

Effect of the mediumistic painting in the temporomandibular disorders, anxiety and sleep disturbances

Abstract

The present study aim was to evaluate the effects of the mediumistic painting on patients with symptoms of temporomandibular disorders, anxiety and sleep disturbance among a sample of participants that seeked this kind of therapy in a spiritist center in the city of São Paulo. The volunteers group consisted of 29 adults who came to the service center for different reasons. These patients were evaluated in relation to the presence or not of symptoms related to temporomandibular disorders, anxiety and sleep disturbance before receiving the mediumistic painting and again thirty days after. A significant improvement was observed between before and after results for the three symptoms ($p < 0.001$). Although the literature has not shown the effectiveness of mediumistic painting for therapeutic purposes we can verify that there was a significant improvement.

Keywords: complementary therapies, spiritual therapies, anxiety, temporomandibular joint disorders, sleep wake disorders, sleep apnea syndromes

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Introduction

Temporomandibular disorders are pathological orofacial conditions characterized by a dysfunction at the temporomandibular joint, pre-auricular area and masticatory or skull muscles. They are associated with acute and chronic pain in the temporomandibular joint and other bodily areas, such as the ears, neck and head. Limitations of jaw and joint functions and the production of sounds during mastication.^{1,2} Approximately 75% of the population has one of the signs of temporomandibular disorders and 33% of the population has at least one temporomandibular disorders symptom.³⁻⁵

The temporomandibular disorders are multifactorial conditions caused by different etiologies, such as postural and proprioceptive changes, psychosocial factors like anxiety, depression, stress and parafunctions (teeth-grinding and nail biting).^{2,6,7} There is an association between temporomandibular disorders with physiological, psychological and behavioral factors.⁸⁻⁹

Surveys have shown that patients with higher levels of anxiety and depression have a higher risk for developing temporomandibular disorders compared to individuals with lower levels of these symptoms.^{10,11} Scientific articles indicate a significant positive correlation between temporomandibular disorders, stress, anxiety and depression in non-clinical samples, such as undergraduate students.¹² In clinical temporomandibular disorders patients has been observed that more than 50% of the patients had a chronic and a stress factor history prior to the establishment of the disorder. This may be explained by the fact that stressors and an increased level of anxiety might result in higher muscular tension, and these factors may lead to the development of temporomandibular disorders, which is confirmed by the fact that temporomandibular disorders frequently have a muscular origin.^{5,11,12} These authors suggest that anxiety and stress are part of the etiology of temporomandibular disorders and also play a significant role in maintaining the symptoms and worsening them.

Besides the characteristic signs and symptoms temporomandibular

disorders can influence the quality of sleep.¹³ The sleep disturbance characterizes whether for sleepless nights, restless sleep, daytime drowsiness, daytime sleepiness, psychological stress and chronic fatigue. May alter mood, attention, memory, irritation and accentuate family and social problems.¹⁴ The etiology of sleep disturbance is multifactorial and varies from emotional issues such as depression and anxiety, social issues such unemployment and violence, physical as chronic pain and environment causes such as internal and external noise in the bedroom.⁸ sleep disturbance when present for a long time can significantly influence the quality of life and health and increase the risk of mortality.^{8,14}

Thus, as temporomandibular disorders are related to different etiologies, namely, psychosocial stressors, it has been studied that therapeutic interventions that have the goal of directly or indirectly decreasing anxiety and stress levels may be useful to decrease the incidence of temporomandibular disorders or even prevent it. Among these different therapeutics interventions are the complementary therapies. According to Lucchetti et al.,¹⁵ about 40% of patients in the United States looking for a complementary therapy and at least 13% use spiritual healing or prayer. Nowadays the number of articles that speaks about the importance of religiosity and spirituality in the treatment of patients is of great significance.^{15,16}

The spiritist complementary therapy, also known as spiritist therapy, is characterized by the use of fluidic water, prayer, gospel reading in the home, disobsession sessions (spirit release therapy), vibration sessions, mediumistic painting, spiritual surgical operation with or without incisions, a Christian posture (charity, kindness, love) and magnetic healing (laying on of hands).¹⁷ Spiritist therapy, although not yet fully understood nor extensively studied, has shown promising indirect results such as those reported in a recent systematic review.¹⁸

All cataloging of the study of Kardec is called codification of the spiritist doctrine, which was propagated in different countries, including Brazil.^{15,19,20}

So far, and to the best of our knowledge, this study is the first to investigate the relationships among temporomandibular disorders, anxiety, sleep disturbance and mediumistic painting for therapeutic purposes. The primary aim of this study was to evaluate anxiety, temporomandibular disorders and sleep disturbance scores in a sample of participants that seeked this kind of complementary therapy in a spirit center in the city of São Paulo and then compare the results before and thirty days after receiving the mediumistic painting, which is the result of the artistic creation of a painter spirit and this creation occurs by the mechanism of mediumship.^{21,22}

Methods

This was a study that evaluated the prevalence of temporomandibular disorders, anxiety, and sleep disturbance symptoms in a sample of adults.²³ This study consisted of 29 volunteers (21 women, 08 men) ranging in age from 27 to 62 years. This study was accepted by the research ethics committee with the number: 95088518.2.0000.0062. These participants were directed to the “therapy through art”, that is called the therapy with mediumistic painting.²² The volunteers were forwarder to a reserved room where the three questionnaires³ were applied. It is important to emphasize that no anamnesis was done prior to the application of the three questionnaires.

Research diagnostic criteria for temporomandibular disorders (rdc/temporomandibular disorders)

The Research Diagnostic Criteria for Temporomandibular Disorders (RDC/temporomandibular disorders) provide clinical researchers with a standardized system that can be evaluated for its use in examining, diagnosing, and classifying the most common subtypes of temporomandibular disorders. Since their introduction in 1992, the RDC/temporomandibular disorders have been widely used in clinical research settings around the world where temporomandibular disorders and orofacial pain are managed.²⁴ Translations, in whole or in part, have been created and used in clinical studies with Dutch, Finnish, French, German, Hebrew, Japanese, Spanish, and Swedish populations; in addition, Chinese, Danish, Italian, Korean, Portuguese, and Romanian versions of the RDC/temporomandibular disorders have been produced but not yet field-tested. The original (ie, US) version of the RDC/temporomandibular disorders has also been recommended as a model system generalizable to investigating the diagnosis and classification of any chronic pain condition.²⁴

The major attributes of the RDC/temporomandibular disorders that make them especially valuable in clinical research settings are: (1) a carefully documented and standardized set of specifications for conducting a systematic clinical examination for temporomandibular disorders; (2) operational definitions stated in unambiguous measurable terms for major clinical variables (range of jaw motion, pain during muscle palpation, joint sounds); (3) demonstrated reliability for these operationally defined clinical measurement methods; and (4) use of a dual-axis system: Axis I to record clinical physical findings, and Axis II to record behavioral (mandibular functional disability), psychologic (depression, somatization), and psychosocial status (chronic pain grade for assessing pain severity and life interference).²⁴ In this study was used the Axis II, because it was considered more important for this study.

Beck anxiety inventory (BAI)

The BAI is a 21 item self-report inventory designed to evaluate

the presence and severity of anxiety in adults and adolescents. It was created by Beck and colleagues, and it is a well-accepted measure of anxiety.¹³ This instrument discriminates between the cognitive, emotional, and physiological symptoms of anxiety. Responses are rated on a four point Likert scale and range from 0 (not at all) to 3 (severely) and they range along a continuum of symptom severity. The total score ranges from 0 to 63 and it is possible to classify the responders according to the severity of anxiety. Scores from 0 to 9 represent normal or no anxiety, scores of 10 to 18 represent mild to moderate anxiety, scores of 19 to 29 represent moderate to severe anxiety and scores of 30 to 63 represent severe anxiety.¹⁴ The BAI has good statistical properties, such as a high internal consistency (Cronbachs $\alpha = .92$) and a test-retest reliability of .75 over one week.

Adapted questionnaire from fletcher and luekett (sleep disturbance)

This questionnaire comprises 38 issues related to sleep and associated complaints. Each of the 38 questions is scored from 0 to 3 where never = 0, very rarely = 1, occasionally = 2 and often = 3. The score overall varies from 0 to 114, being divided by 38. Scores greater than one signal the presence of significant symptoms of sleep disturbance.

After that, the patient is referred to a room where after a prayer and a reading he will attend an explanation about what therapy is and how it works. And to finish it attends an evangelical explanation according to the gospel spiritism and after that he receives the pass and the fluidic water. All of these steps last for a maximum of 60 minutes. The objective of this stage is initially that the patient understands how the work of art works as therapy, how to handle with the drawing if it receives and with the evangelical explanation, pass and fluidic water the patient is harmonized, calm and prepared to receive the drawing. That is, the treatment is already started in this step.²²

At the same time in another room the mediums painting are working. These mediums presented the mediumship of painting spontaneously and when they were referred to the group of “therapy through art” underwent a training and study for a period of four months. The purpose of this study time is for them to know the philosophy of the group and become fit for the care of the assisted. The group consists today of eight mediums of painting. That forms which were filled out by the fraternal attendant are placed on the table and as the medium finishes a drawing he puts it next to a card. That is, each drawing is made especially for the person whose name is on that sheet, what is called a directed drawing.²²

The mediums painting works with soft pastel in a special paper for this kind of pastel. The drawings are delivered to the attendance inside a closed bag and with written instructions on how to proceed with drawing. The assisted are told to open the bag with the drawing only when they arrive at their homes, so as not to arouse the curiosity of other people. Also, are told when get home, place the drawing in an intimate and quiet place where it can be appreciated, like your room, for example. It hasn't cost for the assisted.²² Thirty days after the assisted have received the drawing we contacted so that we can schedule one day for the application of the three questionnaires again.

Data analysis

T-Student paired, Pearson's correlation, chi-square analysis and equality test of two proportions were used to test the correlation between anxiety, sleep disturbance and temporomandibular disorders

symptoms. The significance level was set at $p < .05$. We used the software Statistical Package for Social Sciences (SPSS) for Windows, 16.0 version to analyze the data.

Result

This study consisted of 72.41% women and 27.58% men. The age ranged from 27 to 62 years. Table 1 compares the times before and after therapy for mean sleep disturbance and BAI scores. There is a mean difference between the moments for both scores, where both had a mean reduction. In sleep disturbance the mean fell from 0.718 to 0.444 (p -value <0.001). In BAI, the average fell from 13.62 to 5.45 (p -value <0.001). Table 2 presents the comparison of the moments for the distribution of the relative frequency (percentages)

of the classifications of the three protocols. Only for sleep disturbance classification there is no difference between moments. Exemplifying in RDC, we have that the Presence percentage fell from 75.0% to 24.1% (p -value <0.001). The Pearson correlation was used to measure the degree of correlation between the sleep disturbance and BAI scores, at each time point. It is found that there is no statistically significant correlation between the sleep disturbance and BAI scores, in both moments (the P -value before and after was 0.087 and 0.228 respectively). In the Tables 3–5, to finish, the Chi-Square test was used to measure the relationship between the protocols, using the classifications. These relationships were made for a moment. There is no relation between the 3 protocols, that is, they are considered statistically independent.

Table 1 Comparison of the moments to establish scores

Scores		Average	Medium	Standard deviation	CV	Min	Max	N	IC	P-value
SD	Before	0.718	0.71	0.293	41%	0.07	1.23	29	0.107	<0.001
	After	0.444	0.42	0.276	62%	0.02	1.07	29	0.1	
BAI	Before	13.62	13	10.35	76%	0	45	29	3.77	<0.001
	After	5.45	4	5.95	109%	0	30	29	2.17	

Table 2 Comparison of moments for classification of protocols

Classifications	Before		After		P-value	
	N	%	N	%		
SD	With symptom	4	13.80%	1	3.40%	0.16
	No symptom	25	86.20%	28	96.60%	0.16
RDC	Absence	7	25.00%	22	75.90%	<0.001
	Presence	21	75.00%	7	24.10%	<0.001
BAI	Normal	13	44.80%	26	89.70%	<0.001
	Soft	7	24.10%	2	6.90%	0.07
	Moderate	8	27.60%	0	0.00%	0.002
	Severe	1	3.40%	1	3.40%	1

Table 3 SD and BAI ratio by moment

SD e BAI		With symptom		No symptom		Total		P-value
		N	%	N	%	N	%	
Before	Changed	3	75%	13	52%	16	55%	0.39
	Normal	1	25%	12	48%	13	45%	
After	Changed	0	0%	3	11%	3	10%	0.73
	Normal	1	100%	25	89%	26	90%	

Table 4 SD and RDC ratio by moment

SD e RDC		With symptom		No symptom		Total		P-value
		N	%	N	%	N	%	
Before	Presence	3	100%	18	72%	21	75%	0.29
	Absence	0	0%	7	28%	7	25%	
After	Presence	1	100%	6	21%	7	24%	0.071
	Absence	0	0%	22	79%	22	76%	

Table 5 BAI and DRC ratio by moment

BAI e RDC		Changed		Normal		Total		P-value
		N	%	N	%	N	%	
Before	Presence	13	81%	8	67%	21	75%	0.378
	Absence	3	19%	4	33%	7	25%	
After	Presence	0	0%	7	27%	7	24%	0.302
	Absence	3	100%	19	73%	22	76%	

Discussion

The present study aims to evaluate anxiety, sleep disturbance and temporomandibular disorders symptoms in a group of participants who sought the spiritist center looking for religious complementary therapy called mediumistic painting and compare these symptoms before and 30 days after the patients received the painting. According to expectations, results of this study indicate that mediumistic painting has positive adjuvant therapeutic action on the symptoms of anxiety, sleep disturbance and temporomandibular disorders (Tables 1&2). Other result also obtained is that there is no relation between the 3 protocols, that is, they are considered statistically independent (Tables 3–5). People when they look for a spiritist home go because they are in need of comfort of help for something that is afflicting them, that is all those patients involved in this group were looking for something that could help them in some way.^{15–18} Most of them did not even know they had symptoms of temporomandibular disorders, anxiety or sleep disturbance.

A prerequisite for the effectiveness of complementary spiritist therapy is the patient's receptivity to the treatment, that is, that the patient really believes and has faith that this type of therapy can help him.²²

In this study, the mean age was 41.7 years, that is, of young adults, in the productive phase of their lives and also the majority of females. Also found in this study that the search for complementary therapy is not directly related to the patient's economic partner conditions. Studies have shown the importance for the treatment of the patient, in any treatment whatsoever, of the presence of spirituality and religiosity in the treatment context. Patients who have spirituality, whether or not they have a religious belief, go through the treatment better, have more hope, have better mood, and have more favorable clinical conditions.^{15–18} Although there is still a need for further studies in relation to complementary therapies and their impact on health, it could be deduced that in the city of São Paulo the service performed by the spiritist centers impacts the health system. In this study was verified that mediumistic painting had a positive influence on all the patients in the studied group. However, the scientific milieu is still lacking in works that talk about mediumistic painting for therapeutic purposes, although many groups work for this purpose there is no cataloging or systematic study, so this study is unprecedented and of great relevance.

Regarding temporomandibular disorders symptoms before receiving the design we had the presence of symptoms in 75% of the sample. And after the drawing we had the presence of symptoms in 24.1% of the sample (Table 2). Regarding the symptoms of sleep disturbance before receiving the design we had the presence of symptoms in 13.8% of the sample. And after receiving the drawing

we had the presence of symptoms in 3.4% of the sample (Table 2). Regarding the symptoms of anxiety, we had the presence of symptoms in 55.1% of the sample. And after the drawing we had the presence of symptoms in 10.3% of the sample. As for anxiety, a classification of the level of anxiety in mild, moderate and severe anxiety was performed according to BAI. What we can present as results in relation to mild anxiety: 24.1% of the sample presented before the drawing and after the drawing still presented severe anxiety 6.9% of the sample. Regarding anxiety Moderate: 27.6% of the sample presented before the drawing and after we had no case of moderate anxiety. Regarding severe anxiety: 3.4% of the sample presented before the drawing and after that it was maintained in 3.4% (Table 2). It is important to highlight the safety of therapy, since unlike drug therapy, spiritist complementary therapy with mediumistic painting has no side effects. Probably positive thinking or thinking change explains the positive results obtained in this study. All patients who were receiving medical treatment for some reason were instructed to follow their doctor's instructions.²²

Future studies are necessary to evaluate the effectiveness of mediumistic painting with therapeutic purpose and in a way that is compatible with medical treatment, whether it is conventional or not, in the face of other pathologies as well. The future studies should explore, either through the use of randomized controlled trials or longitudinal studies, the effects of mediunic painting on temporomandibular disorders, sleep disturbance and anxiety; manipulating the variables among different groups. Therefore, future studies should explore differences possibilities of mediumistic painting like a complementary religious therapy. From this study we understand that mediumistic painting can also be considered as a complementary therapy having its proven effectiveness.

Conclusions

- There is significant difference between the moments (before and after) for RDC, sleep disturbance and BAI results ($p < 0.001$). Although the literature has not yet shown the effectiveness of mediumistic painting for therapeutic purposes, we can verify that there was a significant improvement between before and after results for the three symptoms.
- There is no statistically significant correlation between sleep disturbance and BAI scores at both moments.
- There is no relation between the 3 protocols, that is, they are considered statistically independent.

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Conflicts of interest

Author declares that there are no conflicts of interest.

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