Patients with chronic pain: degree of kinesiophobia related to dance practice

Pacientes com dor orofacial: grau de cinesiofobia relacionada a prática da dança de salão

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ABSTRACT

BACKGROUND AND OBJECTIVES: Temporomandibular disorder is a generic term for conditions that affect the temporomandibular joint, mastication muscles and/or associated structures. The multifactor etiology of the temporomandibular disorder requires multidisciplinary treatment. As constant pain is one of the main characteristics of this disorder, some patients limit their movements during physical activities as a defense mechanism to protect against pain. The present study aimed to determine whether the participation of individuals with the temporomandibular disorder in dance therapy is related to the fear of practicing physical activities.

METHODS: An exploratory, quantitative study was conducted with a sample of 35 patients with chronic pain recruited from a clinic specialized in the diagnosis and treatment of temporomandibular disorder. The participants were allocated to two groups: active group (n=14) and control group (n=21). The Brazilian version of the Tampa Scale for Kinesiophobia was used to measure the fear of movement.

RESULTS: Mean age was 46.4 years in the active group and 42.9 years in the control group. The mean kinesiophobia score (on a scale of 17 to 68) was 39 in the active group and 39.8 in the control group.

CONCLUSION: The present findings demonstrate no significant difference in terms of the degree of kinesiophobia between individuals who agreed and declined to participate in the proposed activity (dance).

Keywords: Chronic pain, Dance therapy, Exercise therapy, Fear, Temporomandibular joint dysfunction syndrome.

RESUMO

JUSTIFICATIVA E OBJETIVOS: O distúrbio temporomandibular é um termo genérico para condições que afetam a articulação temporomandibular, músculos de mastigação e/ou estruturas associadas. A etiologia multifatorial do distúrbio temporomandibular requer tratamento multidisciplinar. Como a dor constante é uma das características principais desta desordem, alguns pacientes limitam seus movimentos durante as atividades físicas como mecanismo de defesa para proteger contra a dor. O objetivo deste estudo foi determinar se a participação de indivíduos com distúrbio temporomandibular em terapia de dança está relacionada ao medo de praticar atividades físicas.

MÉTODOS: Foi realizado um estudo exploratório e quantitativo com uma amostra de 35 pacientes com dor crônica recrutada em uma clínica especializada no diagnóstico e tratamento de distúrbio temporomandibular. Os participantes foram alocados em dois grupos: grupo ativo (n=14) e grupo controle (n=21). A versão brasileira da *Tampa Scale for Kinesiophobia* foi usada para mensurar o medo do movimento.

RESULTADOS: A idade média foi de 46,4 anos no grupo ativo e 42,9 anos no grupo controle. O escore médio de cinesiofobia (na escala de 17 a 68) foi de 39 no grupo ativo e 39,8 no grupo controle.

CONCLUSÃO: Os resultados não demonstram diferença significativa em termos do grau de cinesiofobia entre indivíduos que concordaram e se recusaram a participar da atividade proposta (dança).

Descritores: Dor crônica, Medo, Síndrome da disfunção da articulação temporomandibular, Terapia da dança, Terapia do exercício.

INTRODUCTION

The International Association for the Study of Pain defines pain as an "unpleasant sensory and emotional experience associated with potential or real tissue damage…"[1]. In temporal terms, pain is classified as either acute neurovegetative changes characterized by intensity and the need for immediate therapeutic measures)[2] or chronic, which lasts beyond the normal tissue healing time and has the greater involvement of emotional, cultural, socio-affective and psychological factors, thereby requiring multidisciplinary treatment[2,3].

The orofacial pain of a temporomandibular origin, which is most often described as temporomandibular disorder (TMD), is characterized as chronic pain that involves somatic as well as psychological aspects, requiring dentists to have knowledge regarding the diagnosis and implications of this disorder as well as understand the need for adequate treatment[3]. The multifactor nature of TMD and its complex diagnosis requires multidisciplinary inte-

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raction for the subsequent establishment of an intervention protocol[4,5]. Such therapies generally consist of counseling, needling, joint infiltration, drug therapy and even surgery, which should be combined with more conservative therapies[6].

It was previously believed that physical exercise should be of high intensity to have a positive effect on reducing pain. However, current studies have demonstrated that moderate-intensity aerobic exercise, such as dance, swimming and walking, for at least ten minutes can activate endogenous pain control mechanisms[7], preventing an increase, and even reducing pain[8]. However, chronic pain interferes with actives (work, recreation, activities of daily life and social activities) and emotional anguish (depression, anxiety, and coping behavior). These factors can influence physical behavior in varied, complex ways, such as the cessation of activity due to pain, avoiding painful body movements and specific activities due to emotional problems or fragmenting a task into steps and performing it more slowly[9]. Pain can be an obstacle that prevents individuals from practicing exercises with greater intensity and can lead to false beliefs, fear or proneness to avoid physical activities, thereby creating a vicious circle of inactivity and disability[10].

Population-based studies have shown that physically active individuals have a significantly lower risk of developing chronic pain. Physical exercise adapted to individual practice is recommended to improve physical fitness and participation in activities of daily life[11]. Movements practiced in groups and performed in synchrony, such as dance, have positive effects by promoting social interaction among strangers and raising the pain threshold[12]. The movements employed in dance therapy can constitute a therapeutic strategy to improve the physical, physiological and emotional aspects of individuals with TMD. The practice of a pleasurable, motivating and socializing activity can prevent the aggravation of an adverse health condition due to a lack of movement and precarious interpersonal relationships and can also promote positive attitudes, thereby alleviating stress[13], which is associated with TMD[14].

Despite these benefits, some patients refuse to make movements. This could be related to kinesiophobia, which is a term used to define an excessive, irrational and debilitating fear of making movement and physical activity due to feelings of vulnerability to pain or the fear of suffering further injury[15]. The catastrophization of pain generates fear, making an individual cautious regarding performing a given movement, which can result in the aggravation of pain and functional incapacity over time[16].

The objective of this study was to evaluate the relationship between kinesiophobia and the refusal of patients with chronic orofacial pain to participate in the activity proposed.

METHODS

An exploratory, quantitative study was conducted over a four-month period in 2015 with a random sample of patients in need of treatment due to the chronic orofacial pain of a temporomandibular origin. After the diagnosis based on the Research Diagnostic Criteria for Temporomandibular Disorders, all participants signed a statement of Free an Informed Consent Form (FICT).

The Brazilian version of the Tampa Scale for Kinesiophobia was used, which is composed of 17 items addressing pain and its intensity. The response options are scored as follows: strongly disagree =1; disagree =2; agree =3, and strongly agree =4. For the determination of the total, the scores for items 4, 8, 12 and 16 need to be inverted. The minimum score is 17, and the maximum score is 68. A higher score denotes more kinesiophobia[10]. The questionnaires were applied in an individualized setting prior to the initiation of dance activities without contact with other participants.

The sample consisted of patients who were starting their treatment in the clinic of pain and TMJ dysfunction, so it is a convenience sample. All patients (n=35) agreed to participate and understood the need for the treatment of orofacial pain of a temporomandibular origin as well as the different therapeutic modalities routinely employed at the specialized service, including dance therapy. After explaining about the dance classes, everyone was invited to attend weekly lessons lasting one hour. After consent or verbal refusal to participate in the activity the total sample of 35 patients was allocated into two groups. The active group (AG) (n=14) was composed of patients who accepted dance therapy as a complementary form of treatment. The control group (CG) (n=21) was composed of individuals who declined to participate in dance therapy. Classes were given by a skilled professional, offered free of charge and encompassed the theory and movement of dance, with an emphasis on ballroom dancing. Breathing and stretching techniques were taught. Different ballroom dancing styles were demonstrated, and the patients then began to practice dance. The one-hour classes were offered weekly near the time scheduled for the patient's weekly visit to the clinic for conventional treatment in such a way as to not interfere with the other therapeutic modalities employed. This study was approved by the local ethics committee (CEP HT/SES/Pr) under process number 1.053.082/2015.

Statistical analysis

The data were submitted for statistical analysis using the SPSS 20.0 Statistics from IBM®. Initially, descriptive analyses were carried out (frequency of variables and central tendency and dispersion measures). The Chi-Square test was used for the distribution of gender and groups (AG and CG). The nonparametric Mann-Whitney test was used for the categorical variable "group" and the score on the Tampa Scale for Kinesiophobia. The level of significance was set to 5% ($p<0.05$).

RESULTS

Females accounted for much of the sample (32 women and 3 men), and the average age was 44.29 years. Fourteen (40%) of the 35 volunteers agreed to participate in dance therapy 35 (AG), and 21 declined to participate (CG).

No statistically significant difference regarding gender was found between the groups (Table 1).

No statistically significant difference between the groups was found regarding the score on the Tampa Scale for Kinesiophobia (Table 2). Both groups had mean scores below the cutoff point considered to indicate fear of movement (42.50 points).

Table 1. Distribution of patients in different groups according to gender (n=35)

		Groups		p-value*
		AG	CG	
Gender	Male	1	2	0.805
	Female	13	19	

AG = active group; CG = control group. Source: data from study; *Chi-square test.

Table 2. Scores on Tampa Scale for kinesiophobia in the study groups (n=35)

	Score on Tampa Scale for kinesiophobia				p-value*
	Mean (SD)	Median	Min.	Max.	
AG	39 (7.03)	38.5	28	51	0.778
CG	39.81 (6.75)	42.00	27	51	

AG = active group; CG = control group. Source: data from the study; * Mann-Whitney study.

DISCUSSION

The present study was conducted to analyze whether the non-participation in dance therapy among patients with a diagnosis of chronic pain stemming from TMD was due to fear of movement. However, as both the AG and CG had similar kinesiophobia scores, it was not possible to determine whether the fear of movement was a determinant factor in declining to participate in the proposed activity.

TMD-associated pain can affect one's performance on activities of daily life, psychosocial functioning, and quality of life[17]. Dance provides a tiring, but pleasant way to exercise that can improve the fitness level and encourage a more active lifestyle[18].

Pain intensity and fear of mandible movements play an important role in the decision to seek care for orofacial pain. Accordingly, women with a greater fear of mandibular movements are more likely to seek care[19]. In the present study, women predominated in the sample (32/35), possibly due to the predisposition to chronic pain, especially in the age group of 46.4±4.29 years[20].

A study was conducted with two groups that performed exercises, one of which was also submitted to cognitive-behavioral therapy under the supervision of a psychologist[21]. Patients were evaluated in three stages: prior to treatment, after four weeks of treatment and 12 months after treatment. No significant difference was found between groups regarding the degree of kinesiophobia at baseline. The improvement was seen only after four weeks. The group submitted to exercise and therapy demonstrated a nearly 10-point improvement and the outcome of treatment after 12 months was 15 levels lower of kinesiophobia.

In contrast, other study[22] employed a multidisciplinary program and found that the degree of kinesiophobia was not significantly altered between the pre-intervention and post-intervention evaluations. This is like the results of the present study, in which declining the proposed activity did not appear to be associated with a fear of experiencing an increase in pain. This finding also corroborates the data described in another study, in which a low positive correlation was found between craniofacial pain and fear of movement[19].

Although the intervention itself was not evaluated in the present study, which only investigated the refusal to participate in the proposed activity, the fact that the degree of kinesiophobia remained similar in both groups underscores the constant challenge health-care professionals face when attempting to improve the physical fitness and psychological well-being of patients with chronic pain.

Using a multidisciplinary program similar to the one employed in the previously cited studies[21,22], other study analyzed two groups of participants, one of which performed 13 progressive, high-intensity activities and the other performed specific activities. Fear was investigated for the different activities. Although the intensity of the activities increased when fear decreased, the results were non-significant during and after treatment in both groups[23].

A similar study analyzed two groups. One group performed high-intensity exercises until muscle exhaustion (n=146) and the other performed no exercises (control; n=154). No statistically significant difference was found between groups regarding the fear of movement, even after controlling by gender. Moreover, more than 60% of the patients in the exercise group were afraid of movement. In contrast, the volunteers in both groups in the present study (those who accepted participating in dance therapy and those who declined to participate) had mean scores on the Tampa Scale of Kinesiophobia indicative of an absence of fear of movement: 39.0±7.08 points (median: 38.5) in the AG and 39.81±6.75 points (median: 42.0) in the CG[24].

A study was conducted with 40 individuals allocated to two groups based on gender: males (n=28) and females (n=12). All participants performed an aerobic activity under the supervision of a trainer. Even with this division by gender, the degree of kinesiophobia did not differ significantly between the groups (38 for men and 40 for women)[25].

Other study[26] allocated 32 patients from a physical therapy clinic to two groups. The CG continued conventional clinical treatment. The intervention group performed physical activities administrated by a physiotherapist divided into three phases: postural exercises, resistance exercises and more intensive activities, such as pushups, sit-ups, etc. Evaluations were performed before and after the activities. No difference in kinesiophobia occurred in the CG, for which the score remained at 40 points. In the intervention group, the score dropped from 36 before the intervention to 25 after the intervention, which was a statistically significant difference, despite the absence of a multidisciplinary approach like that employed[27,28].

Previous studies report that dance therapy achieves similar results in comparison to other physical activities employed to control chronic pain, as dance promotes physical fitness and improves the capacity for aerobic activity[1]. Moreover, there is wide evidence that dance offers benefits such as an improvement in psychological well-being[3,4] enhanced self-esteem[5] and a reduction in anxiety[6].

The limitations of the present study were the small number of participants, the lack of commitment on the part of the volunteers who accepted dance therapy and the heterogeneity of the sample. Future studies in this field should attempt to define the relationship between specific motivational dimensions and personality traits or different characteristics between individuals who agree or disagree to participate in a given therapeutic modality.

CONCLUSION

The present findings showed no significant difference in terms of the degree of kinesiophobia between individuals who agreed to dance therapy and those who declined to participate in the proposed activity. While it was not possible to conclude whether patients with chronic pain have a fear of movement, when such a fear is detected, a multidisciplinary team should work to break down the paradigms of fear and overcome kinesiophobia.

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