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Original article

COMPARATIVE STUDY ON IMPROVING THE QUALITY OF LIFE IN PATIENTS WITH CERVICAL PAIN THROUGH THE APPLICATION OF CRANIOSACRAL THERAPY

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Abstract

Aim. Craniosacral Therapy is a method of manual, non-invasive, very gentle therapy used to evaluate and treat the Craniosacral system, which consists of membranes and cerebrospinal fluid that surrounds and protects the brain and spinal cord. The therapist uses a light touch of 5 g, with which he releases the restrictions in the Craniosacral system to improve the functioning of the central nervous system, causing relaxation at both the somatic and mental levels. The purpose for which this study was conducted lies in the desire to establish whether the effects obtained by the therapeutic program consisting of kinesiotherapy and Craniosacral Therapy are more effective than those formed by kinesiotherapy and therapeutic massage applied to the subjects taken in this study and if these results are maintained 3 months after the end of treatment.

Methods. From a group of 30 patients, 15 patients with neck pain were randomly chosen to receive a Craniosacral therapy intervention for 4 weeks. We have used evaluation methods to determine the effectiveness of our programs and the survey method by applying the Quality of Life Assessment questionnaire.

Results. Statistical analyses have shown that there are significant differences between the pre- and post-test between the experimental and control groups.

Conclusions. In our study, the combination of craniosacral therapy with physical therapy resulted in improved quality of life in patients with neck pain. These results need to be considered by therapists to better understand and involve this concept for beneficial effects in treating patients with cervical pain arising from various causes.

Keywords: craniosacral therapy, quality of life, cervical pain

Introduction

The International Association for the Study of Pain (IASP) defines cervical spine pain in the pain classification as pain that can be felt anywhere in the posterior region of the cervical spine, starting from the superior nuchal line to the first thoracic spinous process. (Merskey & Bogduk, 1994).

Another point of view was taken by Guzman et. al. (2008) in their study on cervical pain and its associated disorders, in which cervical pain is considered as pain localized in the anatomical region of the neck, with or without radiation to the head, trunk region or upper limbs.

Craniosacral therapy is based on the belief that the human body has the ability to heal itself. In addition to reducing stress and tension held in the body or lessening pain, Craniosacral therapy can develop a person's understanding of the body's self-healing potential and its own inner energy. These findings are supported by osteopathic physician John E. Upledger (2008) in the book: Craniosacral Therapy: What It Is, How It Works. Craniosacral Therapy is a non-invasive, very gentle manual therapy method used to evaluate and treat the Craniosacral system, which is made up of the membranes and cerebrospinal fluid that surround and protect the brain and spinal cord. The therapist uses a light touch of 5 grams, with which he releases the restrictions in the Craniosacral system to improve the functioning of the central nervous system, causing relaxation on both the somatic and mental levels.

In 2011, a descriptive study was published in the specialty magazine "Journal of Alternative and Complimentary Medicine" from the United States of America that demonstrated the effectiveness of CranioSacral therapy in general. The treatment was applied to 157 people with various medical problems : headaches, migraines, neck or back pain, anxiety and depression. The results showed that 74% of patients reported a significant improvement in their problem, 67% reported an improvement in quality of life, reduction in pain and chronic stress, and 70% of people reduced the amount of medication they used or even had discontinued their use. (Harrison & Page, 2011)

The specific methods that therapists use in Craniosacral therapy are as follows: compression-decompression of the sphenobasilar joint, Atlas-Axis decompression, ventral compression of the occipital bone, lifting of the parietal, frontal, temporal, sphenoid bones, temporomandibular joint decompression, fascia decompression of mandibles, detensioning of the facial bones and hyoid bone, release of the scapular belt and diaphragm, decompression of the sacrum, compression-decompression of the iliosacral joint and iliac crests.

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The Still points moments are intervals of rest between gentle manipulation techniques, which occur every 3-4 minutes during the treatment, an interval lasting one minute in which the Craniosacral rhythm suddenly stops. During this time, the patient rests quietly.

According to Jakel & von Hauenschild (2012), Craniosacral therapy can be an alternative treatment approach aimed at releasing restrictions around the spinal cord and brain and subsequently restoring body function. A previous systematic review found valid scientific evidence that Craniosacral therapy was beneficial for patients. The purpose of this review was to identify and critically evaluate the available literature on Craniosacral therapy and to determine the clinical benefit of Craniosacral therapy for treating of patients with a variety of clinical conditions.

Another study carried out on the effects of Craniosacral therapy in fibromyalgia starts from the defining aspects of the pathology being considered a combination of physical, psychological and social disabilities. The causes of the pathological mechanism underlying fibromyalgia are not known, but fibromyalgia can lead to reduced quality of life.

Objectives

The objective of this study was to analyze the effects of CranioSacral therapy on depression, anxiety and quality of life in fibromyalgia patients with painful symptoms. An experimental study was conducted, a longitudinal clinical design, 84 patients diagnosed with fibromyalgia were randomly assigned to an intervention group (CranioSacral therapy) or a placebo group (sham treatment with disconnected ultrasound). The treatment period was 25 weeks. Anxiety, pain, sleep quality, depression, and quality of life were assessed at baseline, 10 weeks, 6 months, and 1 year post-treatment. Anxiety, pain, quality of life and sleep quality index were significantly better in the intervention group than in the placebo group after the treatment period and at 6 months. However, in the evaluations made one year after the completion of the treatment, the groups had different results only in the sleep quality index. Approaching fibromyalgia through Craniosacral therapy improves anxiety and quality of life in these patients. (Mataran – Panarrocha et. al., 2011)

Studies show that Craniosacral Therapy has been shown to be effective and safe in reducing the intensity of cervical pain and can improve quality of life for up to 3-6 months after the intervention (Haller et. al., 2016). Especially in chronic neck pain and recurrent pain, Craniosacral therapy can be a useful treatment option adding to standard treatment. (Stefanosky, 2019). The results described by patients treated with Craniosacral therapy included a reduction in anxiety, whereas the level of depression was influenced to a lesser extent. (Green, Martin, Bassett & Kazanjian, 1999)

Craniosacral Therapy has been shown to be effective and safe in reducing the intensity of cervical pain and can improve functional disability and quality of life up to 3-6 months after the intervention. (Haller et. al., 2016)

Methods

The study was carried out between September 2021 and February 2022, within our own office in Oradea, on a group of 30 subjects who presented with cervical pain from various causes. The subjects were randomly divided into two equal groups as follows: experimental group G1 – followed a program of 12 sessions of physiotherapy and Craniosacral therapy, the treatment period lasted 4 weeks; control group G2 followed a program of 12 sessions of physical therapy and therapeutic massage, the treatment lasted 4 weeks. The subjects were tested at the beginning of the treatment, at its completion and 3 months after the completion of the treatment, thus aiming at the long-term maintenance of the results obtained following the treatment applied for the monitored parameter. All subjects provided written consent and agreed to participate in this study by signing the Informed Subject Agreement.

For the assessment of the quality of life, was used the Questionnaire for the assessment of the level of quality of life (questionnaire adapted from Moret, Chwalow & Badudoin-Balleur, 1993).This is a self-administered questionnaire, which includes 12 questions targeting different aspects of daily activities, participation in social life and mental state. The 12 questions each have 4 answers. The score is made as follows: not at all – 0 points; little - 1 point; how much – 2 points; a lot – 3 points. To achieve the final score, the number of points assigned to each question is added, depending on the answer given by the examined subject. The minimum value is 0, representing the lowest level of quality of life, and the maximum value is 36 points, representing the highest level of quality of life felt by the subject at the time of testing.

Research samples

The subjects of the study were 30. The age of the subjects was between 35 and 55 years. (Table 1). Experimental group G1 consisted of 15 subjects, with an average age of 43.93 ± 7.26 years (val. min. 35, val. max. 55 years) who presented with cervical pain caused in 40% of cases of cervical discopathy (no6), 26.7% of cases of disc herniation (no4), 33.3% of cases of cervical spondylosis (no5), with an average duration of the condition of ~3 years (val. min. 1 year/val max 7 years) Of these 60% are women (no9) and 40% men (no6). The subjects' area of origin was 86.6% urban (no13), 13.3% rural (no2). The control group G2 consisted of 15 subjects, with a mean age of 43.07 ± 6.30 years (val. min. 35, val. max. 55 years) who presented with cervical pain caused in 26.7 % of cases of cervical discopathy (no4), 40% of cases of disc herniation (no6), 33.3% of cases of cervical spondylosis (no5), with an average duration of the condition of ~3 years (val. min. 1 year/max 8 years) Of these 60% are women (no9) and 40% men (no6). The subjects' area of origin was 86.7% urban (no13), 13.3% rural (no2).

Statistical analysis

The analysis and interpretation of the data was performed with the help of the statistical program SPSS.15.0.0. To conduct the analysis of variance, the following were used:

- Paired samples t-test to compare the means of the initial and final results of the experimental group and those of the control group
- Independent samples t-test to compare the means of the final results between the experimental and the control group
- One-Way ANOVA test with repeated measures for paired samples to compare the means of the initial, final and follow-up results of the experimental and control group
- The t-test for independent samples to be able to compare the means of the final and follow-up results between the experimental group and the control group.

Table 1. Characteristics of the subjects

No. crt.	Characteristics of the subjects	Group	N	mean±ab.std	value. Min	value. max
1.	Age of subjects	G1	15	49,93±7,26	35	55
2.	Duration of illness			3,00±1,92	1	7
3.	Age of subjects	G2	15	43,07±6,30	35	55
4.	Duration of illness			2,93 ±1,94	1	8

Results

When comparing the averages of the initial and final results obtained in the evaluation of the quality of life in the subjects of the experimental group G1, it is observed that initially, the average of the quality of life was 14.40±2.58 points, (min. value 11, max. value 20).

At the final assessment, the average quality of life increased by 28.40±3.92 points, (min. value 20, max. value 34). Thus, a significant difference [t = -18.8, diff = 14, p = 0.000] was observed between the level of quality of life felt at the initial assessment and that felt at the final assessment, which increased on average by 14 points. (Figure 1)

We can affirm that the therapeutic program comprising physical therapy and Craniosacral therapy is effective in increasing the quality of life experienced by the experimental group.

Figure 2 shows a comparison of the averages of the initial, final and follow-up results obtained in the evaluation of the quality of life in the subjects of experimental group G1. It is noted that initially, the average quality of life was 14.40 points (min. wave 11, max. wave 20).

At the final assessment, the average quality of life increased to 28.40 points (min. value 20, max. value 34), and at the test 3 months after the end of the treatment, the average quality of life was 27.8 points (min wave 21, max wave 32). Thus, a significant evolution was observed [F(1,29) = 5.92; p = 0.000] between the level of quality of life felt at the initial assessment and that felt at the final assessment and at the follow-up assessment.

In conclusion, we can state that the therapeutic program comprising physical therapy and Craniosacral therapy is effective in increasing the level of quality of life felt by the experimental group and was maintained at a good level during the follow-up evaluation.

Table 2. Values obtained during the pre-test/post-test evaluation (experimental group G1 – 15 subjects)

No.	The evaluated parameter	mean±ab.std	Value min.	value max.	p ≤ 0,05
1.	Quality of life pretest	14,40±2,58	11	20	
2.	Quality of life post-test	28,40±3,92	20	34	**p = 0,000**
3.	Quality of life follow-up	27,80±3,55	21	32	

*Correlations are significant for p<0.05.

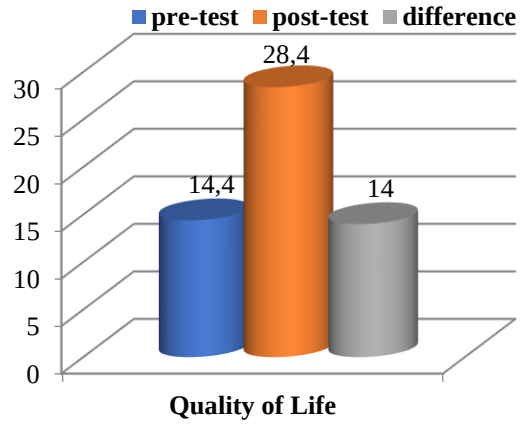

Figure 1. Comparison of the pretest/posttest means of the evaluation of quality of life (experimental group G1)

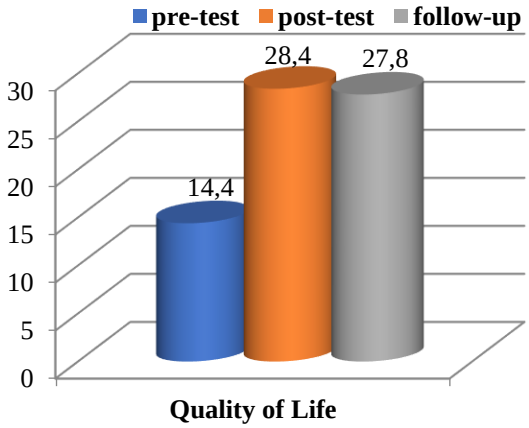

Figure 2. Comparison of the pretest/posttest and follow-up means of the results of the quality of life assessment (experimental group G1)

Table 3 includes the results of the initial, final and follow-up evaluations for the quality of life of the subjects in the G2 control group (subjects who received physical therapy and therapeutic massage).

Figure 3 shows a comparison of the averages of the initial and final results obtained in the evaluation of the quality of life in the subjects of the control group G2. It is observed that initially, the average quality of life was 15.40±2.53 points, (wave min. 11, wave max. 19). At the final evaluation, the average quality of life increased by 24.33±2.76 points, (min. value 19, max. value 28). Thus, a difference of [t = -23.27, diff = 14, p = 0.000] is observed between the level of quality of life felt at the initial assessment compared to that felt at the final assessment, which increases on average by 9 points.

We can state that the therapeutic program comprising physical therapy and massage is effective in increasing the level of quality of life experienced by the control group.

Figure 4 shows the comparison of the averages of the initial, final and follow-up results obtained in the evaluation of the quality of life in the subjects of the G2 control group. It can be observed that initially, the average quality of life was 15.40 points (wave min. 11, wave max. 19).

At the final assessment, the average quality of life increased by 24.33 points, (min. value 19, max. value 28), and at the test 3 months after the completion of the treatment, the average quality of life was 21.13 points (val. min 16, max 25). Thus, a significant evolution was observed [F(1,29) = 53,53; p = 0.000] between the level of quality of life felt at the initial assessment compared to that felt at the final assessment and at the follow-up assessment.

In conclusion, we can state that the therapeutic program comprising physical therapy and therapeutic massage is effective in increasing the level of quality of life felt by the control group and that the values obtained after the treatment were maintained at a satisfactory level 3 months after the end of the treatment.

Table 3. Values obtained during the pretest/posttest evaluation (control group G2 – 15 subjects)

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No.	The evaluated parameter	mean±ab.std	the value min.	the value max.	p ≤ 0,05
1.	Quality of life pretest	15,40±2,53	11	19	
2.	Quality of life post-test	24,33±2,76	19	28	**p =0,000**
3.	Quality of life follow-up	21,13±2,35	16	25	

*Correlations are significant for p<0.05.

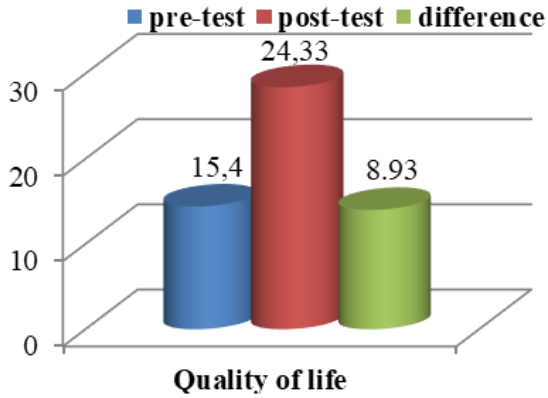

Figure 3. Comparison of pretest/post-test means of the results of the quality-of-life assessment (control group G2)

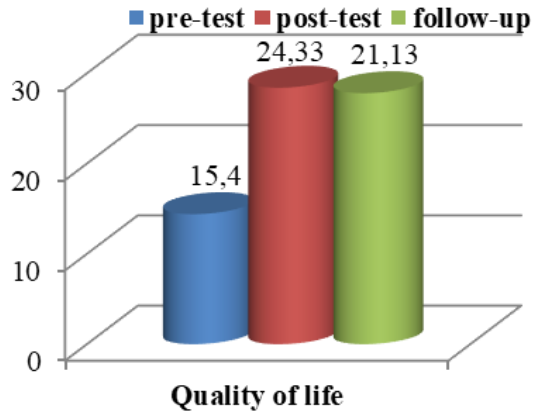

Figure 4. Comparison of pretest/post-test and follow-up means of the results of the quality-of-life assessment (control group G2)

Discussions

Comparing the results obtained by us with the results of other specialized scientific studies, we believe that it has been demonstrated the effectiveness of using Craniosacral therapy in increasing the quality of life of patients with cervical pain. The beneficial influence of Craniosacral therapy can be clearly determined, especially in the case of central nervous system disorders. According to Upledger (2018), craniosacral therapy produces a decrease in stress or tension, a strengthening of the body's vital functions, and an improvement in the patient's general condition. Craniosacral therapy has been shown to be effective and safe in reducing the intensity of cervical pain and can improve functional disability and quality of life up to 3-6 months after the intervention. Especially in chronic neck pain and recurrent pain, craniosacral therapy can be a useful treatment option that can be added to standard medical care. Further studies with rigorous methodological design and long-term follow-up are needed to confirm the effectiveness of Craniosacral therapy for treating neck pain. (Haller et al. 2016). The effectiveness of the use of craniosacral therapy in the case of cervical pain has been demonstrated on the basis of scientific studies. In 2016, a study was published in the specialized magazine "Clinical Journal of Pain" from the United States of America in which 54 patients with cervical pain of various causes participated and other problems associated with these pains (headaches, migraines, paresthesias in the arms, pain in the shoulders). The patients were divided into two groups. The first group of patients was treated with craniosacral therapy, and the second group underwent fictitious therapy procedures. The experiment lasted 20 weeks. After eight weeks, patients treated with craniosacral therapy reported a reduction in pain intensity and associated problems. At the end of 20 weeks, 78% of patients reported a considerable reduction in pain, and 48% of them also reported substantial clinical benefit. Thus, large differences were found reported at the end of the 20 weeks between patients treated with craniosacral therapy and those treated sham. Patients treated with craniosacral therapy have reported an improvement in the quality of life, a considerable reduction in pain during movement, a reduction in anxiety, an improvement in the quality of sleep,

and an overall improvement in mental state. It is also very important to state that no participant in this scientific study reported any adverse effects to the craniosacral therapy. (Haller, Lauche, Sundberg, Dobos & Cramer, 2019)

Conclusions

The initial results compared to the results obtained at the end of the 4-week treatment, applied to the two groups of subjects, the experimental group G1 and the control group G2, in which all subjects benefited from a total of 24 therapy sessions, 12 sessions of physical therapy and 12 sessions of CranioSacral therapy (G1) or 12 sessions of physical therapy and 12 sessions of massage (G2) demonstrate that: In experimental group G1:

- initial evaluation: the level of satisfaction of the quality of life had an average of 14.40±2.58 points (out of a maximum of 36) which means that the level of satisfaction of the subjects in terms of the ability to appreciate pleasure, to be in the company of children or friends, to enjoy your free time with your favorite activities was quite low.
- the final evaluation of the level of satisfaction of the quality of life that was carried out at the end of the treatment, after the 24 therapy sessions, the level of satisfaction of the quality of life increased to an average of 28.40±3.92 points which means that the level of satisfaction of the subjects increased significantly, they were able to enjoy more the free time spent with their loved ones or their hobbies.

In the control group G2:

- initial evaluation: the level of satisfaction of the quality of life had an average of 15.40±2.53 points (out of a maximum of 36) which means that the level of satisfaction of the subjects in terms of the ability to appreciate pleasure, to be in the company of children or friends, to enjoy your free time with your favorite activities was quite low.
- the final assessment of the level of satisfaction of the quality of life that was carried out at the end of the treatment, the level of satisfaction of the quality of life increased to an average of 24.33±2.76 points which means that the level of satisfaction of the subjects increased quite for a little while.

If initially the two experimental groups G1 and control G2 started on average from similar values for all the parameters considered, at the end of the treatment the subjects of the experimental group who benefited from Craniosacral therapy had a higher level of satisfaction with the quality of life than control group subjects.

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