous pain was evaluated by using a 100 mm-long VAS. The left endpoint of the scale indicated no pain at all, and the right endpoint indicated the worst pain imaginable.

Pain free maximal mouth opening and path of mouth opening

Maximal 'pain free' opening was measured as the distance between the maxillary and mandibular incisal edges. The 'pain free' opening was defined as the maximum distance the participant could open his/her mouth without experiencing any additional pain and discomfort. The presence of corrected or uncorrected deviation during mouth opening was evaluated.

Assisted maximal mouth opening

The extent of maximal assisted opening was recorded. Maximal mouth opening was defined as the maximum distance the participant could open the mouth, even if he/she felt pain or discomfort. After the subject had opened this wide, the examiner placed his fingers on the participant's maxillary and mandibular central incisors, and forced the participant's mouth open wider.

The range of mandibular lateral movements

The subject was asked to move the mandible as far as possible to the left/right side. The distance from the labioincisal embrasure between the maxillary centrals to the labioincisal embrasure of the mandibular incisors was measured with a millimeter ruler.

Complete clinical examination was performed at the beginning of the study and at follow-up appointment (at 6 months of occlusal splint therapy).

Oral health-related quality of life measurement

The oral health-related quality of life (OHRQoL) was measured by the 14-item version of the Croatian OHIP-14[22], which characterizes seven domains (functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability and handicap) through the use of two items for each domain. Subjects were asked how frequently they had experienced the impact of that item using a Likert-type scale (0 – never, 1 – hardly ever, 2 – occasionally, 3 – fairly often, 4 – very often) with zero indicating absence of problems and higher scores indicating worse oral health. Summary OHIP-14 scores can range from 0 to 56. A higher OHIP-14 score indicates poorer OHRQoL. The potential validity of the OHIP for evaluation of patients with TMD and its previous utilization for this purpose[23,24]contributed to the adoption in the present study of a version previously validated in Croatia[22]. Internal consistency showed high Cronbach alpha (0.77-0.91) and test-retest reliability showed high intra-class correlation (correlation coefficients, 0.79-0.94).

Stabilization splint fabrication

Maxillary stabilization occlusal splint was fabricated on stone cast mounted on SAM-3 articulator in centric relation according to centric relation registration[25]. It was a hard acrylic (Resilit-S, Erkodent) stabilization type of splint with full coverage of the occlusal surfaces. It had a thickness of about 1.5 mm at the level of the first molar. The same dental techni-

cian made all splints. The splint was adjusted to create uniform point contact of the centric cusps against the splint on all posterior teeth. Anterior teeth were in light point contact or were discluded slightly. The splint also had canine guidance. Patients were instructed to wear the splint only during sleep. Comfort, patient acceptance and function of the appliance were checked within 2 weeks and the same procedure was repeated at all follow-up appointments by the same clinician. Patients who felt discomfort associated with the use of splint, reported using the splint not every night, or received additional therapy during the follow-up were not included in the study.

Collection of data

Assessments of VAS (distance in millimeters from the lower anchor) and OHIP-14 were conducted at baseline before occlusal splint therapy (T0), and at follow-up appointments at 1 month (T1), 3 months (T2) and 6 months (T3) of occlusal splint therapy. Immediately after the questionnaires had been completed by the patient, the forms were sealed in a coded envelope by the clinician.

Statistical analysis

The SPSS (version 17) statistical package was used in all analyses. The pretreatment and 6-month follow-up data were analyzed by chi-square analysis and t-test. Univariate analysis of variance for repeated measurements was used to test the assessment (baseline-T0, T1, T2 and T3) differences in VAS and OHIP-14 scores. Statistical significance was assessed at the 0.05 level and then adjusted for multiple comparisons by the Bonferroni method. Linear regression

Table 1. Sample characterization

	Disc displacement (n=16)			Myofascial pain (n=14)		
	n (%)	Mean (SD)	Range	n (%)	Mean (SD)	Range
Gender: female male	 12 (75) 4 (25)			 11 (78.6) 3 (21.4)		
Age (yrs): 19-25 26-40 41-50 >50	 7 (43.8) 3 (18.8) 4 (25) 2 (12.5)	34.7 (14.13)	21-63	 3 (21.4) 4 (28.6) 5 (35.7) 2 (14.3)	39.4 (13.11)	19-63
Time from pain onset: <6 weeks (acute) >6 months (chronic)	 6 (37.5) 10 (62.5)	13.29 (12.29)	2-48	 11(78.6) 3 (21.4)	7.92 (10.29)	1-36
Bruxism: yes no	 7 (43.7) 9 (56.3)			 10 (71.4) 4 (28.6)		
'Pain free' mouth opening <35 mm: yes no	 7 (43.7) 9 (56.3)	37.59 (10.25)	22-54	 9 (64.3) 5 (35.7)	33.46 (8.48)	20.5-49
Maximal assisted mouth opening (mm)		45.40 (9.14)	30-62		40.96 (10.10)	22.5-58
VAS at baseline (mm)		64.75 (12.06)	40-85		70.28 (11.54)	50-86
OHIP-14		26.94 (8.86)	14-43		25.29 (12.38)	7-48

VAS = pain (mm) on visual analog scale;
OHIP-14 = Oral Health Impact Profile summary score.

analysis was used to assess the contribution of each predictor variable (pain reduction, increase in mouth opening, path of opening improvement, symmetry in lateral excursions) to the explanation of the variance of the OHIP summary score changes (T0-T3) in TMD patients wearing occlusal stabilization splint. Socio-demographic variables (age and gender), the presence of bruxism, pain duration and clinical subgroup were included as control variables.

Results

The sample characterization is given in Table 1. The mean age of 30 study participants was 36.9 (range 19-63) years. Patients were classified according to clinical diagnoses of the RDC/TMD Axis I. Fourteen (46.7%) patients met the criteria for myofascial pain (MP) and 16 patients (53.3%) met the criteria for disc displacement (DD). Forty-three percent of all patients reported pain with a duration of 6 months or more; 57% of patients had pain for less than 6 weeks. The mean value for the worst pain at baseline was 67.33 (range 40-86) for all patients. Bruxism was present in 56.7% of all patients. Up to 6 months of appliance therapy, none of the 30 patients demanded additional treatment. There were no statistically significant differences between the MP and DD groups according to age (t=-0.935; p=0.358), gender (χ^2=0.053; p=0.818), duration of pain (t=1.284; p=0.210), intensity of pain on VAS (T0) at baseline (t=-1.279; p=0.211), bruxism (χ^2=2.330; p=0.127) and range of opening: 'pain free' (t=-1.191; p=0.244) and maximal assisted (t=1.264; p=0.217) .

The pretreatment and 6-month follow-up data were analyzed by chi-square (path of opening and asymmetry in lateral excursions) and t-test for dependent samples (range of 'pain free' mouth opening, range of assisted mouth opening). Deviations in mouth opening were observed in 13 (81%) patients in DD group and 10 (71%) patients in MP group at baseline. The path of mouth opening improved within both groups at 6-month follow-up (Table 2) (DD group p=0.001; MP group p=0.002). Asymmetry in lateral excursions improved significantly in MP group at 6-month follow-up (14% still presented asymmetry, p=0.018). The range of mandibular opening improved significantly after 6 months of treatment (p<0.05) in both groups (Table 3).

Table 2. Frequencies (percentage distribution) of some clinical findings in myofascial pain (MP) and disc displacement (DD) groups at baseline and at 6-month follow up

		Baseline (T0)		6-month follow up (T3)		χ^2	p
Group		n	%	n	%		
Disc displacement	Path of opening: normal deviation	 3 13	 18.8 81.2	 12 4	 75 25	10.16	0.001
Myofascial pain	Path of opening: normal deviation	 4 10	 28.6 71.4	 12 2	 85.7 14.3	9.33	0.002
Disc displacement	Asymmetry in lateral excursions*: yes no	 8 8	 50 50	 4 12	 25 75	2.13	0.144
Myofascial pain	Asymmetry in lateral excursions*: yes no	 8 6	 57.1 42.9	 2 12	 14.3 85.7	5.60	0.018

Statistical evaluation by χ2; n = number of subjects; T0 = baseline; T3 = follow up appointment at 6 months of occlusal splint therapy; *clinical evidence of asymmetry in the presence of >2 mm difference in right and left laterotrusion.

Table 3. Comparison of different variables measured in myofascial pain and disc displacement groups at various time intervals

		Baseline (T0)		6-month follow up (T3)		t	p
Group		Mean (SD)	Min-Max	Mean (SD)	Min-Max		
Disc displacement	'Pain free' mouth opening (mm)	37.59 (10.26)	22-54	44.78 (7.27)	34-59	-4.46	<0.001
Myofascial pain	'Pain free' mouth opening (mm)	33.46 (8.48)	20.5-49	43.89 (6.47)	35-53	-3.66	0.003
Disc displacement	Maximal assisted mouth opening (mm)	45.41 (9.14)	30-62	50.03 (6.91)	38-64	-4.45	<0.001
Myofascial pain	Maximal assisted mouth opening (mm)	40.96 (10.1)	22.5-58	49.32 (5.7)	38-59	-3.31	0.006

ROM = range of mouth opening; statistical evaluation by paired t-test; T0=baseline;
T3= follow-up appointment at 6months of occlusal splint therapy.

Change in VAS and OHIP-14

For pain intensity, VAS scores improved significantly over time (F=80.85, p<0.001, effect size=0.750). After 6 months, changes in pain intensity did not differ significantly between the MP and DD groups (F=0.497, p=0.685, effect size=0.018) (Fig. 1) or between acute pain (AP) and chronic pain (CP) patients (F=1.856, p=0.144, effect size=0.064) (Fig. 2).

General improvement in the quality of during the study period was clearly shown by the gradual decrease of all mean OHIP-14 summary scores (F=34.78, p<0.001, effect size=0.564). After 6 months, changes in the self-perceived quality of life did not differ significantly between the MP and DD groups (F=0.213, p=0.847, effect size=0.008) (Fig. 3) or between AP and CP patients (F=0.816, p=0.489, effect size=0.029) (Fig. 4).

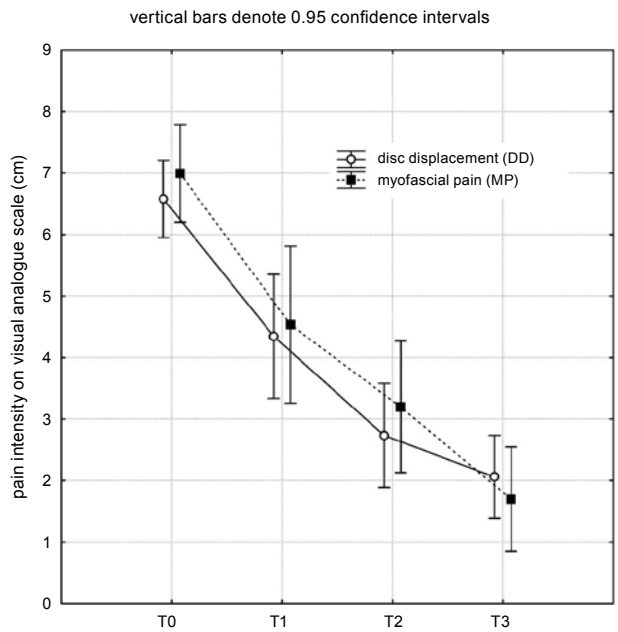

Fig. 1. Visual analog scale (VAS) pain intensity in myofascial pain (MP) and disc displacement (DD) groups at various time intervals: T0 – baseline, T1 – 1-month-, T2 – 3-month- and T3 – 6-month follow up of occlusal splint therapy.

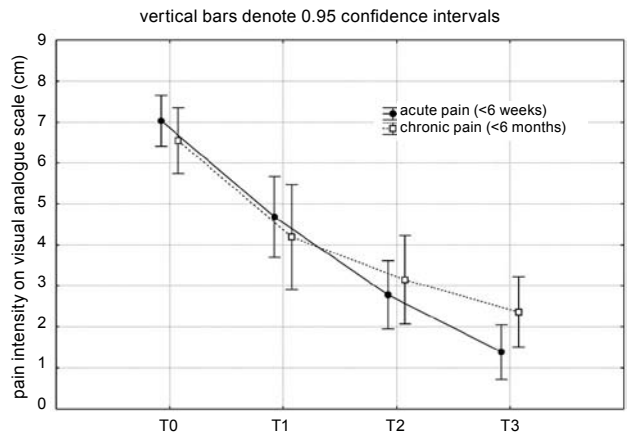

Fig. 2. Visual analog scale (VAS) pain intensity in acute and chronic pain patients at various time intervals: T0 – baseline, T1 – 1-month-, T2 – 3-month- and T3 – 6-month follow up of occlusal splint therapy.

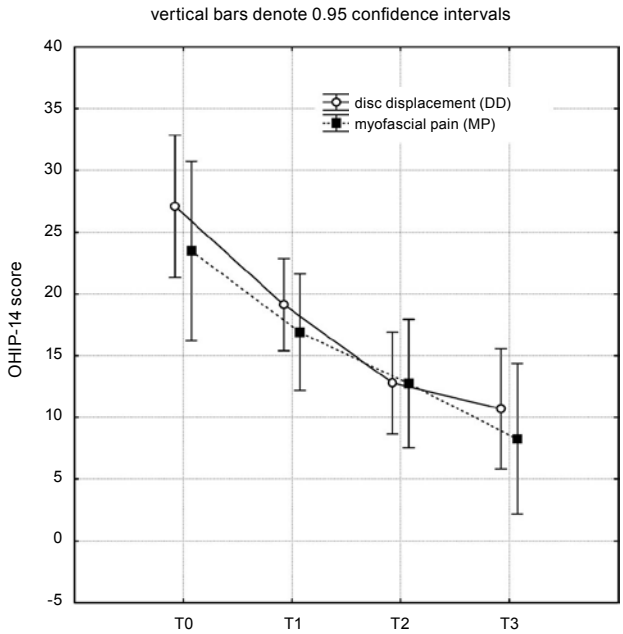

Fig. 3. Oral Health Impact Profile (OHIP)-14 score in myofascial pain (MP) and disc displacement (DD) groups at various time intervals: T0 – baseline, T_1 – 1-month-, T2 – 3-month- and T3 – 6-month follow up of occlusal splint therapy.

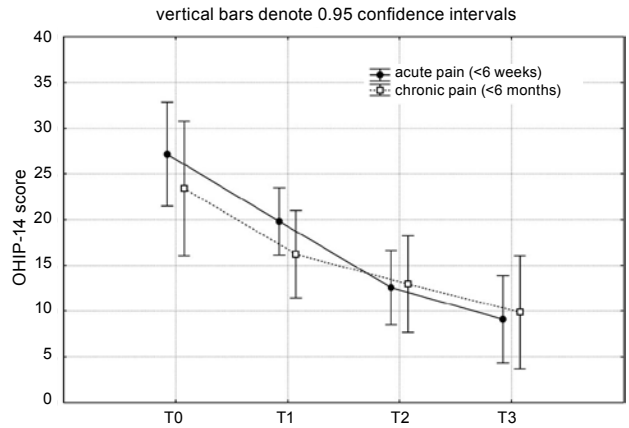

Fig. 4. Oral Health Impact Profile (OHIP)-14 score in acute and chronic pain patients at various time intervals: T0 – baseline, T1 – 1-month-, T2 – 3-month- and T3 – 6-month follow up of occlusal splint therapy.

Linear regression analysis was performed to identify the best independent variables (pain reduction, increase of mouth opening, path of opening improvement, symmetry in lateral excursions) for predicting the impact estimated by the quality of life (dependent variable). The construction of the model took confounding variables and colinearity into account. The variables that explained linear variation of the OHIP-14 summary score were identified through a forward stepwise process. The variables identified as the best predictive variables for good quality of life (analyzing the OHIP score: T0-T3 change) were VAS reduction (coefficient = 0.303; 95% CI: 0.120 to 0.485) and increase of mouth opening (coefficient = 0.149; 95% CI: 0.037 to 0.260). The model explained 45% (R^2=0.453) of the impact on the patient quality of life. Other variables did not affect treatment outcome as assessed by OHIP.

Discussion

This preliminary study was designed to evaluate changes in the self-perceived quality of life and pain intensity in patients with TMP during stabilization splint therapy. This can help upgrade the understanding of the effects of this type of therapy on the patients' lives. It should be borne in mind that spontaneous remission is an important factor for positive outcome. However, we tried to minimize the impact of this factor on the result by introducing subjects with different pain duration (chronic pain *vs.* acute pain) in order to see if the pain duration variable had a significant impact on treatment outcome. In other words, the study included a group of patients with orofacial pain who were untreated for 6 months. It is likely that the splint acted curatively, as in these patients spontaneous improvement had failed to occur over a long period before splint therapy; however, no direct evidence for this exists due to the lack of control group.

In the present study, the beneficial use of stabilization occlusal splint was observed in both clinical subtypes of TMD. A reduction of TMD signs/symptoms was noted. In the present study, 13 of 16 patients in DD group and 10 of 14 patients in MP group presented deviations during mouth opening at the time of diagnosis. Jaw function was improved in both groups; only four (25%) patients in DD group and two (14.3%) patients in MP group still presented deviations on mouth opening at 6-month follow up. Eight patients in MP group had asymmetry during lateral excursions at the time of diagnosis and it persisted in only two patients at 6-month follow up. Other authors[26] also report improvement in mouth opening after splint therapy.

Findings from double-blind, controlled, short-term studies in patients with TMD of arthrogenous origin suggest that the use of stabilization splints for the treatment of TMJ pain may be beneficial for reducing pain severity, at rest and on palpation, when compared with a control appliance[27,28]. Still, well-designed randomized clinical trials with long-term evaluation are lacking, and there is not enough evidence from trials to show whether or not stabilization splint may reduce pain in painful TMD[7].

Previous studies have suggested that with longer pain duration, the condition becomes more refractory to traditional medical treatment approaches[29]. In the study by Emshoff[30], the time from pain onset contributed significantly to these changes. In our group of patients, however, patients suffering from chronic pain showed similar improvement in VAS and OHIP scores as subjects suffering from acute pain.

Most of our patients reported that their condition improved during the trial and VAS data showed that reduction in the intensity of pain was progressive. At 6-month follow up, pain reduction by >70% was recorded in 44% of patients in DD group and in 78% of patients in MP group. This observation compares favorably with the results of other authors reporting on the frequencies of total pain remission in TMJ pain and dysfunction ranging from 30% to 70%[30,31].

In our study group as a whole, the quality of life improved with time, i.e. from pretreatment assessment through the 1-month and 3-month to 6-month follow-up appointments. The mean pretreatment OHIP-14 score (DD=26.94; MP=25.29) recorded in this study was higher than the means reported by Barros *et al.*[24] and Luo *et al.*[32], reflecting a stronger effect on the quality of life in our sample. It would be useful, however, to compare changes in the quality of life between the treated group and control group; however, assessment in an untreated control group during six-month follow up raises a number of ethical dilemmas. Furthermore, study patients may represent a group of more severe cases with a more severe quality of life impairment, and their outcomes cannot apply to the entire population. Taking the limitations of this study into account, the results still show a significant impact of orofacial pain on the patient quality of life.

Our results showed that the best predictive variables for good quality of life were VAS reduction and increase of mouth opening. It is known that pain has considerable impact on the quality of life[33]. In our study, however, quality of life improvement occurred both in acute and in chronic pain patients. This improvement could occur spontaneously or due to the possible placebo effect, but the fact remains that chronic pain patients were there for a longer period than the splint treatment lasted. In this subgroup, there was sufficient time for spontaneous healing, should this be the case. Thus, we could ascribe symptom improvement to the effect of treatment rather than to spontaneous remission. This pilot study encourages further studies that should include an active control group in order to evaluate the extent of the possible placebo effect.

Conclusions

Within the limitations of this study, significant changes in the VAS and OHIP-14 summary scores were found between baseline and follow up appointments while on occlusal splint therapy. This pilot study provided preliminary evidence that there were no significant differences in improvement rates between subjects with acute and chronic pain. Furthermore, no significant differences in improvement rates were found depending on whether pain was of muscular or TMJ origin. The variables identified as the best predictive variables for good quality of life were reduction of pain and increase of mouth opening.

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Sažetak

PROMJENE INTENZITETA BOLI I KVALITETE ŽIVOTA POVEZANE S ORALNIM ZDRAVLJEM U PACIJENATA S TEMPOROMANDIBULARNIM POREMEĆAJIMA TIJEKOM TERAPIJE STABILIZACIJSKOM UDLAGOM – PROBNO ISPITIVANJE

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Cilj istraživanja bio je ispitati promjene intenziteta boli i kvalitete života u bolesnika s temporomandibularnim poremećajima (TMP) tijekom terapije stabilizacijskom udlagom. U istraživanju se vodilo hipotezom da klinički podtip TMP-a, ovisno o tome je li bol mišićnog ili zglobnog podrijetla, i kronicitet (akutna ili kronična bol) različito odgovaraju na liječenje. U istraživanje je uključeno tridesetoro pacijenata koji su tijekom šestomjesečnog kliničkog ispitivanja liječeni stabilizacijskom udlagom. Mjere ishoda uključivale su maksimalno otvaranje usta bez boli, asistirano maksimalno otvaranje usta (pasivno rastezanje), postojanje devijacije/defleksije pri otvaranju, asimetriju pri lateralnim kretnjama, bol prema vizualno analognoj skali (VAS) te samoprocjenu kvalitete života i njenu povezanost s oralnim problemima (upitnik OHIP-14). Tijekom šestomjesečnog liječenja udlagom iznos boli prema VAS te zbroj bodova upitnika OHIP-14 značajno su sniženi (VAS: F=80,85; p<0,001; OHIP-14: F=34,78; p<0,001). Između pacijenata s mišićnim (MP) ili zglobnim poremećajima (DD) nisu pronađene značajne razlike u promjeni intenziteta boli nakon liječenja (F=0,497; p=0,685, veličina učinka = 0,018). Isto tako, nisu pronađene značajne razlike ni između pacijenata s akutnom (AP) ili kroničnom boli (CP) (F=1,856; p=0,144, veličina učinka = 0,064). Promjena u percepciji kvalitete života nije se bitno razlikovala između skupina MP i DD (F=0,213; p=0,847, veličina učinka = 0,008), kao ni između skupina AP i CP (F=0,816; p=0,489, veličina učinka = 0,029). Linearna regresija korištena je kako bi se procijenio doprinos svake prediktorske varijable u objašnjenju varijance ukupnog zbroja bodova upitnika OHIP-14. Rezultati su pokazali da su smanjenje boli (koeficijent = 0,303; 95% CI: 0,120-0,485) i povećanje iznosa maksimalog otvaranja usta (koeficijent = 0,149; 95% CI: 0,037-0,260) varijable najjače povezane s promjenom zbroja bodova upitnika OHIP-14 tijekom šestomjesečnog liječenja udlagom (R^2=0,453), dok ostale varijable nisu imale utjecaj na ishod liječenja. U zaključku, tijekom šestomjesečne terapije stabilizacijskom udlagom došlo je do značajnog smanjenja boli prema VAS te do poboljšanja kvalitete života (OHIP-14). Nije, međutim, bilo značajnih razlika u iznosu napretka između ispitanika s akutnom i kroničnom boli. Nadalje, nije bilo značajnih razlika u iznosu poboljšanja ovisno o tome je li ta bol bila mišićnog ili zglobnog podrijetla.

Ključne riječi: *Okluzijska udlaga; Temporomandibularni poremećaji – terapija; Bol, procjena; Kvaliteta života*