55 - IMMEDIATE EFFECT OF MYOFASCIAL MANIPULATION IN HAMSTRING MUSCLE STRENGTH OF YOUNG WOMEN

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INTRODUCTION

The fascias are composed of tissues derived from embryonic mesoderm and can be divided into two types: superficial and deep (DANTE, 2003). The first is a three-dimensional structure formed by fibroelastic tissue, collagen fibers and variable amounts of fat (STECCO et al, 2007; DANTE, 2003). Its function is increase the mobility of the skin, operate as a thermal insulator and store energy for metabolic use (DANTE, 2003).

The deep fascia or myofascial appears as a dense connective tissue layer surrounding muscles, and also each fiber bundle and each muscle cell individual. This tissue is closely related to muscle and is continuous with the epimísio, perimysium and endomysium (LIPTAN, 2010) passes between the muscle groups and serves to compartmentalize them and also facilitates movement providing mobility and stability to the musculoskeletal system (DANTE, 2003).

The myofascial is the liaison between the various muscle groups. Myofascial connections create an anatomical continuity between the muscles involved in that movement. The fascia can capture and convey the tension produced by a muscle (STECCO et al, 2009).

Muscular activity make the fascia aswers to mechancial stimuli, and these, in excess, can cause a change in the structure of the extracellular matrix, which results in a change of mechanical properties of dense connective tissue (D'SOUZA; PATEL, 1999). The continuous repetition of the same movement can cause densification of the muscle fascia, thereby altering the efficiency of muscle contraction (STECCO, 2002). The fascia, since it is a plastical and maleable tissue capable to adjust itself to mechanical, termical and methabolic stress, can eventually be restaured to its phisiological conditions thru treatament by external manipulation. (SCHLEIP, 2003).

Myofascial manipulation promotes a change in the regulation of tone of the motor unit associated this tissue (SCHLEIP, 2003). There are techniques several for manipulating the fascia as: deep pressure, vibration, friction, stripping, muscle power, jostling, rocking, draw, shaking, flopping (DIXON, 2007) and Fascial Manipulation © (STECCO, 2002). But there are few scientific studies on the effects of these (SAZ-LLAMOSAS et al., 2009), being necessary new research is in this area.

In Fascial Manipulation © there is a map of more than one hundred points fascial that when treated properly, can restore tension balance. The fascial system is first divided into myofascial units (UMFs), each UMF is composed of the motor unit involved to move a segment in a specific direction and of the fascia that holds all of these forces or vectors.

The simple movements of body segments, are governed by six UMFs, responsible for movements in the sagittal, frontal and horizontal plans. The forces generated by the UMF are converging on a point called the coordination center (CC), each one has a precise anatomical location on the fascia. If the fascia in this specific area is changed or densified, then the UMF contracts irregularly resulting in a non-physiological joint movement correspondent. This can cause pain that will be perceived by the patient at the center of perception (CP), thus for each UMF there is a CP described (Pedrelli; Stecco; DAY, 2009).

In carrying out the manipulation, the therapist performs a deep friction in CC. This should act on the point for a period of time sufficient to convert the friction on the roughness of fascia into heat. The heat will change the consistency of ground substance and will initiate an inflammatory process. With the technique, the fibronectin network that prevented normal operation of the CC, will be removed and the repair process will recreate the physiological elasticity (Stecco, 2002).

The technique is based on the use of the elbow or the interphalangeal joints. The manipulation must create a friction or a stretch against the roughness of the fascia, and this happens when there is adhesion between the skin of the patient and therapist and allowing the friction reaches the fascia (Stecco, 2002). It is hypothesized that myofascial manipulation to improve the performance of the fascia in forward the muscular strength.

The aim of this study was to determine the immediate effect of the Fascial Manipulation © technique hamstring muscle strength in young women.

MATERIALS AND METHODS

The study was approved by the Ethics in Human Research Committee of the Universidade Estadual do Oeste do Paraná (Unioeste) under the protocol 558/269-CEP.

We conducted an analytical study, interventional, randomized clinical trial of using a convenience sample.The population was composed of Unioeste - Cascavel campus academic, who were informed about the study and invited informally to participate. The study was conducted at the Laboratório de Estudo de Lesões e de Recursos Terapêuticos of UNIOESTE. All participants were informed of the objectives of the study and signed a consent expiry before admission in the experiment.

Were included in this study, healthy women, aged between 17 and 25 who had a hamstring contraction, ie, restriction in ROM of up to 160 ° adjustable flat, following the model of Brazilian, Farias and Queiroz (2007) (considering 180 ° full extension) and that did not change your routine physical activity. Exclusion criteria were: circulatory disease or rheumatic disease, chronic back pain, joint hypermobility, ligamentous laxity, previous joint injury or muscle in the legs or in the intervening period, surgical repair of knee, ankle and hip and also provide mass index body above 24.9 kg / m², which was calculated using the formula BMI = weight / height ² according to ABESO (2007). Thus, we selected 34 academic, and two were excluded for having a ligament injury and meniscal advance on his legs and another for having a body mass index above 24.9 kg / m². Therefore the study sample consisted of 32 participants who, by lot, were divided into two groups: intervention group (GI) n = 16 and sham group (GS) n = 16. Initially, both groups participated in the evaluation protocol, later passed by the GI and GS intervention protocol by protocol simulation, then the two were reassessed.

REVIEWS PROTOCOL

Muscular strength reviews ratings for the two groups were carried out in two stages: pre-intervention, performed before the intervention (Av1) and post-intervention, performed immediately after the intervention (Av2).

The strength of the hamstring muscles was evaluated using a 200 kgf load cell, model SB 100 brand-RS CRM technology, which was fixed to the backrest by means of an iron hook and connected to the ankle of the participant, an ankle bracelet Adjustable leather.

The participant was instructed to sit on the sitting bones, with hips and knees at 90 degrees with the back straight and head aligned on a fixed table to the floor in front of the load cell. In this position the ankle was connected and adjusted to the right ankle of the participant. So, requested a maximal isometric strength for knee flexion for five seconds. During the five-second contraction was performed a voice command with the word "Force" every second contraction in the third and second the tone was increased and kept constant until the end. The load cell transmitting the signal to the system of collection of biological data Lynx EMG 1000 through the acquisition software of biological signals Aq 7:02 Lynx Data, and then it was noted when the maximum force was generated. The same procedure was repeated three times with a one-minute interval between one trial and another that there was no muscle fatigue during the test, between the peak and the average of three values were used for analysis. Repeated the protocol in the left leg.

INTERVENTION PROTOCOL

The technique used in GI after the AV1 was Fascial Manipulation ©. Were handled by four points described Stecca (2002): 1) buttocks (Gluteus Maximus muscle region on sacrotuberous), 2) mid-thigh region (between the semitendinosus muscle and long head of biceps femoral) 3) posterolateral region of the leg (between the lateral gastrocnemius muscle and soleus muscle), 4) the lateral foot (About Short Finger Flexor Low and muscle Abductor Pinky Finger in the region of the tuberosity of the fifth metatarsal).

The participant was positioned in prone on the stretcher, his arms along the body and legs and head in neutral position. The therapist performed the manipulation by contact with the elbow at point 1 and points 2, 3 and 4 was the contact with the dorsal surface of the middle phalanx of the index finger.

The manipulation is to perform a pressure associated with frictional movements (all directions) on the point of contact to be manipulated. According Stecca (2002) the skin of the elbow or finger of the therapist must adhere to patient's skin so that during handling, the subcutaneous tissue to move and allow the friction generated go directly to the fascia. The pressure used during the study was that the patient could bear. The time of one minute was adopted for the handling of each item, totaling four minutes of manipulation for each limb. After implementation of this protocol was performed a new evaluation (AV2).

SIMULACRUM PROTOCOL

The participants of the GS, after AV1, underwent treatment simulation that consisted of palpation, for a minute, in paragraphs 1, 2, 3 and 4 described above, which consisted of a light touch on the points. The subjects were positioned prone on a stretcher and the therapist started to palpation, participants were subsequently subjected to a new assessment (AV2). After the data collection the participants in this group were treated with the same technique for the GI.

STATISTICAL ANALYSIS

The results were expressed by descriptive statistics (mean and standard deviation) and analyzed by inferential statistics. The data were tested using the Kolmogorov-Smirnov normality. Then the parametric values were compared using paired Student t test for intragroup analysis and t test for unpaired for intergroup analysis. On comparing the nonparametric t test was used for paired for intragroup analysis and Mann-Whitney unpaired for intergroup analysis. In all tests the level of significance was 5%.

RESULTS

32 women with ages equal to 20,22 ± 2,11 years and a medium BMI of 21,18 ± 2,30 Kg/m2 participated in the study.

When analysing the peak muscular force, comparing Intervention Group AV1, which had a 16,79 ± 4,095 KgF mean, with Simulation Group's 17,08 ± 4,247 KgF mean, it was possible to note the sample's homogeniety since wasn't observerd any statistical significant difference p=0.7828 (figure 1).

When comparing AV1 with AV2 the GI showed a 16,79 ± 4,095 KgF mean which increased to 17.32 ± 3.692 KgF on AV2. However the GS had on AV1 a 17.08 ± 4.247 KgF mean which decreased to 16.83 ± 4.025 KgF on AV2. However in both groups wasn't found any statiscally significant difference, with p being equal to 0,1245 and 0.4757 fot GI and GS respectively (figure 1).

It was obeserved a difference of 17.32 ± 3.692 KgF and 16.83 ± 4.025 KgF between AV2 of GI and AV2 of GS respectively, however it wasn't statisticaly significant p=0,6134 (figure 1).

The mean muscular strength analysis showed similar behaviour, since it was possible to verify homegeniety in that sample comparing GI's AV1, which had a 15.66 ± 4.023 KgF mean, with GS's AV1 which had a 15.88 ± 4.322 kgf mean, not showing any statistica significant difference p=0,8349 (figure 2).

When comparing AV1 with AV2, GI showed 15.66 ± 4.023 KgF on AV1 and a increase to 16.25 ± 3.763 KgF on AV2. GS had a AV1 mean of 15.88 ± 4.322 KgF and AV2 a mean pf 15.76 ± 3.998 KgF. For Both groups the difference wasn't statisticaly signifcant with p values of 0.0943 on GI and 0.6875 on GS (figure 2).

The comparison between GI's AV2 and GS's AV2 showed a difference from 16,25 ± 3.763 KgF to 15,76 ± 3,998 KgF respctively however it wasn't statisticaly significant with p=0.6179 (figure 2)

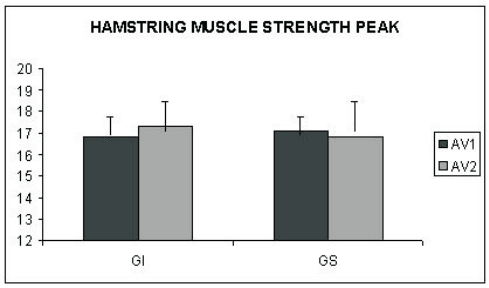

Figure 1: Values of the peak muscle strength observed for the intervention group (GI) and the simulation of treatment group (GS), in all periods.

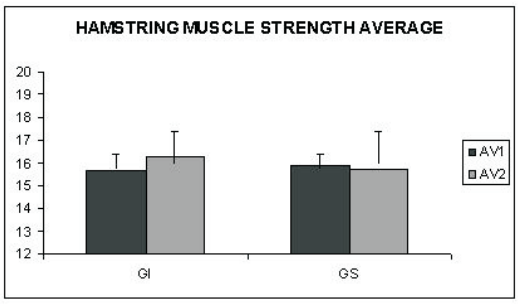

Figure 2: Values of the average muscle strength observed for the intervention group (GI) and the simulation of treatment group (GS), in all periods.

DISCUSSION

The results of this study showed no change statistically significantly in muscle strength immediately after application of the technique Fascial Manipulation ©.

The deep muscle fascia is the element that binds multiple muscle groups. Stecco (2002) describes models of myofascial connections that traverse the entire body. In the study, with corpses, held by Stecco et al. (2007) it was possible to perceive the existence of an anatomical continuity between all the flexor muscles of the upper limb through the fascia. These sequences are directly involved in myofascial movement organization, as well as the transmission of muscular strength. The connections create an anatomical continuity between the muscles involved in the same directional movement. This allows the fascia to perceive the tension produced by a muscle due to its expansion, and can transmit it from a distance, telling the distal muscle on the state of contraction of proximal muscles, possibly through the activation of muscle spindles (STECCO et al., 2007). In relation to the above, one function of fascia is to convey the strength, the second Stecco (2002) when the myofascial is treated, it performs its function better. Therefore, manipulation myofascial improve muscle strength, but this study the gain was not statistically significant.

The fascia has the same type of mechanoreceptors found in tendons, and it is assumed that they play a similar function, which is to provide a sensory feedback for muscle coordination and without it the motor coordination is significantly impaired. This system could be altered by a chronic increase fascial tone that can over time produce metabolic and physiological disadvantages (SCHLEIP; Klingler, LEHMANN-HORN, 2005). Some studies show that patients with chronic low back pain are less mechanoreceptors in his lumbar fascia, as well as worsening lumbopelvic proprioception and coordination (BEDNAR; ORR, SIMON, 1995; RADEBOLD et al. 2001). The participants of this study did not have chronic back pain, but after the technique was not statistically significant differences for strength gain obtained, this fact reinforces the hypothesis that other variables may influence decisively to gain strength muscle.

When the fascia has densification, which is the inability of the fascia to elongate and yield to the underlying tensions of the muscle fibers, its function is impaired (Stecca, 2002), so that tissue needs to be in good condition to play the best the function of transmitting to the muscular skeletal system. Schleip (2003) explains that external manipulation is able to return and restore the physiological conditions of the tissue.

The deep tissue therapies such as myofascial release, fascial influence the tone and thus can improve muscle strength (SCHLEIP; KLINGLER, LEHMANN-HORN, 2005). The myofascial release encourages intrafasciais mechanoreceptors, leading to an altered proprioceptive input to the central nervous system and results in a tone regulation of motor units associated with this tissue. The techniques are applied slowly and deeply primarily stimulate Ruffini organs which are capable of responding to high pressure tangential. Also, the autonomic nervous system in response to stimuli decreases sympathetic tone and promotes local vasodilatation (SCHLEIP, 2003). In this study we can see that external manipulation influenced performance in increasing muscle strength, as in the sham group was observed a reduction in muscle strength. Therefore, it is possible to combine the gain in muscle strength with external manipulation of the fascia, although the changes in muscle strength were not statistically significant.

The technique used in this study causes a local inflammation, and induce physiological movement then the collagen fibers to reorganize themselves along the lines of tension, and so there would be a healing point of densified and improve the function of fascia (Stecca, 2002 ; PEDRELI; Stecca; DAY, 2008). According Stecca (2002) in the first hours after application of the technique begins the inflammatory phase and deposition of collagen type III, and in the twenty successive days is the replacement of type III collagen by type I Therefore some time is required for proper tissue repair occurs, that literature brings to 24 to 72 hours (Starkey, 2001). This fact, which may have contributed to the gain in muscle strength obtained after the application of the technique has not reached levels of statistical significance as in the present study the evaluation of muscle strength was performed immediately after the manipulation.

CONCLUSION

Upon completion of this study, we determined that immediately after the application of the technique Fascial Manipulation © was no improvement in muscle strength of the hamstrings of young women, but not so statistically significant. Muscle strength, although not reaching statistical significance levels, behaved differently for the two groups, since it showed an increase in the group manipulated and a reduction in the unhandled group. It is suggested that further studies in order to evaluate the behavior of muscle strength in the hours after manipulation, with a view to possible influence of the inflammatory response in the results.

REFERENCES

1.**ASSOCIAÇÃO BRASILEIRA PARA O ESTUDO DA OBESIDADE E DA SÍNDROME METABÓLICA (ABESO).** Diretrizes Brasileiras de Obesidade. São Paulo, 2009.

2.BEDNAR, D. A.; ORR, F. W.; SIMON, G. T. **Observations on the pathomorphology of the thoracolumbar fascia in chronic mechanical back pain.** Spine, v. 20, n. 1, p. 1161-1164, 1995.

3.D'SOUZA, D.; PATEL, K. **Involvement of long and short range signalling during early tendon development.** Anatomy and Embryology, v. 200, n. 4, p. 367-375, 1999.

4.DANTO, B. J. **Review of integrated neuromusculoskeletal release and the novel application of a segmental anterior/posterior approach in the thoracic, lumbar, and sacral regions.** Journal of the American Osteopathic Association, v.103, n. 12, p. 58 -596, 2003.

5.DIXON, M. W. **Massagem miofascial.** Rio de Janeiro, RJ: Guanabara Koogan, 2007.

6.LIPTAN, G. L. **Fascia: A missing link in our understanding of the pathology of fibromyalgia.** Journal of Bodywork and Movement Therapies, v. 14, n. 1, p. 3-12, 2010.

7.PEDRELLI, A.; STECCO, C.; DAY, J. A. **Treating patellar tendinopathy with Fascial Manipulation.** Journal of Body work and Movement Therapies, v. 13, n. 1, p. 73–80, 2009.

8.RADEBOLD, A.; CHOLEWICKI, J.; POLZHOFER, G.; GREENE, H. **Impaired postural control in lumbar spine is associated with delayed muscle response times in patients with chronic idiopathic low back pain.** Spine, v. 26, n. 7, p. 724–730, 2001.

9.SAZ-LLAMOSAS, J. R.; FERNÁNDEZ-PÉNSZ, A. M.; FAJARDO-RODRÍGUEZ, M. F.; PILAT, A.; VALENZA-DEMET, G.; FEMÁNDEZ-DE-LAS-PEÑAS, C. **Changes in neck mobility and pressure pain threshold levels following a cervical myofascial induction technique in pain-free healthy subjects.** Journal of Manipulative and Physiological Therapeutics, v. 32, n. 5, p. 352-357, 2009.

10.SCHLEIP, R. **Fascial plasticity, a new neurobiological explanation.** Journal of Bodywork and Movement Therapy, v. 7, n. 1, p. 11-19, 2003.

11.SCHLEIP, R.; KLINGLER, W.; LEHMANN-HORN, F. **Active fascial contractility: Fascia may be able to contract in a smooth muscle-like manner and thereby influence musculoskeletal dynamics.** Medical Hypotheses, v. 65, n. 2, p. 273-277, 2005.

12.STARKEY, C. **Recursos Terapêuticos em Fisioterapia**. 2. ed. São Paulo: Editora Manole, 2001.

13.STECCO, A.; MACCHI, V.; STECCO, C.; PORZIONATO, A.; DAY, J. A.; DELMAS, V.; DE CARO, R. **Anatomical study of myofascial continuity in the anterior region of the upper limb.** Journal of Bodywork and Movement Therapies, v. 13, n. 1, p. 53-62, 2009.

14.STECCO, C.; GAGEY, O.; BELLONI, A.; POZZUOLI, A.; PORZIONATO, A.; MACCHI, V.; ALDEGHERI, R.; DE CARO, R.; DELMAS, V. **Anatomy of the deep fascia of the upper limb.** Second part: study of innervation. Morphologie, v. 91, n. 292, p. 38-43, 2007.

15.STECCO, L. **Manipolazione della fascia: per il trattamento delle affezioni muscoloscheletriche**. Padova: Piccin Nuova Libraria S.p.A., 2002.

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IMMEDIATE EFFECT OF MYOFASCIAL MANIPULATION IN HAMSTRING MUSCLE STRENGTH OF YOUNG WOMEN

ABSTRACT

Introduction: The fascia can be divided into two types: superficial and deep. The deep fascia or myofascial involves the muscles and can capture and convey the tension produced by them. The continuous repetition of the same movement can cause densification of muscle fascia, but the external manipulation can restore the physiological conditions that tissue. Objective: To determine the immediate effect of the Fascial Manipulation © technique in hamstring muscle strength in young women. Materials and Methods: We conducted an analytical study, interventional, randomized clinical trial using a convenient sample, the variable studied was the hamstring muscle strength. The participants were randomly divided into two groups: intervention group (GI) and simulation of treatment group (GS). Initially both groups participted in the evaluation protocol, subsequently the GI went thru the intervention protocol and the GS thru the simulation protocol and then both were reassessed. Results: The study included 32 women. The GI showed an improvement in muscle strength and GS showed a reduction in muscle strength, but changes were not statistically significant for both groups. Discussion: The myofascial, when treated, is able to better perform its function. Therefore, myofascial manipulation would improve muscle strength. In this study we observed improvement but not significant statistically. Conclusion: It was a striking improvement of muscle strength immediately after application of the Fascial Manipulation© technique on young women, but not statistically significant.

KEYWORDS: Fascia, Physical Therapy, Muscle Strength.

EFFET IMMEDIAT DE MANIPULATION MYOFASCIAL EN VIGUEUR DES MUSCLES ISCHIOJAMBIERS DES JEUNES FEMMES

RÉSUMÉ

Introduction: Le fascia peut être divisé en deux types: fascia superficiel et profond, profond, myofasciales, ou implique les muscles et peut capturer et de transmettre la tension produite par eux. La répétition continue du même mouvement peut causer densification des fascias musculaires, mais la manipulation externe peut rétablir les conditions physiologiques des tissus. Objectif: Pour déterminer l'effet immédiat de la technique © Fascial Manipulation ischio-jambiers de la force musculaire chez les jeunes femmes. Matériels et Méthodes: Nous avons mené une étude analytique, d'intervention, essai clinique randomisé de l'aide d'un échantillon de commodité, la variable étudiée a été la force des muscles ischio-jambiers. Les participants ont été divisés au hasard en deux groupes: le groupe d'intervention (GI) et groupe témoin (GS). Début, les deux groupes ont participé dans le protocole d'évaluation, par la suite adoptée par le GI et le protocole d'intervention par GS simulacre de protocole, puis les deux ont été réévalués. Résultats: L'étude a inclus 32 femmes, le GI ont connu une amélioration de la force musculaire et le GS a montré une réduction de la force musculaire, mais les changements n'étaient pas statistiquement significatives pour les deux groupes. Discussion: La myofascial lorsqu'ils sont traités, mieux remplir sa fonction. Par conséquent, la manipulation myofascial améliorer la force musculaire, observé dans cette étude a été une amélioration, mais pas statistiquement significative. Conclusion: Il s'agissait d'une amélioration remarquable de la force musculaire immédiatement après l'application de la technique © Fascial manipulation sur les jeunes femmes, mais pas statistiquement significative.

MOTS-CLÉS: Fascia, Physiothérapie, Force Musculaire.

EFECTO INMEDIATO DE MANIPULACIÓN MIOFASCIAL EN VIGOR DE LOS MUSCLES ISQUIOTIBIALES DE MUJERES JÓVENES

RESUMEN

Introducción: La fascia se puede dividir en dos tipos: la fascia superficial y profunda, la profunda, o miofascia, involucra los músculos y puede capturar y transmitir la tensión producida por ellos. La continua repetición del mismo movimiento puede causar la densificación de la fascia del músculo, pero la manipulación externa puede restaurar las condiciones fisiológicas que el tejido. Objetivo: Determinar el efecto inmediato de la técnica de Fascial Manipulation© en la fuerza muscular de mujeres jóvenes. Materiales y Métodos: Se realizó un estudio analítico de intervención, ensayo clínico aleatorio del uso de una muestra de conveniencia, la variable estudiada fue la fuerza de los músculos isquiotibiales. Los participantes fueron divididos aleatoriamente en dos grupos: grupo intervención (GI) y el grupo de tratamiento simulado (GS). Inicialmente, ambos grupos participaron en el protocolo de evaluación, posteriormente el GI pasó por un protocolo de intervención y el GS per lo protocolo de simulación y después los dos fueron reevaluados. Resultados: El estudio incluyó a 32 mujeres, el GI mostró una mejora en la fuerza muscular y el GS mostró una reducción en la fuerza muscular, pero los cambios no fueron estadísticamente significativos para ambos grupos. Discusión: La fascia cuando se trata, mejor realiza su función. Por lo tanto, la manipulación miofascial mejorar la fuerza muscular, observada en este estudio, pero no estadísticamente significativa. Conclusión: Fue una mejora notable de la fuerza muscular después de la aplicación de la técnica de manipulación fascial © en las mujeres jóvenes, pero no es estadísticamente significativo.

PALABRAS CLAVE: Fascia, Terapia Física, Fuerza Muscular.

EFEITO IMEDIATO DA MANIPULAÇÃO MIOFASCIAL NA FORÇA MUSCULAR DOS ISQUIOTIBIAIS DE MULHERES JOVENS

RESUMO

Introdução: As fáscias podem ser divididas em dois tipos: superficial e profunda, a fáscia profunda, ou miofáscia, envolve os músculos e pode captar e transmitir a tensão produzida por eles. A repetição contínua de um mesmo movimento pode causar densificação da fáscia muscular, no entanto a manipulação externa pode restaurar as condições fisiológicas desse tecido. Objetivo: Verificar o efeito imediato da técnica Fascial Manipulation© na força muscular dos isquiotibiais de mulheres jovens. Materiais e Métodos: Realizou-se um estudo analítico intervencional, do tipo ensaio clínico aleatorizado, utilizando uma amostra por conveniência, a variável estudada foi a força muscular dos isquiotibiais. As participantes foram divididas em dois grupos aleatoriamente: grupo intervenção (GI) e grupo simulacro (GS). Inicialmente os dois grupos participaram do protocolo de avaliações, posteriormente o GI passou pelo protocolo de intervenção e o GS pelo protocolo simulacro e depois os dois foram reavaliados. Resultados: Participaram do estudo 32 mulheres, o GI apresentou uma melhora na força muscular e o GS apresentou uma redução da força muscular, porém as alterações não foram estatisticamente significativas para os dois grupos. Discussão: A miofáscia quando tratada realiza melhor a sua função. Portanto, a manipulação miofascial melhoraria a força muscular, neste trabalho foi observada uma melhora, porém não estatisticamente significativa. Conclusão: Foi constatada melhora da força muscular imediatamente após a aplicação da técnica Fascial Manipulation© em mulheres jovens, porém não estatisticamente significativa

PALAVRAS-CHAVE: Fáscia, Fisioterapia, Força Muscular.