

**CHRONIC LUMBAR  
PAIN TREATMENT,  
COMPARING  
MYOFASCIAL RELEASE  
METHODS  
AND KINESIO TAPING**

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**Abstract: Introduction:** Low back pain is considered a major public health problem, as it is responsible for the drop in the individual's work performance, limitation in performing activities of daily living and decreased quality of life. **Goals:** Check whether Kinesio Taping and myofascial release techniques are effective in reducing low back pain, comparing the effects that both provide and analyzing whether there is an advantage of any technique over the other, as well as demystifying the use of Kinesio Taping and placebo effect. **Method:** Experimental analytical research, with 27 volunteers who had chronic low back pain, with no specific cause, aged between 20 and 62 years. All selected individuals, at the beginning of the research and at the end, were evaluated with the Milgram test, modified Schober and Visual Analogue Scale (VAS). Participants were randomly divided into two groups, the LM Group, received treatment with myofascial release in the lumbar region, and the other group called KT, had the application of the Kinesio Taping technique in the lumbar region as an intervention. **Results:** The mean pain level in the KT group was initially 5.9 ( $\pm 2.330$ ) and at the end it was 1.9 ( $\pm 2.024$ ), with  $p=0.007$ . In the LM group, initial 7.125 ( $\pm 2.587$ ), and final 2.75 ( $\pm 2.915$ ),  $p=0.0067$ . Comparing the results between groups, initial  $p=0.3146$  and final,  $p=0.4969$ . Milgram's test was 60% positive in the KT group and 87.5% in the LM group, at the end 20% in the KT and 37.5% in the LM. The Schober test in KT showed improvement in the mobility of the participants' spine, at the beginning of the study, 40% of the volunteers in this group had reduced mobility and at the end, only 20%, in the LM, 12.5% of the participants remained with reduced mobility. Reduced mobility from the beginning to the end of the study. **Conclusion:** Both methods proved to be

effective, and none of the techniques showed superiority over the other, probably due to the low and of the research, and precisely for this reason, it is difficult to say whether the positive results obtained by Kinesio Taping are due to effectiveness of the technique or by a placebo action.

**Keywords:** Chronic low back pain. Treatment. *Kinesio Taping*.

## INTRODUCTION

Low back pain is present in a large part of the world population, being the most common musculoskeletal pain, however, without a defined cause and, consequently, without a specific treatment. It is considered a major public health problem, as it is responsible for the drop in the individual's work performance, limitation in carrying out activities of daily living, for example: cleaning the house and lifting a heavier object, antalgic postures aiming to reduce pain. Therefore, low back pain causes poor posture and favors the appearance of other dysfunctions. These factors together result in a decrease in the patient's quality of life, both physical and psychological (RIBEIRO et al., 2018).

The lumbar vertebrae are the ones that receive the greatest weight load, as they are positioned in the lower part of the trunk and due to this, they are more prone to disc herniations, nerve compression and spondylolisthesis, generating pain and there is a need for special attention to this spine region to avoid more serious pathologies (AY, 2017).

According to the INSS, in 2017, low back pain was responsible for 83,800 cases of sickness benefits, generating economic and personal losses to individuals, who, because they are unable to perform their paid activity, cannot offer their family a greater comfort and financial stability, feeling devalued before them and society, resulting in emotional

problems. (RIBEIRO et al., 2018).

Kinesio Taping is a method of treatment for muscle pain, developed by Japanese chiropractor Kenso Kase, which consists of applying adhesive elastic bandages over the pain site. It can be extended up to 140% of its original size (MACEDO et al, 2018). The mechanism of functioning is based on the idea that the bandage elevates the skin, decreasing the stimuli of mechanoreceptors in the muscle, which decreases the pain information sent to the cortex, inhibiting the nociceptors resulting in the reduction of pain (PARREIRA, 2013). The bandage also has the benefits of increasing blood and lymphatic vascular flow at the application site, normalizing muscle function and correcting possible joint misalignments. Although, none of these advantages has been scientifically proven (SANCHÉZ et al, 2012).

Júnior et al (2015) and Parreira et al (2014), argue that the bandage does not offer any physiological effect, it only works as a placebo treatment for patients who trust the technique because they see high-level athletes from all over the world using the tapes in different situations. body locations. Fact that occurred for the first time at the Beijing Olympic Games, in China, in 2008. Sheng et al (2019) in turn, describe that the bandage associated with other therapeutic resources, potentiated the positive effects compared to the group that was treated without using the bandage.

In turn, myofascial release consists of the relaxation of the muscle fascia, so that the necessary slip of the same over the muscle occurs during the contraction and relaxation of the fibers (STECCO; SCHLEIP, 2016). Fascia is innervated by the autonomic nervous system; composed of smooth muscle cells, collagen, fibroblasts and has several receptors, such as: OTG (Golgi Tendinous Organ), Pacin, Rufini and free nerve endings, which interpret information from our body even before the brain. The fascial tissue is always

in motion, together with the body, if it has any restrictions, it will reflect on limitations in the body (BORDONI; LINTONBON; MORABITO, 2018). If the fascia does not effectively dissociate from the muscle during movement, it causes local pain, limitation of movement due to adhesion between the tissues involved, and even muscle shortening. The technique can be applied manually or instrumentally, the latter when tools are used to carry out the work. It is a resource widely used in physiotherapy sessions for various pathologies and dysfunctions (SOUZA; MEIJA, 2006).

This way, this research aims to verify if the Kinesio Taping and myofascial release techniques are effective in reducing low back pain, comparing the effects that both provide and analyzing whether there is an advantage of some technique over the other, as well as demystifying about the use of Kinesio Taping and placebo effect.

## METHOD

This study corresponds to the Scientific Initiation and Research Project of the Padre Anchieta University Center. It is classified with experimental analytical research that was carried out with 27 people who had chronic low back pain, without a specific cause, aged between 20 and 62 years, recruited through social media (Facebook and Instagram). The research project was previously approved by the Ethics Committee under the number CAAE: 12912719.5.0000.5386.

All participants were informed about the risks and benefits of the methods applied and signed the Free and Informed Consent Form (FICT). The sessions lasted about 20 minutes and were held in the laboratory of the Centro Universitário Padre Anchieta.

Inclusion criteria were people with chronic low back pain for at least 6 weeks, who did not have a specific pathology diagnosed that

could generate pain, and who did not have knowledge about the techniques that would be applied. Persistent pain for less than 6 weeks was considered an exclusion factor, having already been treated with one of the techniques, skin wounds, pregnant women, and cognitive difficulties in understanding.

In the first session, a brief assessment was performed, starting with palpation of the vertebrae and adjacent structures to identify possible Musculo skeletal changes, such as muscle tension. Pain intensity was then evaluated using the Visual Analogue Scale (VAS). The Milgram test was used to identify pain in the lumbar spine derived from increased pressure in the intrathecal region, and the Schober test to assess spinal mobility. A visual inspection was performed to find possible bruises or wounds in the region (in this case, the volunteer was excluded from the research).

Participants were randomly divided into two groups, the LM Group received treatment with myofascial release and the other group called KT had the application of the Kinesio Taping technique as an intervention. Data analysis was performed using the GraphPad InStat Demo program, with t-test for intergroups (i.e., before and after the same group) and unpaired Welch corrected t-test for between groups (i.e., between groups of different interventions), with the proposal to respond to the objectives of this study, after all data to be posted in Excel Microsoft Windows10.

## RESULTS AND DISCUSSIONS

27 volunteers participated in the study; however, 9 subjects were excluded from the study, 7 due to interruption of treatment due to the COVID-19 pandemic and 2 (from the myofascial release group) due to absences on the proposed treatment days. Thus, 8 volunteers in the myofascial release group and

10 participants in the Kinesio Taping group took part in the research.

In the Kinesio Taping group, 5 participants were men (50%) and 5 were women (50%), with a mean age of 35.8 years ( $\pm 14,112$ ). It was observed that 60% of the volunteers in this group did not practice any type of physical activity, and 30% claimed to use medication on days of more intense pain.

In the myofascial release group, 7 participants were female (87.5%) and only 1 was male (12.5%) with a mean age of 41.125 years ( $\pm 18.23$ ). It was observed that 75% of the members of this group do not practice any type of physical activity, and 50% of the participants claimed to use medication to reduce pain on very intense days.

(It is noteworthy that there was no interference or control by the researchers regarding the use of mediation, or guidance regarding physical activity.)

The Milgram test presents a positive result when there is any intra or extrathecal pathology. This type of pathology causes an increase in pressure in the tissue surrounding the spinal cord and at the time the test is performed, this pressure is exacerbated causing pain and inability to maintain the position (Hoppenfeld, 2004). Despite the test being proposed to identify this particular type of pathology, 13 volunteers tested positive before the start of the intervention, and only 2 of them reported having a herniated lumbar disc, which raises doubts about the specificity of the test. At the end of the interventions, the test showed a significant reduction in the positive result in both groups, making it possible to conclude that the methods are being effective in the treatment of chronic low back pain.

The Schober test showed a reduction in the number of people with reduced mobility of the lumbar spine in the Kinesio Taping group, after treatment. However, it cannot

be said that the bandage is better than myofascial release for increasing mobility, since in the myofascial release group there were only 1 patient (12.5%) at the beginning of the research with reduced mobility and who remained at the end, as shown in tables 1 and 2 below.

When analyzing the pain level of the study groups, it was found that the average pain before the interventions in Kinesio Taping volunteers, measured by the VAS scale, was 5.9 ( $\pm 2.330$ ) and at the end of the research it was 1.9 ( $\pm 2.024$ ) with  $p = 0.007$ . In graph 1 below, it is possible to visualize the score of each volunteer during the survey.

In the group of volunteers who received myofascial release, the mean pain on the initial VAS scale was 7.125 ( $\pm 2.587$ ), and at the end it was 2.75 ( $\pm 2.915$ ),  $p = 0.0067$ . In graph 2 below, it is possible to visualize the score of each volunteer during the survey. Thus, it appears that both techniques were effective in reducing patient's pain.

Comparing the results of pain, before the treatment of the two groups, a value of  $p=0.3146$  was found (that is, without significance) and at the end of the treatment, the value was of  $p=0.4969$  (that is, without meaningfulness). These data demonstrate that the pain levels of the volunteers of the two groups at the beginning of the treatment were very similar, allowing greater reliability in the results, and at the end of the intervention they remained close, allowing the conclusion that no technique was superior to the other.

Muscle fascia has a complex histology with many components, including a base substance or gel and a fibrous structure that maintains fascial tension. The fascia contracts at all times to accompany the movements of the muscles and the body, and if there is a place where this contraction and slippage of the fascia is restricted, it will harm the individual. Myofascial release is one of the techniques

capable of releasing these restrictions and promoting improvement in function, mobility, and pain in the long term, providing a better quality of life for the patient (BORDONI; LINTONBON; MORABITO; 2018).

Kinesio Taping has its effects contested by the literature, Sánchez et al (2012) obtained little remarkable results of pain improvement in the treatment of patients with chronic low back pain. Pain reduction was greater in the group that used the *Kinesio Taping* compared to the other group that used a placebo. However, the effects remained in the short term, disappearing after 4 weeks of the intervention. There was minimal improvement in pain and muscle resistance, however, the kinesiophobia assessed at the beginning, remained until the end of the intervention.

Nemitalla (2016) in turn, argues in her study that Kinesio Taping does not offer any advantage over spine exercises, as the group that did exercises only and the group that did exercises associated with the application of the tape had equal results.

## FINAL CONSIDERATIONS

Both methods are effective in the treatment of chronic low back pain, demonstrated by the Milgram test, Schober and the VAS scale. However, none of the techniques showed superiority over the other, probably due to the low  $n$  of the research, and precisely for this reason, it is difficult to say that if the positive results obtained by *Kinesio Taping* are due to the effectiveness of the technique or a placebo action. Therefore, we suggest further research with the techniques used here, as well as a third group in which the two methods could be applied simultaneously to verify potential in the final result of the treatment.

## CONFLICT OF INTEREST

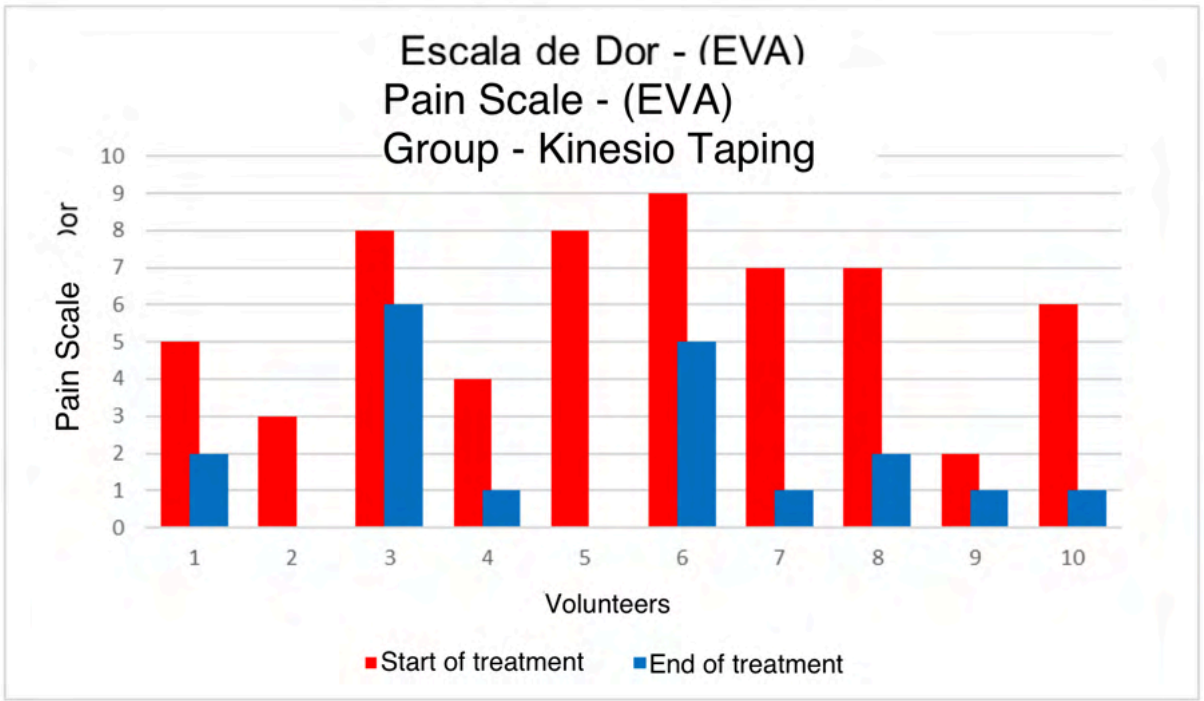
The authors declare no conflict of interest.

Kinesio Taping	Milgram Test		Schober Test	
	Positive	Negative	Reduced mobilization	Normal Mobilization
	60%	40%	40%	60%
	Milgram Test		Schober Test	
	Positive	Negative	Reduced mobilization	Normal Mobilization
	20%	80%	20%	80%

Table 1 - Results of pre- and post-treatment tests with *Kinesio Taping*.  
 Subtitle: Upper part of the pre-treatment table, lower part after treatment.  
 Source: Prepared by the author.

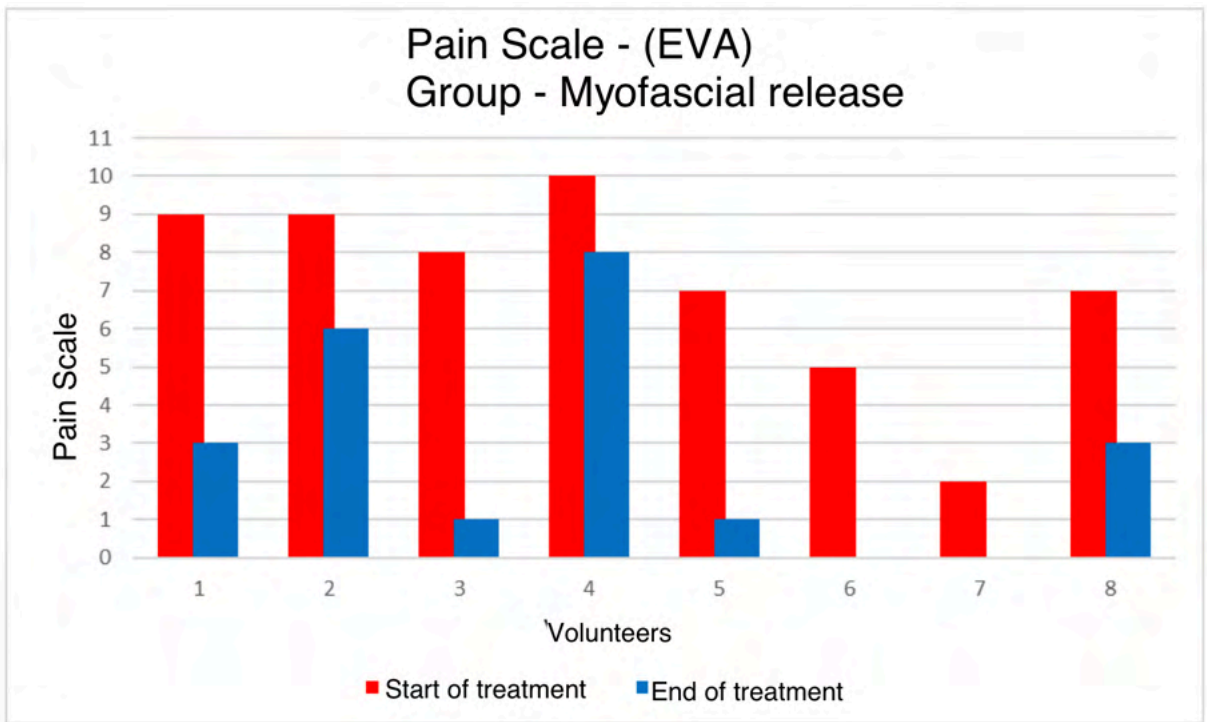
Myofascial release	Milgram Test		Schober Test	
	Positive	Negative	Reduced Mobilization	Normal Mobilization
	87,5%	12,5%	12,5%	87,5%
	Milgram Test		Schober Test	
	Positive	Negative	Reduced Mobilization	Normal Mobilization
	37,5%	62,5%	12,5%	87,5%

Table 2 - Results of pre- and post-treatment tests with myofascial release.  
 Caption: Upper part of the pre-treatment table, lower part after treatment.  
 Source: Prepared by the author.



Graph 1 - Pain score, before and after treatment with *Kinesio Taping*.

Source: Developed by the author.



Graph 2 - Pain score, before and after treatment with myofascial release.

Source: Developed by the author.

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