



Massage and Reiki to reduce stress and improve quality of life: a randomized clinical trial

Massagem e Reiki para redução de estresse e melhoria de qualidade de vida: ensaio clínico randomizado

Masaje y Reiki para reducir el estrés y mejorar la calidad de vida: ensayo clínico aleatorizado

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-  Leonice Fumiko Sato Kurebayashi^{1,2}
-  Juliana Rizzo Gnatta³
-  Gisele Kuba^{1,2}
-  Ana Lucia Lopes Giaponesi^{1,2}
-  Talita Pavarini Borges de Souza^{1,2,4}
-  Ruth Natalia Teresa Turrini³

¹ Universidade de São Paulo, Escola de Enfermagem, Programa de Pós-Graduação em Enfermagem na Saúde do Adulto, São Paulo, SP, Brazil.

² Instituto de Terapia Integrada e Oriental, Curso de Massoterapia, São Paulo, SP, Brazil.

³ Universidade de São Paulo, Escola de Enfermagem, Departamento de Enfermagem Médico-Cirúrgica, São Paulo, SP, Brazil.

⁴ Faculdade de Ciências Médicas da Santa Casa de São Paulo, São Paulo, SP, Brazil.

ABSTRACT

Objective: To verify if a Massage (Anma technique) followed by rest or Reiki helps to reduce stress levels and improve the quality of life of individuals seen in an outpatient clinic of integrative practices. **Method:** A randomized controlled clinical trial conducted with 122 individuals randomized into three groups: G1 - Massage followed by rest; G2 - Massage followed by Reiki; and G3 - control (no intervention). Stress and Quality of Life levels were measured using the LSS and SF-12v2 instruments, which were applied before and after the intervention. **Results:** The study was conducted with 101 participants. Massages followed by rest (G1) or Reiki (G2) proved to be effective in reducing stress levels and improving quality of life when compared to the Control Group (G3). The best results obtained by the group which received Massage followed by Reiki (G2) were observed in the mental domain of quality of life, emphasizing the scope of Reiki effects on mental and psychological aspects. **Conclusion:** Massage followed by rest and Massage followed by Reiki application were effective in reducing stress levels and improving quality of life. Brazilian Registry of Clinical Trials: RBR-42c8wp.

DESCRIPTORS

Massage; Complementary Therapies; Stress, Psychological; Quality of Life; Holistic Nursing.

Corresponding author:

Leonice Fumiko Sato Kurebayashi
Rua Vieira Fazenda, 80, Vila Mariana
CEP 04117-030 – São Paulo, SP, Brazil
fumieibez@gmail.com

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INTRODUCTION

The word stress has been associated with feelings of discomfort, and the number of people who define themselves as stressed is growing. A stressor element can be a situation or experience which generates a challenge and encourages a response from the individual⁽¹⁾. Stress is generally thought of as something negative, which impairs the individual's overall performance; however, a stressor can be faced in a positive and constructive way, depending on how the individual reacts to the challenge. Both adaptation and coping are individual processes which require a balance between skills, abilities, social support and the challenges and stressors encountered⁽²⁾.

Stress is a complex psychoneuroimmunological phenomenon which affects the individual physically, mentally, emotionally and socially. An individual undergoes an adaptation during coping with stress from an endocrine and neurological point of view, called General Adaptation Syndrome (GAS), which is composed of three phases. First, a fight or flight reaction is generated in the alert phase, with physiological changes such as increased cardiac output, respiratory rate and catabolism⁽³⁾. If the stressor lasts, the individual will enter the Resistance Phase (adaptation period), in which adaptive energy reserves are consumed in seeking to rebalance, causing alteration in the adrenal glands characterized by decreased adrenaline production by the medulla and increased corticosteroids by the adrenal cortex⁽³⁾. Emotionally, an individual may experience feelings of fear, frustration, conflict, anxiety, depression, malaise, apathy, alienation, hypochondria, and a series of biochemical changes will directly affect the individual's immune conditions⁽³⁾. With the stressor persisting, the adaptive energy reserves will run out and the person will enter the third phase, being Exhaustion⁽³⁾. Failure of the adaptive response can trigger the development of numerous diseases, impair the individual's quality of life (QoL) and productivity. QoL is intrinsically related to stress levels, both in relation to health status and in the social, affective and professional areas⁽⁴⁾.

Regarding the different approaches to dealing with stress, promoting well-being and improving QoL, there is a growing interest in the use of Integrative and Complementary Practices (ICPs) such as Massage and Reiki.

The National Policy of Integrative and Complementary Practices in Health in Brazil of 2006 contained five guidelines: traditional Chinese medicine, anthroposophical medicine, homeopathy, use of medicinal plants/phytotherapy and the use of thermal waters⁽⁵⁾. Ordinance 849 of 2017 then added 14 more practices to the National Policy, among them Reiki⁽⁶⁾, and an additional 10 more the following year, thus representing a total of 29 regulated ICPs to be performed by health professionals⁽⁷⁾.

Through Resolution No. 581/2018, the Federal Nursing Council (COFEN) determined the procedures for registering postgraduate degrees and granted and approved the list of professional specializations, so that "Nursing in Integrative and Complementary Practices" is inserted in Area I – Collective Health, Child and Adolescent Health,

Adult Health⁽⁸⁾. The publication of Resolution 585/2018, which specifically deals with recognizing acupuncture as a specialization and/or qualification of the nursing professional⁽⁹⁾, reinforces the presence of this profession in ICP performance in the care context.

There are Nursing Theories which conceptually support ICP application in providing care. In her holistic view, Martha Rogers defined non-invasive modalities as being central to nursing care in the sense of bringing well-being and QoL⁽¹⁰⁾. In this sense, Massage and Reiki are appropriate ICP modalities for providing care. A study showed that a single session with Massage or Reiki promoted similar clinical improvements in hospitalized patients with nausea, pain, fatigue, anxiety, depression and well-being, with Reiki showing superior results to Massage in relation to fatigue and anxiety⁽¹¹⁾.

Relaxing Anma massage of Japanese origin was applied in the present study, which improves or relieves physical and psychological symptoms⁽¹²⁾. Therapeutic massage is a non-pharmacological method recommended as a nursing practice for critical patients in intensive care. It has helped to reduce cortisol levels in stressed coronary disease patients⁽¹³⁾.

Reiki is a complementary and adjuvant therapeutic technique which can reduce stress and promote relaxation, including through self-care because it is also self-applied⁽¹⁴⁾. A review study identified Reiki as an effective technique for pain reduction⁽¹⁵⁾, and there are reports of chronic pain relief in older adults⁽¹⁶⁾ and improvement in QoL, mood and reduction of chemotherapy side effects⁽¹⁷⁾. A study carried out with older adults found that Reiki produced psychophysiological effects and improved QoL in individuals who had symptoms of stress⁽¹⁸⁾. Although this technique is used for a variety of both physical and psychological symptoms, publications which demonstrate its effectiveness in nursing care practice are still scarce⁽¹⁹⁾, and more studies using the Reiki technique are needed.

Regarding massage, its use in nursing care practice for older adults at home has contributed to improving health and well-being, and also positively influenced factors such as pain, sleep, emotional state and psychosocial health⁽²⁰⁾. Relaxation effects on masticatory muscles have also been reported, with reduced pain in individuals with bruxism and improved QoL⁽²¹⁾.

Due to the importance of discussing ways of coping with stress which contribute to improving QoL, the present study aimed to verify whether Massage (Anma technique) followed by rest or Reiki could help to reduce stress levels and improve QoL in individuals seen at ICP outpatient clinics in the city of São Paulo. The study hypothesis was "Massage followed by Reiki is more effective than Massage followed by rest".

METHOD

STUDY DESIGN

A prospective, simple blind (statistical blinding), randomized controlled clinical trial study with three groups:

Massage Group followed by rest (G1); Massage Group followed by Reiki (G2); and Control Group without treatment (G3).

POPULATION

The population consisted of volunteers who sought care at an ICP outpatient clinic and military personnel from the 4th Regional Air Command of São Paulo (*IV-COMAR*) in the second half of 2015.

SELECTION CRITERIA

Participants who scored between 37 and 119 on the Vasconcellos Stress Symptoms List (LSS)⁽²²⁾ were included in the study sample. Exclusion criteria were the following: pregnant women, participants with planned vacations or on sick leave during the research period, using anxiolytics and antidepressants, who had discomfort during the Massage or had any tissue injury at points to be massaged.

Thus, 122 from the total of 141 interested in participating in the study met the selection criteria and were randomized through the Research Randomizer Quick Tutorial program. The minimum number of 30 participants per group was determined by a previous sample size with 80% power and 95% confidence level.

In G1, an Anma Massage protocol was applied for 20 minutes, followed by a 10-minute rest. G2 received the Anma Massage protocol for 20 minutes and then Reiki for 10 minutes, and G3 did not receive any intervention protocol.

INTERVENTIONS

The Anma Massage was performed on the posterior cervical, thoracic, and lumbar regions, as well as the buttocks and thighs to the feet, lasting 20 minutes and included smoothing, pressing and kneading techniques. Smoothing can be defined as performing a continuous movement with light pressure; pressure was achieved by compressing the anatomical point for approximately one second; kneading was performed with three circular movements during pressure. The protocol for applying the massage technique was performed in the following sequence: bilateral sliding with the palm of both hands over the spine (2 times); pressure and kneading on paravertebrals (2 times); kneading from the root of the scapula spine to the upper angle of the scapula (2 times); pressure and kneading on the middle portion of the trapezoid (2 times); pressure on the occipital line (2 times); kneading on the cervical area (3 times); pressure and kneading on the gluteus - 2 lines (2 times); pressure on the posterior aspect of the thigh - 2 lines (2 times); pressure on the popliteal line - (2 times); kneading to the supracarpal region on the sural triceps - (2 times); pressure and kneading on the plantar area of the feet - 3 lines (2 times).

The Reiki protocol involved positioning flat hands close to the eyes, occipital region, laryngeal region and over the sternum or cardiac region for 2.5 minutes in each region, totaling 10 minutes of technique application.

Interventions were performed twice a week, totaling eight sessions in one month of care. A team of 11 people was trained by the professionals of the ICP outpatient clinic where the data were collected in order to ensure uniformity in the treatments. The team consisted of students from the Technical Massage Course and monitored by teachers experienced in the techniques.

DATA COLLECTION

Data were collected using two instruments: the Vasconcellos Stress Symptoms List (LSS), which assesses the individual's stress levels⁽²²⁾ and the SF-12v2⁽²³⁾ for QoL. The instruments were applied in two moments: before the intervention (t1) and at the end of it (t2).

The LSS is composed of 59 psychophysiological and psychosocial symptoms of stress for which the interviewees must indicate the presence and frequency of each symptom (0 to 3), making a total of 177 points. Lower scores indicate the absence or low frequency of symptom manifestation, and higher scores the reverse⁽²²⁾.

The SF-12v2 is a shorter version of the SF-36 instrument and uses 12 questions to measure functional health and well-being from the patient's point of view, covering the same eight health domains as the SF-36v2⁽²³⁾. One opted to use the second version of the SF-12 in the present study because this instrument had its psychometric properties validated for the Portuguese language and the results showed reliable evidence for its use in measuring physical and mental health in the Brazilian context⁽²⁴⁾.

DATA ANALYSIS AND PROCESSING

The data were described by relative frequencies and central tendency measures. A comparison between the groups was conducted using the Pearson's chi-squared test for qualitative variables, ANOVA to test the mean differences, and Levene's test to verify the equality of variance. Furthermore, the ANOVA test was used for repeated measures and the Tukey test for multiple comparisons in order to compare the before and after. A significance level of $\alpha = 5\%$ was adopted and the effect size of the interventions was measured by the Cohen's d test, which determines the index: ≥ -0.15 and < 0.15 (insignificant effect); ≥ 0.15 and < 0.40 (small effect); ≥ 0.40 and < 0.75 (medium effect); ≥ 0.75 and < 1.10 (large effect); ≥ 1.10 and < 1.45 (very large effect); > 1.45 (huge effect). For the percentage of changes and their classifications: < -75 (huge reduction); ≤ -50 and > -75 (very large reduction); ≤ -30 and > -50 (large reduction); ≤ -15 and > -30 (average reduction); ≥ -5 and < 5 (insignificant change); ≥ 5 and < 15 (small increase); ≥ 15 and < 30 (average increase); ≥ 30 and < 50 (large increase); ≥ 50 and < 75 (very large increase); > 75 (huge increase).

ETHICAL ASPECTS

The study was approved by the Research Ethics Committee of the Universidade de São Paulo School of

Nursing under Opinion No. 1.105.429/2015. All participants read and signed the Clear and Informed Consent Form. The trial registration number by the Brazilian Clinical Trials Registry was RBR-42c8wp. No harm or damage to the participants was observed resulting from the study.

RESULTS

The study was completed with 101 participants. Twenty-one (21) people did not complete the protocol for the following reasons: loss of treatment continuity (13) and unanswered questionnaires (8), as seen in Figure 1.

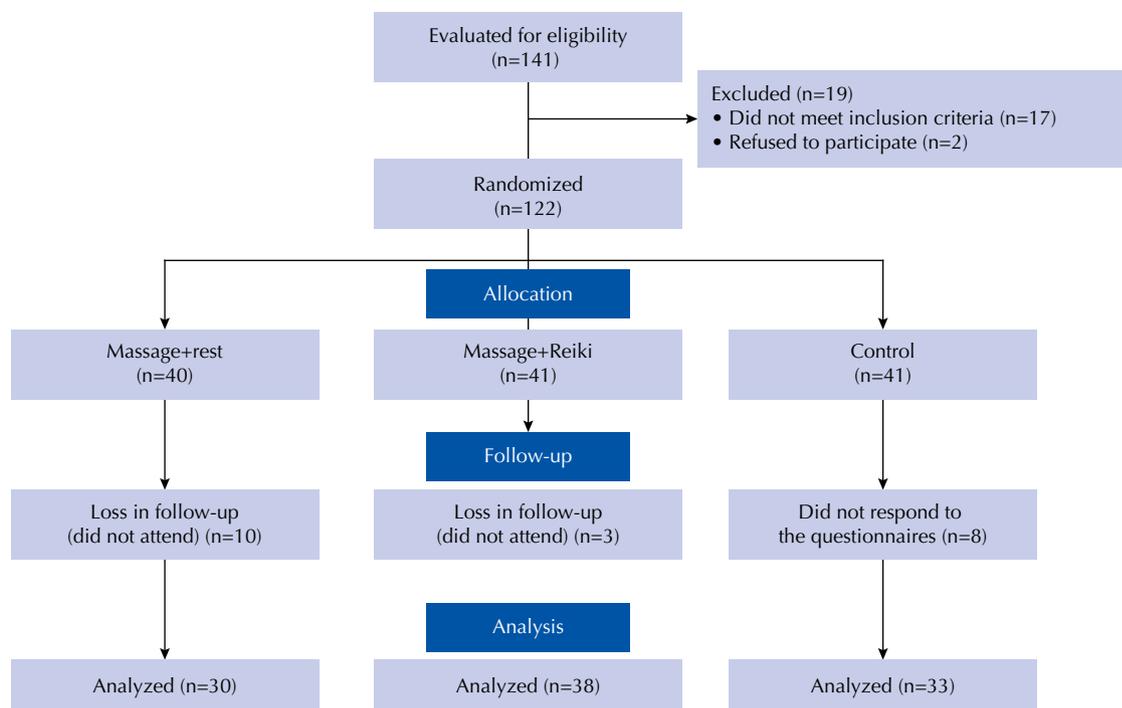


Figure 1 – Flowchart of participants involved in the study.

There was a greater participation of women (66.0%) with homogeneous distribution between groups ($p = 0.738$), and regarding the professional category, 29.7% (30) were military, 14.9% (15) health professionals, 8.9% (9) students, and 46.5% (47) others. The average age of the participants between the groups ranged around 35 years, the groups were homogeneous at the initial moment of the intervention (t_1)

in relation to age ($p = 0.450$), and according to the LSS ($p = 0.865$), the SF-12v2-physical ($p = 0.668$) and SF-12v2-mental ($p = 0.954$) instrument scores.

In the comparative analysis of the groups, there was a statistically significant difference between before and after the intervention for stress levels and physical and mental QoL domains (Table 1).

Table 1 – Comparison of central tendency measures before and after the intervention for stress levels (LSS) and quality of life physical and mental domains (SF-12v2) according to the study groups – São Paulo, SP, Brazil, 2015.

Instruments	G1	G2	G3	p*
	Mean (SD)	Mean (SD)	Mean (SD)	
LSS _{t1}	66.3 (20.6)	67.7 (23.4)	69.2 (19.7)	
LSS _{t2}	50.4 (21.0)	45.5 (22.8)	65.9 (20.1)	<0.001
SF12v2-physical _{t1}	48.4 (7.1)	47.3 (7.8)	46.6 (9.3)	
SF12v2-physical _{t2}	51.7 (5.8)	50.1 (6.1)	45.8 (8.4)	0.034
SF12v2-mental _{t1}	37.8 (8.9)	37.2 (10.0)	37.1 (10.6)	
SF12v2-mental _{t2}	44.5 (8.1)	47.4 (10.5)	37.2 (11.0)	0.001

* Repeated measures ANOVA.

The Tukey test showed that the differences occurred between Groups G2 and G3 in the LSS and SF-12v2-mental scores, and between Groups G1 and G3 on the SF-12v2-physical scores.

In the intragroup analysis of effect size by Cohen's *d*, it was observed that there was only a reduction in stress levels for G1 and G2. Regarding the improvement in quality of life, there was an improvement in the scores of the physical and mental domains for both intervention groups (Table 2).

Table 2 – Effect size (Cohen's *D*) and percentage of change in the intragroup intervention measured by the LSS and the instrument for assessing quality of life in the three study groups – São Paulo, SP, Brazil, 2015.

Groups	N	LSS		SF-12v2-physical		SF-12v2-mental	
		Cohen's <i>d</i>	%	Cohen's <i>d</i>	%	Cohen's <i>d</i>	%
G1	30	0.78	-24.0	0.52	+7.0	0.8	+18.0
G2	38	0.98	-33.0	0.40	+6.0	1.0	+27.0
G3	33	0.17	-5.0	0.09	-2.0	0.01	0.0

It was observed that interventions in G1 and G2 had a large effect size by Cohen's *d*, with a mean and high reduction in stress scores, respectively. For the QoL measure, interventions in G1 and G2 had a medium effect size and produced a small improvement in the physical domain. Regarding the mental domain, the interventions for these two groups had a great effect, while the improvement in QoL was average.

DISCUSSION

The two intervention groups in the present study received massage and both showed significant differences after treatment in relation to control. However, the results of the present investigation showed that the Massage followed by Reiki application (G2) achieved a better effect on the QoL scores in the mental domain than the Massage group followed by rest (G1).

In fact, Reiki has been used to reduce psychological problems. Reiki was able to significantly reduce mean pain scores, including chronic pain in older adults^(14,16), as well as to reduce anxiety, heart rate and respiratory rate in children in palliative care⁽²⁵⁾. An important advantage of this technique is that it is self-applied, being used successfully in university students accompanied for 20 weeks for stress reduction and greater relaxation⁽¹⁴⁾.

Reiki seems to have been decisive in expanding the positive results in stress levels in the present study. In an attempt to understand these results, it is recognized that little is known about the action mechanisms of this practice and the need to add multidisciplinary knowledge, such as that of quantum physics, is emphasized.

The language of quantum physics has been appropriated to account for the notion of vital energy, both in spirituality and in ICP. It has been explained from the idea of stimuli to neurotransmitters or bioelectric impulses which carry information throughout the body. In this way, the vital energy would be organizational information which would direct the subatomic structures and could be modulated by thought, since it is also composed of vibrational waves. Thus, the therapist's intention for healing would be very

important, as it transmits this information to the patient's subtle body⁽²⁶⁾.

From the understanding that human beings are energy fields, it is possible to speculate that the field is affected by an intention of care, or in the subtle energy which is sensitive to the hands of practitioners of therapies such as Reiki. The energetic field which is formed in the encounter between two people is the result of the interaction between the consciousness of both; and the role of this awareness is highlighted in the care provided to someone through attention and intentionality in the direction of health and well-being⁽²⁶⁾.

On the other hand, massage has been investigated in its different technical modalities for longer, with satisfactory results: in managing symptoms such as pain, nausea, anxiety, tension, fatigue and depression in hospitalized patients^(11,26); decrease in occupational low back pain, with improvement in the nursing team's work activities after applying acupressure massage⁽²⁷⁾; as well as improvement in physiological parameters of stress, decreased anxiety, muscle tension, pain and flexibility in patients with back pain through the use of Thai massage⁽²⁸⁾. Although several studies explain the effectiveness of massage, this practice was not included in the latest publication by the Brazilian Ministry of Health regarding practices which are part of the National ICP Policy⁽⁷⁾.

The absence of a placebo group for Reiki is cited as a limitation of the present study, therefore it is not possible to evaluate the effect of the technique alone in reducing stress and improving QoL. In order to deepen the debates on aspects concerning Reiki, designs which present a placebo group should be proposed, thereby enabling evaluation on the effect of this practice in isolation, as proposed in a study which showed positive results in improving the QoL of older adults with symptoms of stress who received Reiki⁽¹⁸⁾.

Finally, it is considered that the ICP may have a relevant role in Nursing for constructing care practices aimed at comprehensiveness. Rogers' theory lends support to the profession's care practices to be based on a strong holistic aspect⁽¹⁰⁾. In this sense, this study contributes to disseminating therapies such as Massage and Reiki which can benefit

the individual through reducing stress levels and promoting an improvement in QoL, preventing them from future illnesses. In addition, studies on such practices reinforce the nurse's role as a researcher in this area, scientifically contributing so that ICPs are included in the teaching and extension of training courses for health professionals.

Works such as this which explain the application time, type, and form of the complementary practices in question contribute by adding knowledge to the ICP area and Nursing, even based on the theoretical framework of this profession. Nursing is based on humanistic and holistic principles associated with interpersonal relationships, and is a vast field to be explored by ICPs, including through inserting these practices in undergraduate courses in the health area. Professionals who have contact with different care practices during their training will be able to improve and implement this knowledge in practicing care. ICPs applied together

with traditional therapeutic plans to promote health will result in an approach aiming at the physical, mental and emotional well-being of patients.

CONCLUSION

Massage followed by rest and Massage followed by Reiki application proved effective in reducing stress levels and improving quality of life, with superior results for the Massage Group followed by Reiki when compared to the Control Group. Regarding QoL, better results were found for the mental domain, emphasizing the scope of the effects of Reiki on psycho-emotional aspects. It is suggested to carry out studies which include a placebo group for Reiki in order to assess the scope of this practice in isolation and associated with massage, as well as associating the measurement of physiological parameters to verify the effect of the techniques on stress, and consequently on improvement in QoL.

RESUMO

Objetivo: Verificar se a Massagem (técnica Anmá) seguida de repouso ou Reiki auxilia na redução dos níveis de estresse e na melhoria da qualidade de vida de indivíduos atendidos em um ambulatório de práticas integrativas. **Método:** Ensaio clínico controlado randomizado conduzido com 122 indivíduos randomizados em três grupos: G1 – Massagem seguida de repouso, G2 – Massagem seguida de Reiki e G3 – controle (sem intervenção). Os níveis de estresse e Qualidade de Vida foram mensurados por meio dos instrumentos LSS e SF-12v2, os quais foram aplicados antes e após intervenção. **Resultados:** Finalizou-se o estudo com 101 participantes. As Massagens seguidas de repouso (G1) ou de Reiki (G2) se mostraram efetivas na redução dos níveis de estresse e melhoria de qualidade de vida quando comparadas ao Grupo Controle (G3). Os melhores resultados obtidos pelo grupo que recebeu Massagem seguida de Reiki (G2) foram observados no domínio mental de qualidade de vida, enfatizando a abrangência dos efeitos do Reiki sobre os aspectos mentais e psicológicos. **Conclusão:** A Massagem seguida de repouso e a Massagem seguida de Reiki se mostraram efetivas na redução dos níveis de estresse e melhoria de qualidade de vida. Registro Brasileiro de Ensaios Clínicos: RBR-42c8wp.

DESCRIPTORIOS

Massagem; Terapias Complementares; Estresse Psicológico; Qualidade de Vida; Enfermagem Holística.

RESUMEN

Objetivo: Verificar si el Masaje (técnica ANMA) seguido de reposo o Reiki auxilia en la reducción de los niveles de estrés y en la mejora de la calidad de vida de individuos atendidos en un ambulatorio de prácticas integrativas. **Método:** Ensayo clínico controlado aleatorizado conducido con 122 individuos aleatorizado en tres grupos: G1 – Masaje seguida de reposo, G2 – Masaje seguida de Reiki y G3 – control (sin intervención). Los niveles de estrés y Calidad de Vida fueron mensurados través de los instrumentos LSS y SF-12v2, para los cuales fue aplicada intervención antes y después. **Resultados:** Finalizó se el estudio con 101 participantes. Las Masajes seguidas de reposo (G1) o de Reiki (G2) se mostrarán efectivas en la reducción de los niveles del estrés y mejora de la calidad de vida cuando comparadas al Grupo Control (G3). Los mejores resultados obtenidos por el grupo que recibió Masaje seguida de Reiki (G2) fueron observados en los dominios mentales de calidad de vida, enfatizando el alcance de los efectos del Reiki sobre los aspectos mentales y psicológicos. **Conclusión:** La Masaje seguida del reposo y la Masaje seguida de la aplicación del Reiki mostraron se efectivas en la reducción de los niveles de estrés y mejora de la calidad de vida. Registro Brasileño de Ensayos Clínicos: RBR-42c8wp.

DESCRIPTORIOS

Masaje; Terapias Complementarias; Estrés Psicológico; Calidad de Vida; Enfermería Holística.

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