Physical Therapy for Patients With TMD: A Descriptive Study of Treatment, Disability, and Health Status

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The purposes of this study were to compare disabilities and health status associated with temporomandibular disorders (TMD) to other musculoskeletal disorders, to describe the types of physical therapy administered to patients with TMD, and to evaluate health-related quality of life (HRQOL) as an index of clinical change following physical therapy treatment. Outcomes for 56 patients (mean age 40 years, SD 13 years; 89% female) were evaluated from a large database generated by the Focus on Therapeutic Outcomes network. A generic assessment of HRQOL—the Medical Outcomes Study (MOS) 17—was used to evaluate the physical and mental aspects of disability associated with TMD, and the results were compared descriptively to three groups of patients with different cervical pain syndromes. The results showed that patients with TMD had limitations in social function, emotional well-being, and energy level similar to patients with cervical disorders. Physical function (ie, walking, carrying loads, or lifting), however, was much more limited in cervical disorder patients and bodily pain interfered more with daily work. Large positive effect sizes (> 0.80) in the areas of social function and bodily pain indicated clinical improvement for patients with TMD at the completion of physical therapy. The results suggest that the MOS-17 may be useful as one measure of clinical change for patients with TMD who receive physical therapy.
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Temporomandibular disorders (TMD) encompass a wide variety of clinical problems that may involve the temporomandibular joint (TMJ) and the muscles of mastication.[1] There are many theories concerning the etiology of TMD (see Suvinen et al[2] for a review), but patients with TMD typically show signs of pain or discomfort in the muscles of mastication, limitations of jaw movement, and/or pain and joint sounds originating in the TMJ.[3] Physical therapy and occlusal appliances are generally recommended as the primary treatment options for patients with TMD, because symptoms are often episodic and self-limiting.[4] Occlusal interferences are common in asymptomatic people as well as in patients with TMD.[4] It seems prudent, therefore, to avoid invasive occlusal procedures (ie, orthodontics and occlusal adjustment) in the management of TMD.

The general goals of physical therapy for TMD are to restore normal joint function (motion, strength, endurance), reduce adverse loading and pain, and facilitate the resumption of activities of daily living. Physical therapy for TMD includes passive and active exer-

cise, biofeedback/relaxation techniques, and postural correction.[5–12] Modalities (ie, ultrasound and transcutaneous electrical nerve stimulation [TENS])[13,14] and joint mobilization[15–17] have also been used as components of physical therapy to reduce pain and improve jaw motion.

Recent reviews have noted two distinct problems with developing an evidence-based practice that incorporates the use of physical therapy for TMD.[18,19] First, much of the evidence supporting the use of physical therapy for TMD is based on clinical reports that lack adequate experimental controls or that fail to limit cointerventions. Second, the primary outcome measures in studies that address physical therapy for TMD are often related to impairments rather than disability.[18] Measures of impairment focus on symptoms (ie, pain severity or loss of motion) and do not necessarily reflect the level of functional loss or disability associated with TMD. There is not a clear relationship between impairment and disability.[20] Von Korff et al,[20] for example, found that a significant proportion of patients with TMD reported high pain intensity, but did not report significant pain-related activity limitations. Impairments lead to disability only when a condition limits the ability to fulfill a role or task (ie, the ability to work) in life.[21]

Selecting relevant outcome measures to evaluate the success of physical therapy for TMD is necessary before the efficacy of rehabilitation procedures can be established. The focus of the present study was on the problem of selecting outcome measures that might be used in future studies to evaluate the success of physical therapy for TMD. Assessments of disability in terms of health-related quality of life (HRQOL) or self-perceived health status have recently emerged in the literature to describe the impact of TMD on physical, emotional, and social function,[22–27] but these studies have not described therapeutic outcomes in the context of physical therapy treatment. Slade and Spencer[27] implied that the assessment of the consequences of the disease, or its "social impact," is as important as understanding the pathologic process. They stated that "in order to capture those aspects of dental treatment which provide the greatest benefits for patients, it is important to consider improvements in quality of life."[27p3]

Health-related quality of life, a multidimensional construct that includes physical, mental, and social health, refers to the value that a patient places on current abilities and limitations.[27,28] The assessment of HRQOL has been advocated to determine the severity of illness within the context of individual, family, and social circumstances, and to determine the effect of therapeutic intervention in a meaningful way.[26,27] There are essentially two approaches to evaluating HRQOL. The first is through the use of disease-specific measures of HRQOL such as the Oral Health Impact Profile,[23,27] a tool that poses questions directly related to oral health, eg, "In the past month, how often have you had difficulty chewing any foods because of your pain?"[23] Disease-specific HRQOL assessments provide a detailed assessment concerning the self-perceived disability associated with dental impairments, but it is difficult to compare the impact of TMD on HRQOL relative to other musculoskeletal pain syndromes.

A second approach to evaluating HRQOL is generic assessment. For example, Reisine and Weber[26] used seven subscales from the Sickness Impact Profile,[29] along with other measures of anxiety and symptom intensity, to evaluate patients with TMD. They found that the majority of patients with TMD had difficulty sleeping, resting, and concentrating. These factors are "generic" because they can be assessed in any patient population. Generic measures of HRQOL have the advantage of providing a basis for comparing disability among individuals with different medical or dental problems. For example, Reisine and Weber[26] noted that patients with TMD experienced more serious disruptions in social functioning than patients with cardiac disease. A comparison of the generic aspects of health status across diagnostic categories can draw attention to the importance of physical therapy and fitness for maintaining general health. Physical therapy might have a greater impact on emotional well-being and social function than on pain or physical disability in certain diagnostic categories. A generic measure of health status seems ideally suited to assess a wide spectrum of clinical issues addressed by physical therapy treatment.

The RAND 36-Item Health Survey (SF-36) is a generic HRQOL assessment that provides indices of both physical and emotional health.[30–34] The SF-36 is a self-administered questionnaire that evaluates eight different health outcome dimensions: general health perceptions, physical functioning, energy/fatigue, emotional well-being, social functioning, bodily pain, role limitations owing to emotional problems, and role limitations owing to physical problems.[31,33] Reliability and validity have been previously established in aggregate analyses.[32,33,35,36] The SF-36 provides a profile of health outcomes that consists of a comprehensive (composite) score for each of the eight health dimensions.

The SF-36, or derivatives of this tool, has been used in research related to physical therapy,[37–40] but patients with TMD have not been included in these assessments. The extent of disability in terms of HRQOL for patients with TMD compared to patients with other musculoskeletal disorders is not known. In addition, the pattern of physical therapy practice (ie, the most commonly used treatments) involving TMD has not been systematically analyzed. The purposes of this study were to compare HRQOL associated with TMD to that of other musculoskeletal disorders, to describe the types of physical therapy administered to patients with TMD, and to evaluate HRQOL as an index of clinical change following physical therapy treatment.

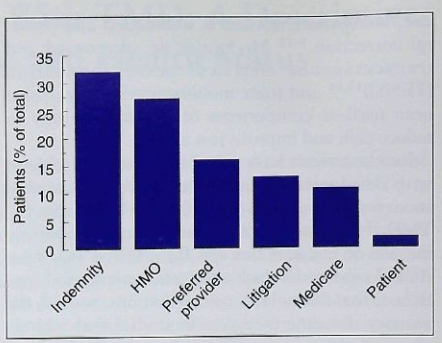

Fig 1 Sources of payment for physical therapy administered to patients with TMD.

Materials and Methods

Overview

Patient outcomes in this study were evaluated from a large database generated by the Focus on Therapeutic Outcomes (FOTO) network. The protocol for this study was approved by the University of Minnesota Committee on the Use of Human Subjects in Research. The database used in this study included 26,884 episodes of care for patients treated at 347 clinics. The primary geographic locations of treatment were in the Pacific (31%), North Central (26%), South Central (18%), and South Atlantic (8%) regions of the United States. Patients were admitted to physical therapy between November 1994 and January 1997. Each patient was evaluated by the primary caregiver by means of a standard form for data entry at the time of admission and discharge. For this study, the database was filtered to include only cases with the ICD-9-CM code (524.6) for temporomandibular disorders.[41] All cases with this designation were included in the analysis.

Subjects

A total of 56 patients were admitted for treatment of TMD (less than 1 percent of the total number of patients in the database). The average age of these patients was 40 years (SD = 13 years), and 89% were female. The mean duration that patients reported experiencing symptoms was 214 days (SD = 205 days; range = 7 to 802 days) prior to admission to physical therapy. Patients received care for a mean of 7.5 visits (SD = 4.1 visits) over a mean span of 25.8 days (SD = 22.1 days). Indemnity insurance and health maintenance organizations were the main sources of payment (Fig 1).

The majority of patients (55%; n = 31) were working full time when admitted for rehabilitation. Thirty percent (n = 17) were either retired, unemployed, or off work. Only 4% (n = 2) were receiving disability benefits for their condition. Most patients had one or more previous episodes of symptoms prior to admission (ie, a recurrence of limited motion or pain related to TMD) (Fig 2). The vast majority of patients, however, had no surgery for TMD prior to admission for the current impairment episode (Fig 3).

To evaluate the initial relative health status of patients with TMD, a comparison group consisting of 1,283 patients with cervical dysfunction was selected from the database. All patients, regardless of their diagnostic category, received the same generic assessment of HRQOL (described below). The patients with cervical dysfunction were evaluated in a previous study that addressed the HRQOL for patients with common orthopedic problems; a complete description of the demographic characteristics of these patients can be found in Di Fabio and Boissonnault.[37] The patients with cervical dysfunction were divided into three groups: 770 subjects were diagnosed with neck sprain (mean age 39.6 years, SD 13.3 years; 526 males), 362 were diagnosed with nonradiating neck pain (mean age 42.3 years, SD 13.9 years; 238 males), and 151 were diagnosed with radiating neck pain (mean age 49.2 years, SD 13.4 years; 88 males).

Outcome Measures

Types of Physical Therapy. The number of times that a specific type of physical therapy treatment was used (eg, exercise or TENS) was normalized to the total number of recorded treatments and then plotted.

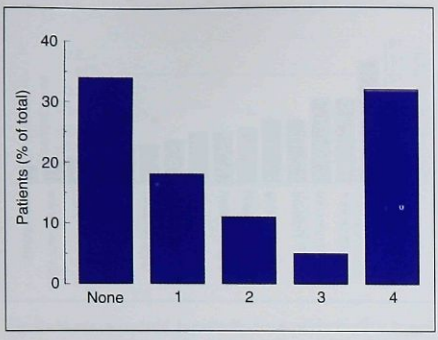

Fig 2 Number of impairment episodes related to TMD within the past 5 years.

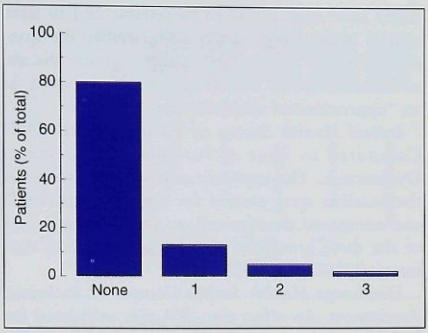

Fig 3 Number of past surgeries related to TMD.

Health-Related Quality of Life. *Description of the Tool.* The FOTO database uses the Medical Outcomes Study 17 (MOS-17; see Appendix), a tool that consists of 17 questions derived both from the short-form 12-item health survey (SF-12)[42] and the SF-36.[30–34,43] The MOS-17 evaluates six health outcome dimensions, of which there are three physical components—physical functioning, role limitations resulting from physical problems, and bodily pain—and three mental components—energy/fatigue, mental health (emotional well-being), and social functioning. The responses to the Likert-type scales on individual items (see Appendix) are transformed to a 0-to-100 scale, with 100 indicating the most favorable health state.[32,42,44] A composite score for each dimension has a range of 0 (worst possible score) to 100 (best possible score).[32,42,44] The process and rationale for modifying the SF-12 and SF-36 to produce the MOS-17 are described elsewhere.[37]

The reliability and validity of the MOS-17 have not been directly tested, and the data contained in the FOTO database were not in a format that allowed these tests. However, the reliability and validity of the "parent" tool—the SF-36—have been established.[32,33,35,36] In addition, the acute SF-36 scales (7-day recall) have been found to be reliable and have similar internal consistency compared to the standard version (4-week recall).[45] Preliminary reliability tests of the SF-12 show that the test-retest reliability coefficients were 0.89 for the physical components and 0.76 for the mental components.[42] Criterion-related validity of the SF-12 was demonstrated by high correlations with the physical ($r = 0.951$) and mental ($r = 0.969$) components of the SF-36.[42]

Change in Health Status Compared to Norms: Approximated Standard Scores. The MOS-17 domain scores at the initial assessment and at the discharge were compared to population norms.[46] The comparison of each cohort to the norm was made by calculating standard scores on patient data adjusted for age and gender. The standard score was the adjusted mean of the patient group minus the mean of the population norm divided by the standard deviation of the population norm. Patient status improved (relative to the norms) as the standard scores became less negative (moved in the positive direction).

There are limitations to using population norms[46] as a basis of comparison with the FOTO database. Ware et al[42] found high correlations between the scores on the SF-12 and the SF-36 ($r > 0.75$) and indicated that "norms and other interpretation guidelines published for the SF-36 summary measures will be useful in interpreting the SF-12."[42p231] The norms for the SF-36 were based on either mail or telephone surveys of 2,474 noninstitutionalized adults who responded to the 1990 National Survey of Functional Health Status.[46] The scoring algorithm used for the bodily pain domain in the MOS-17 (and in the SF-36 by Hays et al[30]), however, differed slightly from the protocol used to score the bodily pain norms reported by McHorney et al.[46] The method used by Hays et al[30] and the FOTO database yields more conservative (less severe) pain ratings. In addition, the recall period used in the normative study was 4 weeks compared to the "acute" recall period of 7 days used on the MOS-17 and the "acute" versions of the SF-36.[45] Although the acute SF-36

scales have been found to be reliable and to have similar internal consistency compared to the standard version,[45] it was necessary to qualify the use of standard scores by referring to this measure as an "approximated standard score."

Initial Health Status of Patients With TMD Compared to That of Patients With Cervical Dysfunction. The approximated standard scores at the baseline were plotted for patients with TMD and compared descriptively to the baseline scores of the three groups of patients with cervical dysfunction described earlier.

Discharge Health Status Compared to Initial Assessment. An effect size (ES) was calculated for each domain in the MOS-17 to provide a descriptive measure of clinical change. The ES, which normalizes the magnitude of change to the baseline standard deviation, is calculated by subtracting the initial MOS-17 score from the final score and then dividing by the standard deviation of the initial score.[47,48]

Interpretation of the Effect Size. Effect sizes have been used extensively in the literature dealing with outcomes related to physical therapy intervention.[38–40,49] Two aspects of the ES—magnitude and polarity—were considered in the present study. With regard to the magnitude of change, the range of ES scores was defined by means of some general guidelines suggested by Cohen.[47] An ES with an absolute value of 0 to 0.19 was considered negligible, 0.20 to 0.50 was defined as small, 0.51 to 0.80 was medium, and greater than 0.80 was defined as large. Polarity of the ES values was standardized so that a positive ES indicated an improvement in health status at the time of discharge, whereas a negative ES indicated a reduction in HRQOL compared to the initial assessment.

Results

Types of Physical Therapy

A wide range of treatments was selected for TMD (Fig 4). The most frequently selected treatments consisted of flexibility exercises and exercises for strength and endurance (Fig 4). An example of flexibility exercise is active jaw movement during which the patient provides gentle "overpressure" to obtain additional range of motion. Endurance activities might include control of head posture and repetitive "neck tucking" exercises to maintain position of the head over the shoulders. Modalities (ultrasound and TENS), joint mobilization, and massage each accounted for less than 7% of the total number of treatments recorded for TMD. In particular, modality therapy that was specifically directed at pain modulation (eg, TENS) was not frequently included (3%) in the treatments selected for TMD (Fig 4).

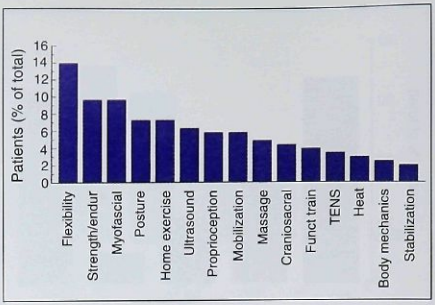

Fig 4 Prevalence of physical therapy treatments selected for patients with TMD (Funct train = functional training; TENS = transcutaneous electrical nerve stimulation).

Change in Health Status Compared to Norms

All domains improved (ie, showed less disability) at the time of discharge compared to the initial assessment, but the most marked improvements with respect to the norms were in the areas of bodily pain, energy/fatigue, emotional well-being, and social function (Fig 5). The approximated standard scores showed that initial bodily pain and social function scores departed most from the norm compared to the other domains (Fig 5). The standard score for physical function was only slightly below the norm at the time of the initial assessment (–0.23) and rose slightly above the norm at the time of discharge (0.08). The change in health status for the patients with cervical dysfunction was reported elsewhere.[37]

Initial Health Status of Patients With TMD Compared to Patients With Cervical Dysfunction

Patients with TMD had similar limitations in social function, emotional well-being, and energy level compared to the patients with cervical disorders (Fig 6). Initial physical function (ie, a state of health that would limit walking, carrying loads, or lifting) for patients with TMD did not depart substantially from the norm (standard score = –0.23). Physical function was much more limited for

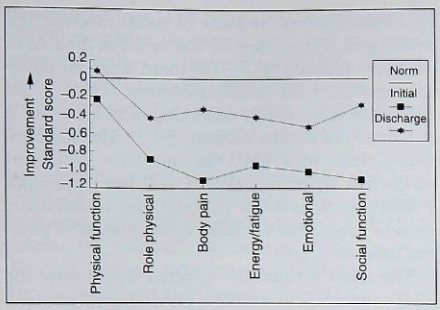

Fig 5 Approximated standard scores showing the magnitude of disability with respect to norms for patients with TMD. Norm = 0, and scores closer to 0 show improvement with respect to a nondisabled population.

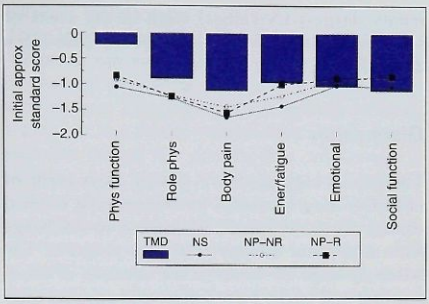

Fig 6 Approximated intake standard scores comparing the initial disability of patients with TMD to the initial disability of patients with cervical sprain (NS), neck pain with no radiation (NP–NR), and neck pain with radiation (NP–R) (norm = 0). Note the minimal disability in physical function and the relatively large disability in social function for TMD patients.

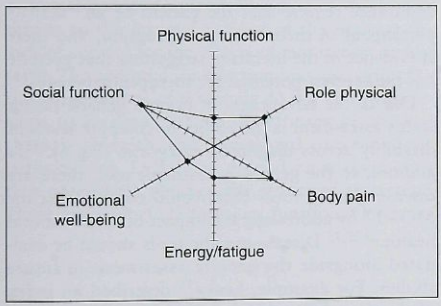

Fig 7 Effect sizes for each domain of the MOS-17 generic assessment of HRQOL for patients with TMD. The domains correspond to the questions in the MOS-17 (see Appendix) as follows: physical function, questions 1–10; role physical, 11 and 12; body pain, 13; energy/fatigue, 15; emotional well-being, 14 and 16; social function, 17 (scale = 0.25 SD/division).

Table 1 Means (Standard Deviations) for the MOS-17 Health Dimensions at the Initial Assessment and at Discharge From Physical Therapy*

Health dimension	Initial assessment	Discharge assessment
Physical function	78.8 (8.0)	86.1 (2.4)
Role physical	50.9 (8.5)	66.3 (3.5)
Bodily pain	48.8 (9.0)	67.4 (8.5)
Energy/fatigue	40.9 (11.1)	52.1 (4.1)
Emotional well-being	56.3 (9.2)	65.1 (1.0)
Social function	58.1 (7.1)	76.7 (5.5)

*n = 43 patients with complete (both initial and discharge) data; values adjusted for age and gender.

patients with cervical disorders, and bodily pain interfered more with daily work in cervical disorder patients than in TMD patients (Fig 6). All patients had limitations related to bodily pain at baseline, but the magnitude of the standard pain scores for patients with cervical dysfunction (–1.42 to –1.63) was proportionally larger than any other domain for this cohort (Fig 6).

Discharge Health Status Compared to Health Status at Initial Assessment

Health status measures at both the initial assessment and at discharge from physical therapy were available for 43 subjects with TMD (Table 1). There were large positive ES (> 0.80) in all health domains (Fig 7). The greatest improve-

ments (largest ES values) were in the areas of social function (ES = 2.62) and bodily pain (ES = 2.07) (Fig 7).

Discussion

The results suggest that a generic assessment of HRQOL may be useful in determining clinical change from the initial assessment to discharge from a physical therapy treatment program. The relatively large ES values in the domains of social function and bodily pain suggest that physical therapy may have the greatest impact on these aspects of function (Fig 7). While previous work has indicated that physical therapy is effective for treating chronic pain syndromes,[50] it has been suggested that experiment bias (ie, contact with an empathetic professional or the hope for relief of symptoms conveyed during treatment) largely accounted for the success of the therapeutic intervention.[18,50,51] Feine et al[18] and Feine and Lund[51] did qualitative or quasiquantitative reviews to critique the efficacy of physical therapy and suggested that patients do better with physical therapy, but the effect is no greater than placebo. These studies[18,50,51] however, focused primarily on impairments versus disabilities, included noncontrolled trials in the analysis, or did not systematically address HRQOL. Malone and Strube[50] did show substantial treatment ES values for joint and dental pain (> 1.00), but their results were criticized because they used a small number of ES values and combined dissimilar studies in their quantitative review.[52] Physical therapy might be particularly effective for reducing pain in patients with TMD, but it was not possible in the present study to determine how much of the clinical effect (Figs 5 and 7) might have been the result of placebo. Further study is needed to determine what types of TMD will respond best to physical therapy treatment.

Malone and Strube acknowledged that "researchers must begin to view pain as a multidimensional experience composed of intensity and emotion rather than simply as a physical sensation."[50p237] Pain-related social and psychologic disabilities have been previously reported for patients with TMD.[2,23–26] The large social function and bodily pain ES that were found in the present study support the notion that clinical change can occur in these domains. These results were consistent with a previous report of serious limitations in social interaction for patients with TMD.[26]

The magnitude-of-effect sizes were not uniform for all aspects of HRQOL (Fig 7). While the largest ES values were in the areas of social function and bodily pain, the smallest ES was found in the area of physical function (Fig 7). The mean score for physical function at the initial assessment (Table 1) did not differ substantially from the mean score for a population of healthy subjects (Fig 5). This indicates that patients with TMD may not have limitations on the first 10 items of the MOS-17 (see Appendix). Patients with cervical dysfunction, in contrast, showed substantial disability in the domain of physical function (Fig 6).

The most frequently selected treatments for TMD consisted of exercise rather than "passive" therapies that did not require the patient's active participation in their own care (Fig 4). Although many types of physical therapy were used to treat TMD, the most common involved flexibility exercise and exercises for strength and endurance (Fig 4). The data suggest that modalities are used less frequently for TMD than previously assumed[13,14] and might reflect an overall trend in physical therapy practice to limit the use of "passive" treatments.[53] Exercises for flexibility, strength, and endurance require that the patient be an "active" participant in their treatment program, and there is evidence in the literature suggesting that exercise has the greatest potential for therapeutic benefit.[18]

One of the advantages of using a generic health status assessment is the ability to compare levels of disability across diagnostic categories (Fig 6).[54] In addition to the generic assessment tool, there are disease-specific tools that would complement the MOS-17 by addressing the impact of TMD on oral health.[23,27,55] Disease-specific tools should be evaluated alongside the generic assessment in future studies. For example, Leake[55] described an index of chewing ability that is scored from 0 to 5 based on self-reported ability to chew the most "difficult" of five foods. The Oral Health Impact Profile is also a disease-specific tool that evaluates the social impact of oral disorders. The combination of disease-specific and generic assessments of HRQOL would provide a comprehensive evaluation of self-perceived disability and also a way to index clinical outcomes across the diverse patient populations that receive physical therapy.

All of the patient data evaluated in this study originated from clinics classified as "orthopedic outpatient care" facilities. The prevalence of physical therapy for TMD could not be measured because no random sample had been taken of the types of care delivery systems that potentially manage patients with TMD (ie, interdisciplinary craniofacial pain clinics). This fact would account for the seemingly low proportion of TMD referrals in the FOTO

database (< 1%). The population identified in the FOTO database, however, mirrored previously reported profiles of patients with TMD. The predominance of females with TMD in the current study is consistent with the reports of gender distribution for patients attending specialty TMD clinics.[2,4,11,23,56–58] Other aspects of the FOTO patient demographics—age, chronicity, and work status—were also similar to the profiles of patients who attend specialist facial pain clinics.[2,23,24,58–60] In general, the "typical" patient with TMD was middle-aged, worked full time, and tended to have a history of multiple impairment episodes.

Deyo et al[61] stated that "[l]arge automated databases . . . in addition to being representative of large populations providing large sample sizes, and being relatively inexpensive to analyze, . . . can provide information that is unaffected by recall and that is collected in an unobtrusive way unlikely to influence patient or [care-giver] behavior."[61p2090s] In spite of these advantages, there are several important limitations to the present study. The analysis was based on a retrospective pretest, posttest, nonrandomized design, and there were threats to the internal validity of the findings (ie, lack of control for the effects of maturation or history). The potential for selection bias also exists.[61]

The limitations of this study do not allow conclusions to be drawn about the efficacy of physical therapy. Health and functional outcomes for patients with TMD may depend on many factors that potentially obscure the effects of treatment. These factors include preinjury functional level, the patient's initial cognitive status, and depression.[58] These factors were not analyzed in this study.

No attempt was made to validate the diagnosis or evaluate the specific type of treatment given to each patient. The proportion of patients receiving treatment for temporomandibular pain versus pain-free limited jaw opening was not known. In addition, each patient received different combinations of physical therapy treatments, so it was not possible to determine if some treatments led to better outcomes compared to other treatments. The accumulation of data that were included in the database was not under the author's direct control, but that of a privately owned corporation (FOTO, Incorporated). In addition, 23% of the subjects with TMD (n = 13) had missing outcomes data (Table 1). In spite of these limitations, the database provided a unique way to evaluate the potential usefulness of a generic measure of health-related quality of life for patients with TMD.

The findings of this study provide evidence that a generic tool to evaluate health-related quality of life should be considered as one measure of clinical change for patients with TMD. Over the course of physical therapy, patients improved in both physical and emotional dimensions of health-related quality of life, particularly in the areas of social function and bodily pain. The observational nature of this study precludes inferences about the efficacy of physical therapy, but the evidence justifies additional testing of this generic outcome measure to judge the effectiveness of physical therapy for patients with TMD.

Appendix

MOS-17
Short-Form Health Survey

MOS-17 short-form health survey derived from Ware et al[27] and Hays et al[28] and represents part of the Patient Status Survey developed by FOTO, Inc, Knoxville, Tennessee. These items were selected from the SF-36 Health Survey, Copyright 1992 Medical Outcomes Trust. All rights reserved. Reproduced with permission from the Medical Outcomes Trust, Boston, Massachusetts, USA.

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much? (Make one circle on each line.)

	Yes, limited a lot	Yes, limited a little	No, not limited at all
1. Vigorous activities such as running, lifting heavy objects, participating in strenuous sports			
2. Moderate activities such as moving a table or pushing a vacuum cleaner, bowling or playing golf			
3. Lifting or carrying groceries			
4. Climbing several flights of stairs			
5. Climbing one flight of stairs			
6. Bending, kneeling or stooping			
7. Walking more than one mile			
8. Walking several blocks			
9. Walking one block			
10. Bathing or dressing yourself			

During the past 7 days have you had any of the following problems with your work or other daily activities as a result of your physical health? (Make one circle on each line.)

	No, none of the time	Yes, a little of the time	Yes, some of the time	Yes, all of the time
11. Accomplished less than you would like				
12. Were limited in the kind of work or other activities				

	Not at all	A little bit	Moderately	Quite a bit	Extremely
13. During the past 7 days, how much did pain interfere with your normal work (including both work outside the home and housework)?					

These questions are about how you feel and how things have been with you during the past 7 days. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 7 days. . . (Mark one answer on each line.)

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
14. Have you felt calm and peaceful?						
15. Did you have a lot of energy?						
16. Have you felt downhearted and blue?						

	All of the time	Most of the time	Some of the time	A little bit of the time	None of the time
17. During the past 7 days, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?					

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Resumen

Terapia física, incapacidad y estado de salud de los pacientes con desórdenes temporomandibulares

Se han encontrado recientemente artículos que evalúan la incapacidad en términos de la calidad de vida relacionada a la salud (CVRS), en la literatura que describe el impacto del desorden temporomandibular (DTM) sobre las funciones físicas, emocionales y sociales. Sin embargo, estos estudios no han descrito los resultados clínicos al hacer tratamiento con terapia física. Los propósitos de este es tudio fueron los de comparar la CVRS asociada con los DTM a otros desórdenes musculoesqueléticos, para describir los tipos de terapia física administrada a pacientes con DTM, y para evaluar la CVRS como un índice de cambio clínico luego del tratamiento con terapia física. Se evaluaron los resultados de 56 pacientes (edad media 40 años, desviación estándar 13 años, 89% mujeres) de una base de datos extensa, generada por la red de Enfoque sobre Resultados Terapéuticos. Se utilizó una evaluación genérica de la calidad de vida relacionada a la salud- el "Estudio de Resultados Médicos (ERM) 17"- para evaluar los aspectos físicos y mentales de la incapacidad asociada a los DTM, y los resultados fueron comparados descriptivamente a tres grupos de pacientes con diferen ,tes síndromes de dolor cervical. Los resultados demostraron que los pacientes con DTM tenían limitaciones similares en cuanto a la función social, bienestar emocional, y nivel energético en comparación a los pacientes con desórdenes cervicales. Las funciones físicas (es decir caminar, cargar, o levantar cosas), sin embargo estaban más limitadas en las personas con desórdenes cervicales y el dolor corporal interfería más con el trabajo diario en estas personas, en comparación con los pacientes que sufrían de DTM. Se determinaron grandes magnitudes de efectos positivos (ME>0,80) que indicaron cambios clínicos favorables para pacientes con DTM al completar la terapia física, en comparación con la evaluación basal. Las mejorías más significativas (magnit ud de efectos mayores) fueron en el área de la función social (ME=2,62) y dolor corporal (ME=2,07). Una posible explicación de este hallazgo es que el tratamiento seleccionado más frecuentemente para los DTM consistió en el ejercicio, más bien que los tratamientos "pasivos" que no requerían la participación activa del paciente en su cuidado. Los resultados indican que el ERM 17 puede ser útil como una base para comparar el estado de salud entre los pacientes con diferentes diagnósticos médicos y dentales, y como una medida de cambio clínico para pacientes con DTM quienes reciben terapia física.

Zusammenfassung

Physikalische Behandlung, körperliche Behinderung und Gesundheitsstatus für Patienten mit Kiefergelenkstörungen

Beurteilungen der körperliche Behinderung im Sinne der der Gesundheits-zusammenhängige Lebensqualität (GL) (health-related quaility of life, HRQOL) werden neuerdings dargestellt um die Einwirkung von Kiefergelenkstörungem (TMD) auf physikalische, Gemüt-betreffende, und soziale Funktion zu beschreiben. Jedoch haben solche Veröffentlichungen nicht die klinische Resultate von dem Standpunkt der körperliche Behandlung untersucht. Das dreifache Ziel dieser Studie war es, die mit TMD zusammenhängende GL mit der GL andere Krankheiten der Skelettmuskulatur zu vergleichen, die verschiedene Arten von physikalischen Behandlungen der Patienten mit TMD zu beschreiben, und GL als Index klinischer Veränderung nach solchen Behandlungen zu beurteilen. Ergebnisse für 56 Patienten (Durchschnittsalter 40 J., S.D. 13 J., 89% weiblich) aus einer grossen Datensammlung des "Focus on Therapeutic Outcomes Network" wurden beurteilt. Eine allgemeine Beurteilung der GL wurde durch die "Medical Outcomes Study 17 (MOS) wurde unternommen. Die Resultate wurden mit solche von drei Patientengruppen, die mit andere Typen von Zervikalschmerz litten, verglichen. Es zeigte sich, dass TMD-Patienten sowie die andere Gruppen ähnliche Beschränkungen in sozialer Funktion, Gefühlsmässigkeit und Energie hatten, und das physische Funktionen, (z. B. laufen, Gewichte tragen, heben) in den Zervikalschmerzpatienten (ZP) viel mehr eingeschränkt war. Schmerz störte die tägliche Arbeit der ZP mehr als die TMD-patienten. Effektgrösse (effect size, ES) zeigte (ES > 0.80) günstige klinische Änderung nach der körperliche Therapie Beendung für TMD-Patienten. Die grösste Verbesserungen waren in sozialer Funktion (ES = 2.07) und in körperlichen Schmerz (ES = 2.07) zu sehen. Eine mögliche Erklärung dafür ist darin zu sehen, dass Leibesübungen die haufigste Therapie für TMD war, anstatt passive Therapie in welcher die Patienten keine aktive Mitarbeit haben. Die Ergebnisse deuten darauf hin, dass das MOS 17 eine Basis sein könnte, den Gesundheitsstatus verschiedener Patientengruppen zu vergleichen, sowie ein Messinstrument für klinische Änderungen in körperlich behandelte TMD Patienten.