Comparative effects of abbreviated mindfulness or acupuncture protocols in Healthy People: a non-randomized feasibility study with one-month follow-up

Efeitos comparativos dos protocolos de mindfulness ou acupuntura em pessoas saudáveis: um estudo de viabilidade não randomizado com acompanhamento de um mês

Efectos comparativos de los protocolos de atención plena o acupuntura en personas sanas: un estudio de viabilidad no aleatorizado con un seguimiento de un mes

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Abstract
Background and aims: Evaluate the effects of the use of abbreviated mindfulness and acupuncture in healthy individuals, evaluating the levels of depression, anxiety, and life quality in an outpatient clinic of a Brazilian federal university. Methods: Comparison of two abbreviated interventions (mindfulness- and acupuncture-based) in a non-randomized pragmatic feasibility pilot study, with measurements (anxiety, depression, quality of life, and mindfulness levels) obtained through face-to-face validated questionnaires, pre, post, and 1-month post-intervention follow-up. We eventually evaluated 46 patients divided into 2 intervention groups (group I – acupuncture – n=23, and group II – mindfulness – n=23). Both groups completed 2 weeks of an abbreviated treatment. Results: In the abbreviated mindfulness group, significant improvement was observed in the levels of anxiety, depression, and quality of life with better performance in the follow-up after 1 month of treatment. In the acupuncture group, there was significant improvement observed in the levels of mindfulness, anxiety, depression, and quality of life shortly after the care, without showing any sustainable improvement at follow-up after 1 month of treatment. Conclusion: abbreviated protocols of mindfulness and acupuncture seem to be feasible and potential efficacious in improving the quality of life of healthy individuals with common mental disorders, while only mindfulness effects were lasting during follow-up. The two techniques emerge as alternative ways of assisting and improving the quality of life of these patients and should be tested in a randomized controlled study with a larger sample.
Keywords: Acupuncture; Mindfulness; Quality of life.

Resumo
Justificativa e objetivos: Avaliar os efeitos do uso de mindfulness abreviado e acupuntura em indivíduos saudáveis, avaliando os níveis de depressão, ansiedade e qualidade de vida em um ambulatório de uma universidade federal

brasileira. Métodos: Comparação de duas intervenções abreviadas (baseadas em mindfulness e acupuntura) em um estudo piloto de viabilidade pragmática não randomizado, com medidas (níveis de ansiedade, depressão, qualidade de vida e mindfulness) obtidas por meio de questionários validados face a face, acompanhamento pré, pós e 1 mês pós-intervenção. Avaliamos 46 pacientes divididos em 2 grupos de intervenção (grupo I – acupuntura – n=23 e grupo II – mindfulness – n=23). Ambos os grupos completaram 2 semanas de um tratamento abreviado. Resultados: No grupo mindfulness abreviado, observou-se melhora significativa nos níveis de ansiedade, depressão e qualidade de vida com melhor desempenho no seguimento após 1 mês de tratamento. No grupo de acupuntura, observou-se melhora significativa nos níveis de mindfulness, ansiedade, depressão e qualidade de vida logo após o atendimento, sem apresentar melhora sustentável no acompanhamento após 1 mês de tratamento. Conclusão: protocolos abreviados de mindfulness e acupuntura parecem ser viáveis e potencialmente eficazes na melhora da qualidade de vida de indivíduos saudáveis com transtornos mentais comuns, enquanto apenas os efeitos do mindfulness foram duradouros durante o seguimento. As duas técnicas surgem como formas alternativas de auxiliar e melhorar a qualidade de vida desses pacientes e devem ser testadas em estudo controlado randomizado com amostra maior.
Palavras-chave: Acupuntura; Mindfulness; Qualidade de vida.

Resumen
Justificación y objetivos: Evaluar los efectos del uso de mindfulness abreviado y acupuntura en individuos sanos, evaluando los niveles de depresión, ansiedad y calidad de vida en un ambulatorio de una universidad federal brasileña. Métodos: Comparación de dos intervenciones abreviadas (basadas en atención plena y basadas en acupuntura) en un estudio piloto de factibilidad pragmática no aleatorizado, con medidas (ansiedad, depresión, calidad de vida y atención plena) obtenidas a través de cuestionarios cara a cara validados, seguimiento pre, post y 1 mes postintervención. Se evaluaron 46 pacientes divididos en 2 grupos de intervención (grupo I – acupuntura – n=23 y grupo II – mindfulness – n=23). Ambos grupos completaron 2 semanas de tratamiento abreviado. Resultados: En el grupo de mindfulness abreviado hubo una mejoría significativa en los niveles de ansiedad, depresión y calidad de vida con mejor desempeño en el seguimiento después de 1 mes de tratamiento. En el grupo de acupuntura, hubo una mejora significativa en los niveles de atención plena, ansiedad, depresión y calidad de vida poco después del tratamiento, sin mostrar una mejora sostenible en el seguimiento después de 1 mes de tratamiento. Conclusión: los protocolos abreviados de mindfulness y acupuntura parecen ser factibles y potencialmente efectivos para mejorar la calidad de vida de individuos sanos con trastornos mentales comunes, mientras que solo los efectos del mindfulness fueron duraderos durante el seguimiento. Ambas técnicas surgen como vías alternativas para ayudar y mejorar la calidad de vida de estos pacientes y deberían ser probadas en un ensayo controlado aleatorizado con una muestra más amplia.
Palabras clave: Acupuntura; Mindfulness; Calidad de vida.

1. Introduction

The human is a multidimensional being capable of interpreting reality in different ways. Its biological, psychological, social, and spiritual dimensions cannot be seen as independent parts, but rather as perspectives of a greater and inseparable whole, and thus, its health must be treated in the same way, either for pathophysiology or mental illness (Vectore, 2005). Feelings and emotions should not be considered secondary issues to the treatment of pathologies. However, there are millions of people who present physical and emotional suffering that do not have a defined diagnosis, yet present traces of common mental disorders. They do not receive proper attention, whether due to lack of diagnosis or by minimizing common problems (Oliveira & Junges, 2012).

The World Health Organization defined Common mental disorders as referring to two main diagnostic categories: depressive disorders and anxiety disorders. These disorders are highly prevalent in the population (hence why they are considered 'common'), and impact on the mood or feelings of affected persons; symptoms range in terms of their severity (from mild to severe) and duration (from months to years). These disorders are diagnosable health conditions, and are distinct from feelings of sadness, stress, or fear that anyone can experience from time to time in their lives.

As the situation of perfect physical, mental and social well-being. However, many people do not receive the proper diagnosis or effective treatment, and in many cases, common mental disorders are characterized by mixed symptoms of anxiety and depression, with many somatic complaints that usually arise from psychosocial problems (American Psychiatric Association, 2014). Healthy people present some common mental disorders symptoms, therefore, there are people that do not

get a proper diagnosis.

The symptoms of the term common mental disorder refer to cases that present non-psychotic occurrences, such as insomnia, fatigue, depressive symptoms, irritability, forgetfulness, difficulty concentrating, and somatic complaints that produce disability functional classifications of people there are people that do not get a proper diagnosis classified in the DSM-V - Diagnostic and Statistical Manual of Mental Disorders - (American Psychiatric Association, 2014) and ICD-10 (International Classification of Diseases - 10th Revision) including depression and anxiety disorders, panic disorder, obsessive-compulsive disorder and post-traumatic stress disorder.

The presentation of symptoms of common mental disorders is prevalent in female subjects, low socioeconomic status, low schooling, and senility (Maragno et al., 2006).

Currently, an increase in the number of patients with common mental disorders has been observed. These symptoms are associated with impairment in the quality of life of such people, which is evidence of the need to acquire alternatives to treat these conditions. This study proposes the use of non-drug therapies such as mindfulness and acupuncture for healthy people achieve a betterment in their quality of life.

Meditation practices can affect physiological pathways that are modulated by stress. The practice of meditation, which promotes compassion, is associated with less reactivity to stress (Pace et al., 2009).

In the study by Hollis-Walker and Colosimo (2011) the relationships between mindfulness and happiness indexes were examined in order to verify the feeling of well-being in individuals who practice meditation. The explanation of the role of mindfulness can be found because it is a technique to exercise the mind to be in the present, as if the mind could be trained to be neither in the past, nor in the future, but with daily training to be connected to the present.

After such analysis, it was concluded that self-compassion is a crucial attitude in the relationship between mindfulness and happiness. It has also been described that conscious intervention can increase job satisfaction, quality of life and compassion (Fortney et al., 2013).

Self-care programmes based on mindfulness have a variety of techniques, such as mindfulness of breathing, bodily "scanning" (a technique like progressive muscle relaxation), meditative walking and mindfulness of body movements using light body postures and can be performed by individuals with different levels of capacity and physical limitations. Self-care programmes based on mindfulness act as a powerful tool in the awakening of the inner capacity of practitioners, as well as the co-responsibility of their own health to the practitioners, which predisposes the increased motivation to change the way of life. The therapeutic effects of the mindfulness-based methodology for pathologies such as anxiety, depression and fibromyalgia are similar in relation to pharmacological therapy, cognitive behavioural therapy, exercises, and other behavioural treatments, however, without presenting side effects and exacerbated expenses (Yamamura, 2014).

According to Yamamura (2014) traditional Chinese medicine is based on Taoism, with the conception of the submission of the universe and human beings to the same influences. Through the study of the phenomena that occur in nature, the functioning of the human body is analogously understood. In this way, Chinese philosophy relies on three pillars: The Yin-Yang, which corresponds to the primordial and essential condition for all a natural phenomenon. The concept of yin and yang is that the opposite energies complement each other and are in constant balance and transformation, based on this concept we have the theory of five movements, which explains the dynamics of these energetic processes and how they complement and maintain each other in constant balance; after mapping how energy moves and balances, a comparison of the energetic states of the universe with the body is made and some organs and viscera are called according to their function within yin and yang, so-called Zang-fu theory. A Mandarin technique that has spread in the West is acupuncture, which relies on the existence of previously determined bodily points distributed along twelve energetic channels called meridians (Heart, Liver, Spleen-Pancreas, Lung, Stomach, Kidney, Circulation-Sex, Small Intestine, Gallbladder, Large Intestine, Bladder and Triple Heater),

which travel the body vertically and form symmetrical pairs on the dorsal and ventral surfaces of the body, which duly stimulated, usually by needles, are capable of promoting a number of benefits to the individual's health. It is used in patients with symptoms of headaches, gastrointestinal disorders, allergies, and pain in general. Besides having a profound influence on emotional and mental problems, the combination of this technique with psychotherapy is recommended (Dong et al., 2017). In addition, acupuncture combined with Western medicine has a positive effect on sleep quality compared to the treatment of isolated Western medicine and may be an alternative therapy to medication for the treatment of sleep disorders related to depression (Dong et al., 2017).

Currently, traditional western medicine maintains a cartesian pattern, in which the conception of pathophysiology and the treatment for certain pathologies encounter great barriers, especially in mental illnesses. In a hidden limbo, there are people with untreated and undiagnosed pathologies, which are common mental disorders. Such changes present mixed symptoms of anxiety and depression, with many somatic complaints that normally arise from psychosocial problems. Given this, traditional Chinese medicine, for example, can be an alternative to solve these problems in a simple way.

The research is based on proposing non-drug therapies through mindfulness and acupuncture for common mental disorders.

Comprehensive health care, in line with new therapeutic assumptions, becomes necessary due to the conditions of the public health system and the demands of patients who are no longer content with pure medicalization as a source of attention to their illness processes. In addition to having no side effects, these practices are more cost-effective than classic drug therapies, reducing the budgetary cost of drugs. Moreover, the mindfulness technique can also contribute to reducing several issues such as anxiety, depression, improving quality of life, among other things. It is worth mentioning that there are few studies in the specialized literature that deal with the relevance of brief protocols, and this article sought to explore this gap in the literature.

The objective of this study was to evaluate the benefits of the use of mindfulness and acupuncture-based (Traditional Chinese Medicine) self-care programs in the management of quality of life of healthy people, comparing the levels of attention, anxiety, depression, quality of life with validated scales in adults and elderly patients attending UNIFESP outpatient clinics. The specific objective was to compare mindfulness and acupuncture-based self-care programs.

2. Methods

Participants

Participants were selected by screening and initially participated in introductory lectures. Each individual freely chose the therapy they would like to be treated, thus being separated into two groups for a period of two weeks. Inclusion criteria were individuals over 18 years old, adults and the elderly (from the São Paulo / EPM / UNIFESP hospital and SUS in general, as well as UNIFESP outpatient clinics) who were interested in participating in the project. The exclusion criteria were patients under 18 years old and who presented any evidence of psychological discomfort or worsening of any physical or psychiatric pathology. Thus, patients were screened at the UNIFESP, EPM aging study center and entered a two-week program after the project was approved at CEP (Committee on the Ethics) UNIFESP and reassessed after a period of one month. Patients were not treated at the UNIFESP, EPM study center and entered a two-week program from the beginning of the project at CEP UNIFESP and reassessed after a period of one month. The groups were separated I group I: 23 individuals involved with acupuncture and group II: 23 individuals involved with mindfulness. The mindfulness groups conducted by the instructor Valéria Pieroni de Mello, formed by Mente Aberta- UNIFESP and the needling performed by the acupuncturist, Marcelo Vilela Machado João that use Traditional Chinese Medicine.

This comparison of these two interventions in a non-controlled pragmatic study including 62 individuals over 18 years of age. Individuals were referred from the Hospital São Paulo, Escola Paulista de Medicina da Universidade Federal de São

Paulo - Hospital São Paulo, Paulista School of Medicine, Federal University of São Paulo, sites in São Paulo, Brazil. Those individuals with psychological discomfort and any physical illnesses and acute mental disorders were excluded (n= 17*14). Individuals were purposively divided into the acupuncture group (n=23) and the mindfulness group (n= 23), according to the free choice of the individuals. The study was approved by the Hospital São Paulo, Escola Paulista de Medicina da Universidade Federal de São Paulo - Hospital São Paulo, Paulista School of Medicine, Federal University of São Paulo, sites in São Paulo, Brazil.- (CAAE- 58700016.0.0000.5505) and was conducted following the CONSORT guidelines (Schulz, Altman, Moher, & CONSORT Group, 2010). Informed consent was obtained from each patient.

Interventions

A female Instructor with extensive and rigorous training following the British and Brazilian guidelines for good practices of mindfulness facilitated the mindfulness groups. The acupuncture intervention was based on the principles of Chinese medicine, which were structured with Taoism and provided by a male doctor with specialisation and 3 years' experience in acupuncture. Individuals completed a baseline assessment that included all study measures (see Measures). Individuals in both intervention groups met a total of four weekly sessions. The intervention groups were held at the held at the Hospital São Paulo, Universidade Federal de Sao Paulo. After the 4-week intervention period, all individuals completed post-intervention measures.

Acupuncture intervention (Group I) – In group I, the individuals underwent acupuncture, had two weeks of treatment, with one meeting per week, where alcohol antisepsis was performed, and the introduction of disposable acupuncture needles, size 0.25x40mm with with the Chuck were used. Acupuncture points used the Te Qi nine points as follows: Yamamura (2014) points system points craniométricos 1,3, Bregma, Ptério, cervical Yamamura system points of acupuncture cervical C4-point vertebral14 C5, C5-C6 cervical point, cervical point C7-T1, Yintang, VG20 (Baihui), VC17 (Dhozhong) and C7 (Shenmen). So, nine needles were inserted per subject per session. Individuals met for a total of four weekly sessions lasting 20 minutes, summing up to 120 hours of intervention.

The MBSR is a program based on the Mindfulness-Based Stress Reduction (MBSR), program developed by Jon Kabat-Zinn. [Omitted for submission] was developed by [omitted for submission]. Individuals learned new types of mindfulness practices each week (week 1, What is mindfulness?; week 2, Mindfulness of breathing; week 3, Body mindfulness part 1; week 4, Body mindfulness part 2; week 5, Bodily mindfulness; week 6, Silence; week 7, Compassion; and week 8, Mindfulness for life). Individuals met for a total of four weekly sessions (two sessions per week) lasting 90 minutes, summing up to 720 hours of intervention, to live and exchange experiences on mindfulness techniques, which are based on exercises to focus attention on the present, of simple learning. The main techniques of Mindfulness were worked on raisin exercises, mindfulness in brief (3 minutes) and complete breathing, body "scanning" (EC), and body movements with mindfulness (MCM).

Outcomes

No primary outcome was seen in the short and long term for self-care programs, including awareness and acupuncture, measured by instruments for measuring psychosocial variables and results obtained by groups focused on situations of pain, obesity, anxiety disorder, diabetes, and depression. The secondary outcome provided an observation about adherence to these treatment methods in the patients involved.

Sample size

Population that voluntarily accepted to participate in the whole project, from activities related to filling in the

instruments, to the participation of acupuncture and mindfulness sessions.

Randomization

Demographic data – Brief demographic questionnaires were completed by individuals to obtain background information, including age, gender, and health insurance. The sociodemographic questionnaire aimed to stratify the population that voluntarily accepted to participate in the whole project, from activities related to filling out the instruments, to the participation of the acupuncture and mindfulness sessions. The questions in the sociodemographic questionnaire had a varied answer, such as choosing items from a scroll bar, selecting multiple items, selecting a single item, Likert scale, among others. It is also worth noting that the socio-demographic data was composed of an inventory that investigated several characteristics of the respondents.

Allocation - Self-compassion scale

The Self-compassion scale is a valid and reliable means of assessing a positive healthy attitude toward the self when facing suffering and difficulties (Souza & Hutz, 2016). The average scores of general compassion tend to be about 3.0 on a scale of 1 to 5; a score of 1.0 to 2.5 can indicate that the respondent has a low index of automatic compatibility, 2.5 to 3.5 can indicate a moderate index and 3.5 to 5.0 indicates a high index. As higher scores for the domains of self-criticism, isolation, and self-identification, they signal the lower index of comparison of oneself. The general score is calculated from the sum of the points scored in each item, divided by 26. The following items 1, 2, 4, 6, 8, 11, 13, 16, 18, 20, 21, 24 and 25, must be inverted to calculate the overall score of the scale.

Hospital anxiety and depression (HADS) scale – HADS is a valid and reliable means of assessing anxiety and depression (Zigmond & Snaith, 1983). The general score was calculated from the sum of the points in the odd (anxiety) and even (depression) items, such that: 0 - 7 points: unlikely; 8 - 11 points: possible - (questionable or doubtful); 12 - 21 points: probable.

Mindful Attention Awareness Scale (MAAS) –Mindfulness was assessed using the MAAS, a 15-item single-dimension measure of trait mindfulness that individuals may possess or learn through mindfulness training (Keng et al., 2011), (Hollis-Walker & Colosimo, 2011). These included acting with awareness.

Statistical Analyses

Mindful Attention Awareness Scale (MAAS) measure scale that assesses the level of mindfulness, composed of 15 items, on a six-point Likert scale that ranges from (1) almost always to (6) almost never. The scale is one-dimensional, so all items measure mindfulness. The score is given by the sum of the points in the 15 items.

Statistical methods

It is a longitudinal interventionist study, correlational analytical, with measures obtained through the presence of validated questionnaires. Self-report questionnaires were applied at the beginning of the study and follow-up measures after the end of each program in a two-week period (modules). Follow-up was carried out after one month, again, applying the same questionnaires.

The sociodemographic questionnaire was analyzed through descriptive statistics for exploratory characterization of population. Box plot charts were used for understanding of continuous variables and frequency tables (with the Spearman correlation, with statistically significantly statistics) to ordinal and nominal variables, cross-form; sectors graphics and dispersion (Brown & Ryan, 2003). To assess the reliability of scales, internal consistency was measured by Cronbach's alpha

(Barros et al., 2015). To check the stability of the test-retest, we used the intraclass correlation coefficient, according to Castilho and Gouveia, (2011), calculated for comparisons between the responses of the instruments, as well as to compare the two types of intervention—acupuncture and mindfulness. The differences between the three stages (the beginning of the study, after the end of each program and in the follow-up phase) were not considered, given that the rate of adherence to the response of the instruments was not kept over time (and only were considered in the calculations of the instruments with complete filling of the same items in total). The IBM SPSS (Statistical Package for Social Sciences), version 23.0, statistical package was used.

3. Results

Participant flow

The study had 46 volunteers, who answered the questionnaires at stage one, the beginning of each study; however, in the second stage, after the end of each program, there were only 26 respondents in the four instruments used; and, after a month (follow-up), only 16 complete answers were found on the instruments used. As mentioned above in a specific section of study field composition, sample, and participant selection, it can be observed that the study was open so that participants could choose which intervention they would like to stay in. Such a method, in general, is not used because it may interfere in the variability of the group organization (in the response to the interventions performed); however, due to the fear some people reported about acupuncture needles or by participants' reports of not wanting to learn the techniques of mindfulness, it was decided to follow this conduct.

Implementation of intervention

It was possible to verify that the maximum age of the volunteers was approximately 70 years old, with a minimum of about 20 years old, which results in an average between 35 and 40 years old. It was around 30 years old (50% of women between 28 and 30 years old and the other half between 30 and 45 years old); the median age of men was also around 30 years, indicating that 50% of them were between 25 and 30 years old and the other 50% were between 30 and 44 years old.

It is noted that most participants were female (80.4%), while men accounted for 19.6% of participants, the proportion was different. In the acupuncture group, 85% more women, while in the mindfulness group, 65% more women .

The highest religious rates of participants were 39% in the acupuncture group of spiritualists, who pray at home, and 22% in the mindfulness group of Catholics/Christians praying at home. More information is contained in Table 1. The most commonly used practice was meditation, 26% in the acupuncture group and 22% in the mindfulness group, while the least used was Reike, 13% in the acupuncture group and 5% in the mindfulness group.

Table 1 - Distribution of different practices according to groups.

Groups	Practices	Acupuncture	Mindfulness
Practices	Yoga	17%	13%
	Meditation	26%	22%
	Acupuncture	17%	22%
	Reiki	13%	5%
	Floral	22%	22%
	Homeopathy	18%	18%

Note. Percentage of the total number of respondents = 23, in each group. Source: Authors.

Recruitment

The study was carried out in late 2016, with 30 individuals from each selected group and the follow-up in January 2017. Baseline data Table 2 shows disease distribution according to groups.

Table 2 - Distribution of different diseases by group.

Group	Acupuncture			*Mindfulness*		
Diseases	No	Yes	I Do Not Know	No	Yes	I Do Not Know
Depression	87%	9%	4%	78%	9%	13%
Bipolar Disorder	91%	0%	9%	91%	0%	9%
Personality Disorder	91%	0%	9%	91%	0%	9%
Eating Disorder	96%	4%	0%	96%	0%	4%
Cancer	100%	0%	0%	100%	0%	0%
Epilepsy	100%	0%	0%	100%	0%	0%
Schizophrenia	100%	0%	0%	100%	0%	0%

Source: Authors.

Numbers analyzed

Table 3 shows the level of mindfulness that the acupuncture group obtained. It is possible to observe an improvement soon after the intervention with the gain drop in the follow-up of one month. In the group that was submitted to mindfulness, there was an increase in improvement before, during and after the study. It can be affirmed that acupuncture obtained a more satisfactory result of the level of attention after the intervention, however, with a decrease in gain after one month. In the long term, the group submitted to mindfulness had a significant improvement in relation to the group submitted to acupuncture.

The result was as expected, given that the effects of acupuncture are momentary. Yet in mindfulness, if the individual continues to practice, the effects are continuous. The p-value was < 1% (0.010) being 0.001 before, during and after the study; there was a ― statistically significant difference.

Table 3 - Number of items of the instrument - MAAS scale.

Number of instrument items - MAAS scale	Moment of application of the instrument	Groups	Number of respondents	Adhesion rate	Score of the instrument	Alpha of cronbach's domain	P-value
15	Before Study	Acupuncture	22	96%	53	0.839	< 0.001
		Mindfulness			52	0.887	
	During Study	Acupuncture	13	57%	60	0.812	< 0.001
		Mindfulness			55	0.864	
	After Study	Acupuncture	11	48%	57	0.939	< 0.001
		Mindfulness			63	0.898	

Source: Authors.

In Table 4, it is observed that acupuncture and mindfulness improved anxiety levels shortly after the intervention and one month after the study, with a p-value of 0.005. The level of depression did not improve neither during nor after the study using the acupuncture technique. With the use of the mindfulness technique, there was an improvement after the same follow-up period.

Table 4 - Number of items HADS scale.

Hads scala domains	Number of instrument items	Number of domain items	Moment of application of the instrument	Groups	Number of respondents	Adhesion rate	Score of the domain	Alpha of cronbach's domain	P-value
anxiety	14	7	before study	acupuncture	23	100%	7	0.814	< 0.001
				mindfulness			7	0.789	
			during study	acupuncture	13	57%	5	0.901	< 0.001
				mindfulness			5	0.870	
			after study	acupuncture	7	30%	5	0.916	< 0.001
				mindfulness			7	0.838	
depression	14	7	before study	acupuncture	23	100%	4	0.763	< 0.001
				mindfulness			5	0.738	
			during study	acupuncture	13	57%	6	0.700	< 0.001
				mindfulness			5	0.748	
			after study	acupuncture	7	30%	6	0.811	0.005
				mindfulness			4	0.739	

Source: Authors.

In Table 5, it is evident that there were no changes in the domains of self-compassion, evaluating self-criticism, self-identification, and comprehension in both groups. The group that underwent mindfulness during the study did not obtain alterations of the levels studied shortly after the intervention; nevertheless, the group presented increased levels of self-criticism, self-identification, and comprehension at follow-up. In the field of mindfulness, the patients obtained gains in the levels of attention after the intervention and sustained the benefits after follow-up.

The group that received acupuncture did not show alterations of the levels of self-criticism and attention at all recorded moments; nonetheless, improvement of the self- identification and comprehension meters were obtained soon after the intervention. It was also observed that the individuals participating in this therapy did not maintain the results one month after the intervention.

Table 5 - Domain scale of self-compassion.

Self-compassion scale domain	Number of instrument items	Number of domain items	Moment of application of the instrument	Groups	Number of respondents	Adhesion rate	Score of the instrument	Alpha of cronbach's instrument	P-value	Score of the domain	Alpha of cronbach's instrument	P-value
Self-criticism	26	5	Before Study	Acupuncture	23	100%	3	0.894	< 0.001	3	0.863	< 0.001
				Mindfulness			3	0.921		3	0.822	
			During Study	Acupuncture	13	57%	4	0.890	< 0.001	3	0.775	> 0.05
				Mindfulness			3	0.865		3	0.464	
			After Study	Acupuncture	8	35%	3	0.860	< 0.001	3	0.706	0.009
				Mindfulness			4	0.926		4	0.822	
Auto-identification	26	4	Before Study	Acupuntura	23	100%	3	0.894	< 0.001	3	0.771	< 0.001
				Mindfulness			3	0.921		3	0.735	
			During Study	Acupuncture	13	57%	4	0.890	< 0.001	4	0.667	0.003
				Mindfulness			3	0.865		3	0.693	
			After Study	Acupuncture	8	35%	3	0.860	< 0.001	3	0.719	> 0.05
				Mindfulness			4	0.926		4	0.460	
Isolation	26	4	Before Study	Acupuncture	23	100%	3	0.894	< 0.001	4	0.697	< 0.001
				Mindfulness			3	0.921		3	0.881	
			During Study	Acupuncture	13	57%	4	0.890	< 0.001	4	0.854	< 0.001
				Mindfulness			3	0.865		3	0.852	
			After Study	Acupuncture	8	35%	3	0.860	< 0.001	4	0.820	0.008
				Mindfulness			4	0.926		4	0.740	
Human Condition	26	4	Before Study	Acupuncture	23	100%	3	0.894	< 0.001	4	0.788	< 0.001
				Mindfulness			3	0.921		3	0.738	
			During Study	Acupuncture	13	57%	4	0.890	< 0.001	4	0.865	< 0.001
				Mindfulness			3	0.865		3	0.808	
			After Study	Acupuncture	8	35%	3	0.860	< 0.001	3	0.887	> 0.5
				Mindfulness			4	0.926		4	0.199	
Comprehension	26	5	Before Study	Acupuncture	23	100%	3	0.894	< 0.001	3	0.666	< 0.001
				Mindfulness			3	0.921		3	0.730	
			During Study	Acupuncture	13	57%	4	0.890	< 0.001	4	0.565	0.02
				Mindfulness			3	0.865		3	0.793	
			After Study	Acupuncture	8	35%	3	0.860	< 0.001	3	0.703	0.01
				Mindfulness			4	0.926		4	0.711	
Mindfulness	26	4	Before Study	Acupuncture	23	100%	3	0.894	< 0.001	4	0.655	< 0.001
				Mindfulness			3	0.921		3	0.827	
			During Study	Acupuncture	13	57%	4	0.890	< 0.001	4	0.864	< 0.001
				Mindfulness			3	0.865		4	0.773	
			After Study	Acupuncture	8	35%	3	0.860	< 0.001	4	0.795	0.002
				Mindfulness			4	0.926		4	0.847	

Source: Authors.

Outcomes and estimation

For the analyses of the four scales studied, the significance level of 1% (0.010) was adopted, that is, assuming an initial hypothesis, so that there is no difference between the two groups and applying each of the scales, for comparison between the intraclass intervals, with the values of only the subgroups being registered with an insignificant difference. This value was adopted to be sure of the differences, given that the number of adherences to the responses of the scales fell at each stage, as shown in the tables below.

Thus, when the value of calculated significance (p) is less than 1% (0.010), there may be a statistically significant difference (in the case of comparisons). Therefore, there might have been an effective difference (in the case of comparisons) between the working groups, and thus the initial hypothesis is refuted. For values where p is greater than 1%, it can be understood that there was some difference between the groups, probably due to the internal consistency of the instrument. Alternately, when the value of the calculated significance (p) is equal to or greater than 1% (0.010), there may be a statistically non-significant difference (in the case of comparisons), that is, there might not have been a difference (in the case of comparisons) between the working groups, and thus the initial hypothesis cannot be refuted.

For a reliability analysis, the measures come from the application of statistical tests, which in this case, are used as its level metrics. To analyses the internal consistency of the scale, Cronbach's alpha was calculated, which was used to verify the

level of reliability in terms of the so-called internal consistency of the observed values. The interpretation of results should be considered for the instrument and for domains that are greater than 0.70 as good, that is, they may indicate that the items have internal consistency; for the others, as it is a validated questionnaire, it can be considered that the number of respondents was small. Furthermore, the values of Cronbach's alpha statistics can vary from 0.000 to 1.000, and according to Hair et al., (2005), this variation obeys the following rule:

Between 0.000 and 0.600 (exclusive) - unsatisfactory reliability (in a case like this, one or more evaluators would be eliminated or treated separately, depending on the type of study); between 0.600 (inclusive) and 0.700 (exclusive) - satisfactory reliability (in a case like this, there is no motivation to segregate the evaluators, except for a decision apart from the statistical result); between 0.700 (inclusive) and 1.000 - high reliability (it is accepted that the evaluators have expected variabilities).

Ancillary analyses

Table 6 shows the difficulties in data collection, which were incorrectly filled in by the majority of candidates in several fields. Besides not having statistical significance, it was not possible to evaluate all the aspects in all the fields of the questionnaire. In the acupuncture group, it was verified that in the fields about the quality of life as a general state, pain, physical, emotional and vitality of the patients in most domains, they showed improvement after the application of acupuncture, presenting value decreases in the evaluation one month after the procedure. In other areas, evaluation was not possible. In the mindfulness group, we observed that the assessments of general state, physical aspects, emotional and vitality beyond social aspects have, in most of their domains, a growing improvement, in which it is possible to observe a sensitive evolution soon after the procedure and increased scores after one month of treatment. The functional capacity and the pain aspect remained throughout the study.

Table 6 - Domain scale SF12.

SF12 scale domain	Number of instrument items	Number of domain items	Moment of application of the instrument	Number of respondents	Adhesion rate	Scoring the domain (for domains with more than one item the arithmetic mean of the items was calculated)				
							Score acupuncture		Score mindfulness	
						Category	By category	For item (median of categories)	By category	For item (median of categories)
General health status item 1	12	1	Before study	23	100%	1	9		22	
						2	30		35	
						3	52	Good	44	Good
						4	9		0	
						5				
			During study	13	57%	1	15		15	
						2	46		54	
						3	39	Very good	31	Very good
						4				
						5				
			After study	9	40%	1	11		44	
						2	44		44	
						3	33		11	
						4	11			
						5				
Functional capacity item 2 and 3	12	2	Before study	23	100%	1	4	No. Does not hinder.	7	No. Does not hinder.
						2	22		22	
						3	74		72	
			During study	13	57%	1	0		4	
						2	31		23	
						3	69		73	
			After study	9	40%	1	11	Yes. Hinders a bit.	6	
						2	44		22	

SF12 scale domain	Number of instrument items	Number of domain items	Moment of application	Number of respondents	Adhesion rate	Category	Score acupuncture By category	Score acupuncture For item	Score mindfulness By category	Score mindfulness For item
						3	44		72	
Physical aspects item 4 and 5	12	2	Before study	23	100%	0	24	They performed fewer tasks than he wanted and was limited in his type of work or other activities	24	They performed fewer tasks than they wanted and was limited in their type of work or other activities
						1	76		76	
			During study	13	57%	0	19		23	
						1	81		77	
			After study	9	40%	0	33			
						1	67		100	
Pain item 8	12	1	Before study	23	100%	1	57	In any way	74	In any way
						2	26		22	
						3	9		4	
						4	4			
						5	4			
			During study	13	57%	1	69		69	
						2	8		15	
						3	23		8	
						4			8	
						5				
			After study	9	40%	1	33	A little.	67	
						2	33		33	
						3	22			
						4	11			
						5				
Emotional aspects item 6 and 7	12	2	Before study	23	100%	0	46	They performed fewer tasks than they wanted and did not work or did any of the activities as carefully as they usually does	44	They performed fewer tasks than they wanted and did not work or did any of the activities as carefully as they usually does
						1	54		57	
			During study	13	57%	0	31		35	
						1	69		65	
			After study	9	40%	0	61	Performed tasks as always	22	
						1	39		78	

SF12 scale domain	Number of instrument items	Number of domain items	Moment of application of the instrument	Number of respondents	Adhesion rate	Scoring the domain (for domains with more than one item the arithmetic mean of the items was calculated)				
							Score acupuncture		Score mindfulness	
						Category	By category	For item (median of categories)	By category	For item (median of categories)
Vitality item 10	12	1	Before study	23	100%	1	9	A good part of time	4	A good part of time
						2	13		17	
						3	35		30	
						4	30		22	
						5	9		22	
						6	4		4	
			During study	13	57%	1				
						2	31		15	
						3	31		54	
						4	38		15	
						5			15	
						6				
			After study	9	40%	1				Most of the time
						2	22		78	
						3	44		22	
						4	33			
						5				
						6				

SF12 scale domain	Number of instrument items	Number of domain items	Moment of application of the instrument	Number of respondents	Adhesion rate	Scoring the domain (for domains with more than one item the arithmetic mean of the items was calculated)

Social aspects item 12	12	1	Before study	23	100%	1		A little part of time		A little part of time
						2	4		4	
						3	26		13	
						4	30		39	
						5	39		44	
			During study	13	57%	1		No part of time		
						2				
						3	15		15	
						4	31		46	
						5	54		39	
			After study	9	40%	1		A little part of time		No part of time
						2				
						3	33			
						4	44		11	
						5	22		89	

Source: Authors.

Impairments

No adverse events were observed in this study with acupuncture and mindfulness. Through the accomplishment of mindfulness and acupuncture treatments in the health service of [University... - omitted for submission], it was possible to observe a beneficial change in the quality of life of the individuals participating in the study. The two techniques emerge as complementary ways of caring for and improving the quality of life of these patients, being found especially in Eastern traditions, which seek for a point of view the multidimensionality of a being and his/her health, such as traditional Chinese medicine and mindfulness.

Thus, we believe that both techniques are completed, since acupuncture has a better immediate benefit. However, the gains were not sustainable. Since mindfulness presents progressive improvement depending only on the individual to have the durability of the benefits with the practice, the patient who practices this method will maintain all the psychosocial advantages of the technique. Therefore, it is suggested that the accomplishment of both methodologies together can provide more benefits and long-lasting result.

4. Discussion

Limitations

Despite the initial interest, there was low adherence to the program due to the people's difficulty in continuing the program. However, individuals could choose which group they would like to participate in, given that some of them reported fear or chose not to undergo needle-based treatment, such as acupuncture, and opted for abbreviated mindfulness. Some questionnaires were inadequately answered with blank questions, given that there was still some difficulty for some people in filling it out. Inadequately completed questionnaires were excluded from the current study.

Generalizability

This research aimed to analyse the correlations of acupuncture and abbreviated mindfulness for the improvement of quality of life, levels of depression and anxiety, as well as attention span in healthy individuals, such as anxiety and depression and level of attention and quality of life of the individuals through non-drug treatments.

In the present study, significant improvement on levels of attention span, quality of life, anxiety and depression were observed. We found a positive difference after one month of mindfulness and acupuncture interventions as compared to the **pre-evaluation intervention**

Mindful protocols are brief, with that, it is noted that there are few studies that deal with this in the literature, therefore, this helped to motivate this study. Therefore, the authors realized that even though it is a brief protocol, it has been observed in the mindfulness group, significant improvement in the levels of mindfulness, anxiety, depression, and quality of life in an increasing way, obtaining better results one month after the intervention, than in the intervention immediate evaluation. Therefore, it can be said that this therapy has no side effects and has a low budgetary cost. In this study we treated healthy people and in the future, we expect to make a correlation showing that for pathologies such as anxiety, depression, and fibromyalgia, they may be equivalent to pharmacotherapy, cognitive behavioural therapy.

In recent years, acupuncture has become a complementary, promising, and effective treatment for symptoms of anxiety and depression, and it can work by inducing the release of norepinephrine, serotonin, and dopamine in the central nervous system. As can be seen in this study, despite the short treatment period, an improvement in the level of mindfulness, and symptoms of anxiety, depression, attention span and quality of life can already be seen right after the intervention, with no durability or sustainability of the results in the follow-up of the treatment.

Interpretation

Regarding the mindfulness intervention, our result corroborated with Demarzo (2011) who – proposed that mindfulness showed good improvements in several symptoms such as anxiety, depression, and fibromyalgia; the thesis being reinforced that the intervention of mindfulness had a result equivalent to pharmacotherapy and cognitive behavioural therapy. In the same line, our result also corroborated with Fortney et al. in which it proposes that meditation can increase satisfaction during daily work, quality of life and compassion (Fortney et al., 2013).

Meditation practices could improve the capacity to observe and contemplate the present moment (Demarzo, 2011), (Fortney et al., 2013). According to Castilho and Gouvea (2011), meditation with self- compassion is a preventive practice for women with depression. In the same line, Hollis-Walker and Colosimo (2011) proposed that meditation with self-compassion is a crucial attitude to improve mindfulness and happiness.

On the other hand, acupuncture showed effects on emotional and mental problems (Calvetti et al., 2007). In recent years, acupuncture has become a complementary intervention acting through the release of norepinephrine, serotonin, and dopamine in the central nervous system.

According to Dong et al. (2017) after the mindfulness intervention, there was a sustained improvement in levels of anxiety and insomnia through the practice itself. However, the acupuncture intervention did not present sustained and observed results over a long period of time (Calvetti et al., 2007). As can be seen in this study, there is an improvement in the level of attention span, anxiety, depression, and quality of life after a mindfulness intervention; however, an acupuncture intervention had a loss of positive results in monitoring patients, 1 month after exposure of the proposed therapy. As a next step, we suggest new research regarding the union of the two techniques to maximize the results obtained in the two interventions and to obtain a longer duration in the responses regarding the level of anxiety, quality of life and emotional effects. Regarding the characteristics of sample in the present study, there was greater adherence to both treatments by the women, being notorious that they were aware of the need to improve their lives. According to Maragno et al. (2006), Souza & Hutz (2016), the risk factors that have a higher incidence concerning quality of life, levels of depression and anxiety, as well as attention span in healthy individuals impact female gender and senility. Acupuncture participants are older than the mindfulness participants. This factor may indicate that younger people are more accustomed to the new concept or older people are more resistant to the new.

Mindfulness-based self-care programmes provide health, increasing motivation for lifestyle change that involves diet, physical activity, interpersonal relationships, and cessation of smoking and other unhealthy behaviours (Souza & Hutz, 2016).

In the present study, 13% of individuals in the mindfulness group had a poor diet and a large percentage were smokers and used alcohol. As a result, the adoption of the program may benefit these individuals.

In this research, it is observed that most of the individuals studied have religious spirituality habits, corroborating with previous studies the importance of this factor appears positively associated with quality of life, regardless other factors involved (Oliveira & Junges, 2012), (Rocha & Almeida, 2011).

According to Vectore (2005), thoughts and emotions directly influence the quality of life, increasing or paralyzing the flow of energy through the body. The cognition cannot be separated from the body and the psychic disturbances related to emotions can directly disturb the body and such organic changes act on cognition. So, we believe in the need for a broad treatment with both interventions, acupuncture and mindfulness in which it could benefit a range of psychic symptoms besides increasing the duration of positive effects over a long period of time. Following the findings, we suggest future studies.

4. Conclusion

Through the accomplishment of mindfulness and acupuncture treatments in the health service of [University... - omitted for submission], it was possible to observe a beneficial change in the levels of quality of life of the individuals participating in the study. The two techniques emerge as complementary ways of caring for and improving the quality of life of these patients, being found especially in Eastern traditions, which seek a look at the multidimensionality of a being and his/her health, such as traditional Chinese medicine and mindfulness.

Thus, we believe that both techniques are completed, since acupuncture has a better immediate effect. However, the gains were not sustainable. Since mindfulness presents progressive improvement depending only on the individual to have the durability of the benefits with the practice, the patient who practices this method will maintain all the psychosocial advantages of the technique. Therefore, it is suggested that the accomplishment of both methodologies together can provide a more effective and long-lasting result.

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