

**Use of acupuncture in depression**  
**Uso da acupuntura na depressão**  
**Uso de acupuntura en la depresión**

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This is a descriptive, quantitative and cross-sectional study carried out from January to March 2020, in Vitória, ES, Brazil. It aims to describe the effects of acupuncture on adults with depression in a psychiatric institution. Data collection used a form containing sociodemographic information, acupuncture assessment form and the Hamilton Scale. Among the twenty subjects evaluated, a comparison was made among eight subjects, of which four from the intervention group (with the application of 10 sessions with a maximum of 10 points) and four from the control group (without the application of acupuncture). The results showed that there was improvement in the signs and symptoms associated with depression, with a reduction in the Hamilton scale score from 21.75 to 8.0 in the patients who received treatment with acupuncture; that is, from the condition of severe depression to mild depression. In addition, patients mentioned improvement in their sleep, mood, libido, control of emotions, relaxation and decreased pain. Acupuncture has shown beneficial effects in patients with depression.

**Descriptors:** Acupuncture; Acupuncture therapy; Depression; Adult.

Trata-se de um estudo descritivo, quantitativo e transversal realizado de janeiro a março de 2020, em Vitória, Espírito Santo, com o objetivo de descrever os efeitos da acupuntura em adultos com depressão em uma instituição psiquiátrica. A coleta dos dados utilizou um formulário contendo informações sociodemográficas, ficha de avaliação de acupuntura e a Escala de Hamilton. Dentre os vinte sujeitos avaliados, realizou-se um comparativo com oito sujeitos, sendo quatro do grupo de intervenção (com aplicação de 10 sessões com no máximo 10 pontos) e quatro do grupo controle (sem aplicação de acupuntura). Os resultados mostraram que houve melhora dos sinais e sintomas associados a depressão com redução no escore da escala de Hamilton de 21,75 para 8,0 nos pacientes que receberam o tratamento com acupuntura, ou seja da condição de depressão grave para depressão leve. Além disso, os pacientes mencionaram melhora do sono, humor, libido, controle das emoções, relaxamento e diminuição das dores. A acupuntura mostrou efeitos benéficos em pacientes com depressão.

**Descritores:** Acupuntura; Terapia por acupuntura; Depressão; Adulto.

Este es un estudio descriptivo, cuantitativo y transversal realizado de enero a marzo de 2020, en Vitória - ES, Brasil, con el objetivo de describir los efectos de la acupuntura en adultos con depresión en una institución psiquiátrica. Para la recogida de datos se utilizó un formulario que contenía informaciones sociodemográficas, una hoja de evaluación de acupuntura y la escala de Hamilton. Entre los veinte sujetos evaluados, se realizó una comparación con ocho sujetos, cuatro del grupo de intervención (con aplicación de 10 sesiones con un máximo de 10 puntos) y cuatro del grupo control (sin aplicación de acupuntura). Los resultados mostraron que hubo una mejora de los signos y síntomas asociados a la depresión con una reducción de la puntuación de la escala de Hamilton de 21,75 a 8,0 en los pacientes que recibieron tratamiento de acupuntura, es decir, de una depresión grave a una depresión leve. Además, los pacientes mencionaron la mejora del sueño, el estado de ánimo, la libido, el control de las emociones, la relajación y la disminución del dolor. La acupuntura mostró efectos beneficiosos en pacientes con depresión.

**Descritores:** Acupuntura; Terapia por acupuntura; Depresión; Adulto.

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## INTRODUCTION

Within the scope of care practices, much has been discussed nowadays about changing the curative and pharmacotherapeutic focus on health to practices of prevention and promotion aimed at comprehensive health care, which can be achieved with *Práticas Integrativas e Complementares* - PICS (Integrative and Complementary Practices). From 2006, Brazil has inserted PICS in the *Sistema Único de Saúde* - SUS (Unified Health System) as therapeutic conducts and new strategies at the health levels (promotion, protection, maintenance and recovery), approved by the *Política Nacional de Práticas Integrativas e Complementares* - PNPIC (National Policy of Integrative and Complementary Practices)<sup>1</sup>.

Among the complementary therapies, there is the Traditional Chinese Medicine (TCM), which was created over 4,500 years ago, and brings philosophical conceptions related to health and disease, directing the treatment according to the stages of the evolution of the process of becoming ill.

Acupuncture is the most well-known resource of TCM in Western society, with a therapy based on precise diagnoses. It first appeared over 4,000 years ago, being then used in Japan, North and South Korea, and later expanding throughout Asia. It reached the West in the 1970s onwards<sup>2</sup>. Acupuncture is the means by which: “*through the insertion of needles, there is introduction, mobilization, circulation and release of energy, promoting harmonization, strengthening of organs, viscera and body*”<sup>2</sup>.

The word “acupuncture” comes from Latin *acus* (needle) and *puntura* (prick), and it is related to the stimulation of certain points of the body with a needle to restore energy balance, promote circulation of energy in the energy channels and organs and viscera, leading to a harmonization of the body and maintenance of health. There are four basic concepts of the Chinese philosophy that guide the treatment with acupuncture: the concept of *yin/yang*, the concept of the Five Movements, the concept of *zang fu* (organs and viscera) and the energy meridians<sup>2</sup>.

In *yin/yang* theory, *yang* represents motion, energy, and *yin* represents mass or matter. Energy and mass are in a constant process of transformation and complement each other. The imbalance between these aspects generates, to a large extent, the disease. TCM uses these principles to explain energy imbalances, organic and physiological functions and structures and illness, as well as serving as a guide for diagnosis and clinical treatment<sup>2,3</sup>.

Like the theory of *yin/yang*, the Five Elements or Five Movements theory forms the basis of Chinese medicine and one occupies an important place within it. The Five Movements constitute the five basic elements that are in nature: wood, fire, metal, earth and water. These movements are not associated only with elements, but with colors, flavors, sounds, organs and emotions and are interrelated through the generation and inhibition cycle and apply to the pathophysiology of diseases<sup>3-5</sup>.

The organs and viscera of the human body can be classified according to the theory of the Five Movements. The heart represents fire, the kidney represents water, the lungs represent metal, the liver represents wood and the spleen and pancreas represent earth. The onset of diseases occurs when there is a disharmony between these elements/organs and viscera, generating a pathological cycle, which can be called a contradiction or inversion of the energetic physiological sense. The study of this theory serves as a basis for determining the treatment and the healing process in acupuncture<sup>3-5</sup>.

The theory of *zang fu* (organs and viscera) studies physiology and pathology based on the energetic functioning of organ and viscera systems, being classified into *yin (zang)* organs (heart, liver, lungs, spleen, kidneys), which store substances fundamental (*Qi*, essence, blood and body fluids) and *yang (fu)* organs (small intestine, gallbladder, large intestine, stomach, bladder and triple heater) that receive and transform food and liquids for the production of *Qi* and blood. For every *yin* organ, there is a *yang* organ or viscera that complements it; thus organs

and viscera are combined in pairs, called coupled, corresponding to the symbolized element within the theory of the Five Movements and are related to the energy meridians or channels<sup>5</sup>.

The acupuncture points are located in the energetic channels or meridians, which protrude into the skin. They are local points or pathways into which the needle is inserted, located between tissues, bones and tendons or soft or rigid parts of the tissues<sup>4</sup>.

Acupuncture points can have systemic action, local (specific actions) or at a distance. They function as a means of communication between the internal and external environment of the body, directing energies, both perverse and heavenly, to the main channels and, in turn, to *zang fu* and tissues. They act on the autonomic nervous system and central nervous system, stimulating the circulation of *Qi* and *Xue*, activating the release of hormones, neurotransmitters and reactions of analgesia, hypoalgesia, hyper or hypofunction of organic structures. In the different pictures of syndromes and dysfunctions of *zang fu* can be combined with different acupuncture points<sup>2,4</sup>.

Psychic disorders can be treated by stimulating acupuncture points to restore the free flow of *Qi* and emotions, as in the case of depression. In Western medicine, the term depression refers to both a normal affective state (sadness) and a syndrome (mood swings, including other cognitive, psychomotor and vegetative changes), a symptom (can arise in the most varied clinical conditions, or situations adverse events, such as post-traumatic stress, dementia, schizophrenia, and others) or a disease (major depressive disorder, melancholy, dysthymia, premenstrual dysphoric disorder, among others), as well as associated neuronal or neuro-endocrine phenomena<sup>6,7</sup>.

The diagnosis of depression is characterized by affective, psychomotor, ideational, self-assessment and cognitive symptoms, lasting at least two weeks (in the case of major depression) and up to two years (in dysthymia). According to the Diagnostic and Statistical Manual of Mental Disorders - 5th edition - DSM-V<sup>8</sup>, depressive disorders include major depressive disorder, disruptive mood disorder, dysthymia, premenstrual dysphoric disorder, substance/medication-induced depressive disorder, depressive disorder due to another medical condition, other specified depressive disorder, or other unspecified depressive disorder<sup>7,8</sup>.

An epidemiological study carried out in Brazil revealed a high prevalence of mental disorders in the Brazilian adult population when compared to underdeveloped and developing countries, with depression, anxiety disorders, phobias and use of psychoactive substances as the four most common disorders, with a prevalence of 30% and 50% throughout life and 19% and 34% a year<sup>9</sup>.

Studies<sup>10,11</sup> have estimated that, currently, in the world, the prevalence of depression among adults is around 3.0 to 6.6% per year (12 months), and up to 16.2% throughout life, with more than 15% in countries like the United States, France and the Netherlands. In Brazil, a community survey<sup>12</sup> with 1464 residents over the age of 18 living in two neighborhoods in the city of São Paulo, revealed that 45.9% of respondents had at least one diagnosis of mental disorder throughout their lives, 26.8% in the year (12 months) and 22.2% in the month prior to the interview.

Another study<sup>13</sup> with people between 15 and 75 years old, in 2007 and 2008, revealed a prevalence of depression of 17.4% and 19.9% throughout life, respectively. Considering the international scenario, it can be inferred that, in Brazil, the prevalence of depression is high and generates major impacts on physical and mental health, as well as on people's quality of life<sup>7</sup>.

For TCM, mental illnesses or psychiatric syndromes are called *Dian Kuang*, with no distinction between schizophrenia, depression, bipolar disorder, psychotic or paranoid states<sup>3,14</sup>. They are grouped in *Dian* (type *yin*, by obstructing the flow of *Qi*, depressive pole, with characteristics of dullness, apathy) or *Kuang* (type *yang*, by changes in the mind by fire, manic pole with excessive mental or motor activity). These syndromes are caused by changes

or disharmonies between *yin* and *yang*, obstructions of *Qi* and blood or by the presence of mucus and heat<sup>3</sup>.

*Dian Kuang* syndrome is subdivided into excess and deficiency. *Dian* syndrome due to excess refers to obstruction of liver *Qi* and mucus, associated with frustration and excessive worry, both related to the liver and spleen. The treatment aims to regulate the flow of *Qi*, removing stagnation, eliminating mucus and restoring consciousness. *Dian* syndrome due to deficiency is associated with disharmony of the heart and spleen, which consumes *Qi* and blood, preventing the heart from being nourished. The treatment is to nourish the heart, regulate the flow of *Qi* and calm the mind<sup>3</sup>.

In *Kuan (yang)* syndromes, the main associated cause is the change in *shen* caused by the rising fire that affects the heart, liver and gallbladder. *Kuan* syndrome due to excessive fire rise is related to the fire mucus that rises and obstructs the mind due to hyperactivity of the liver (excess of anger). The treatment consists of draining the mucus and lightening the fire. The *Kuan* syndrome due to deficiency refers to the consumption of *yin* that generates heat and fire due to the prolonged state of excitement and mania. Treatment consists of nourishing *yin*, calming the mind and reducing fire, stabilizing emotions<sup>3</sup>.

In addition to *Dian Kuang* syndromes, psychic disorders can be grouped according to changes in *yin yang*, *Qi*, blood and *zang fu*. The use of points that act directly on the *shen*, heart and liver are indicated for most syndromes related to psychic disorders. In depression, the liver will always be specifically involved, because it houses the ethereal soul (*Hun*), which is responsible for life projects, plans, ideas, purposes, relationship with other people, among others. Thus, if the ethereal soul is in excess due to hyperactivity of the mind (*shen*-heart) or lack of control, the person manifests a manic condition; if disabled, the person tends to become depressed. Depression can be due to some pathogenic factors inhibiting the ethereal soul or the free flow of *Qi* and emotions (for example, due to stagnation or deficiency of the liver, spleen or kidney)<sup>3</sup>.

Acupuncture can be highly effective in the treatment of depression, removing stagnation and allowing the free flow of *Qi* and emotions, expelling pathogenic factors and nourishing the deficient organs, generating improvement in the symptoms and quality of life of people<sup>15</sup>.

Acupuncture has been a technique used to treat depression, as it offers possibilities of application in any age group and can be associated with other therapies, favoring the reduction of the use of medications and intoxications, guaranteeing an improvement in quality of life and better results treatment of health disorders. Thus, the present study aims to describe the effects of acupuncture on adults with depression in a psychiatric institution.

## METHODS

This is a descriptive and quantitative study conducted with adult patients (men and women) admitted in a private psychiatric institution with clinical diagnosis of depression, from January to March 2020, in the city of Vitória, in the state of Espírito Santo.

This institution operates 24 hours a day and is prepared to admit psychiatric patients (adolescents, adults and elderly) in times of instability, offering adequate infrastructure for psychiatric diagnosis and treatment, and also acts as a special crisis care unit, specialized psychiatric hospitalization, day hospital and outpatient clinic.

Pregnant women, patients on coagulant medication or with extensive skin lesions, those who voluntarily interrupted treatment with acupuncture, who missed two consecutive sessions or on medical recommendation were excluded.

The subjects were randomly divided into two groups, by means of a previous drawing by computer program. The intervention group (IG) was composed by subjects who underwent the initial assessment and received treatment with 10 acupuncture sessions, 1 to 2 times a week. And, the control group (CG) was composed by subjects who only underwent the initial assessment. The two groups (GI and GC) were later reassessed with the same initial parameters.

The following research tools were used: Form containing general and sociodemographic characterization data and acupuncture assessment (tongue, pulse and general inspection). Another tool used in the research was the Hamilton Depression Rating Scale (HAM-D), version containing 17 items, to measure the state of depression. The score used was less than 7 = normal; 8 to 13 = mild depression; 14 to 18 = moderate depression; 19 to 22 = severe depression;  $\geq 23$  = very severe depression<sup>16</sup>.

The sessions used a maximum of 10 disposable stainless steel needles, registered with the Brazilian *Agência Nacional de Vigilância Sanitária* - ANVISA (National Health Surveillance Agency), size 0.25mm x 40mm, with deep insertion until the patient felt a sensation of "of Qi" (sensation of pain, numbness)<sup>4</sup>. Cotton and 70% Isopropyl Alcohol were used to clean the area before applying acupuncture needles. The retention time of the needles was 30 minutes and the assistance was carried out on a stretcher or in the patient's bed in the clinic environment with a higher education professional, an acupuncture student under the supervision of a professional already trained as an acupuncturist.

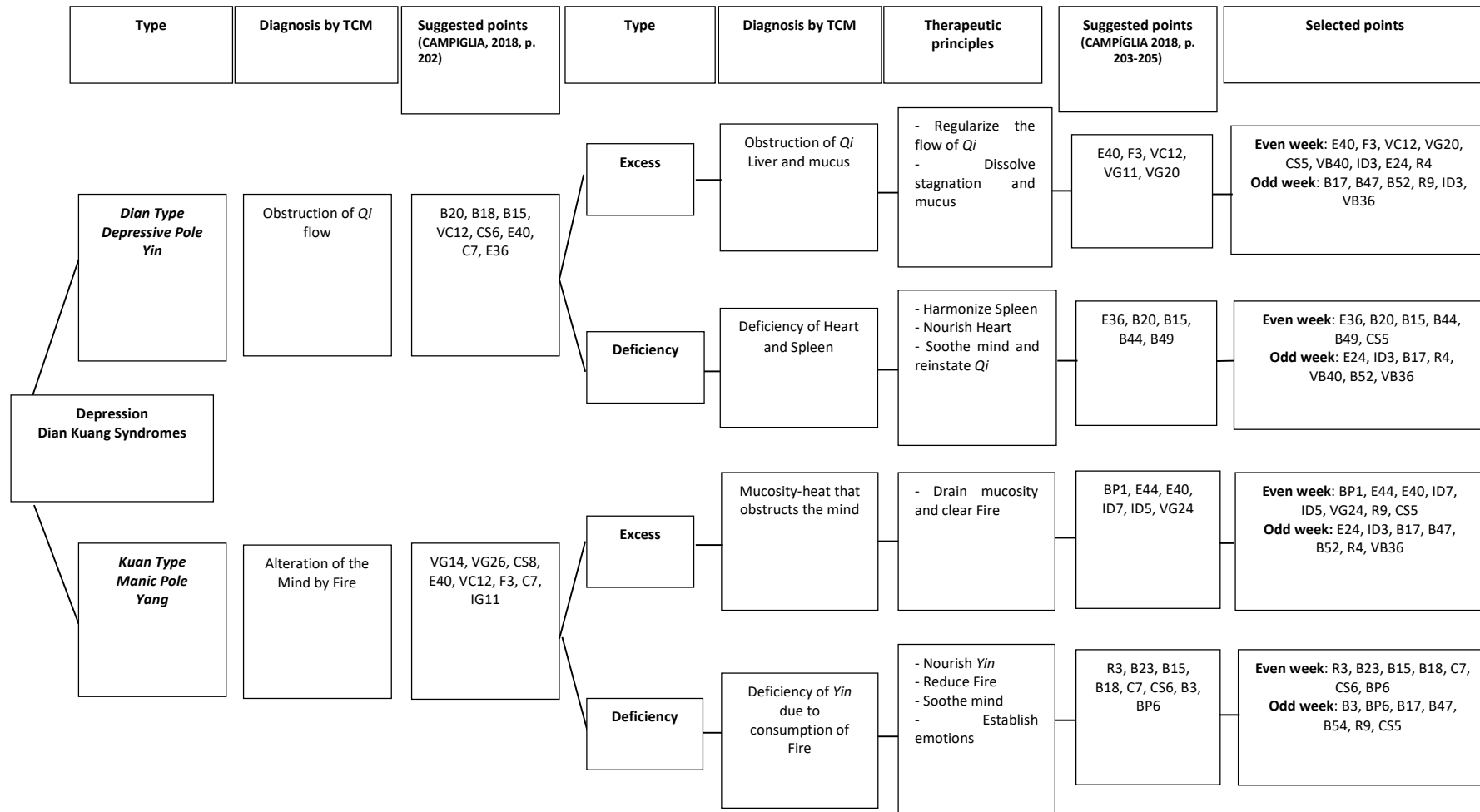
The initial assessment, reevaluation and intervention were carried out by different people, both health professionals, trained in occupational therapy and graduate students in integrative acupuncture with outpatient clinical practice. The number of 10 sessions was defined due to the average length of stay of patients in the psychiatric clinic.

The therapeutic and diagnostic principles were defined based on the initial assessment, general inspection and assessment of pulse and tongue. Depending on the syndrome, therapeutic perspectives were defined, such as: regularizing the flow of Qi, removing stagnation, eliminating mucus, nourishing the heart and calming the mind. The selection of points was based on the treatment protocol for *Dian* and *Kuang* syndrome, due to excess or deficiency suggested by Campíglio<sup>3</sup>, grouped by even week and odd week, as in Figure 1.

The descriptive analysis of the data was performed using frequency tables using Microsoft Office Excel, version 2010.

This study was submitted to and approved by the Research Ethics Committee of Faculdade Inspirar, registered at Plataforma Brasil under number 3,779,278 and CAAE: 25581719.1.0000.5221.

Figure 1. Aspects for the treatment of Depression in Acupuncture. Vitória - ES, 2020.



## RESULTS

Twenty patients undergoing treatment at the psychiatric clinic were evaluated, of which 10 in the IG and 10 in the CG. However, in both groups, there were subjects who interrupted the research (six in each of them), leaving four for IG and four for CG. The reasons for giving up were: personal wish, change in the clinic's routine, absence from more than 2 consecutive sessions, discharge from the clinic and living in another state, infection with other diseases (Dengue, Chikungunya, Pneumonia) and the coronavirus pandemic. Table 1 shows the subjects' sociodemographic data in absolute and percentage values.

**Table 1.** Patients according to sociodemographic data. Vitória - ES 2020.

Variable		No.	%
<b>Gender</b>	Female	16	80.0
	Male	4	20.0
<b>Origin</b>	Great Vitória	11	55.0
	Other state	6	30.0
	Other municipality	3	15.0
<b>Marital status</b>	Married/Civil union	11	55.0
	Divorced	3	15.0
	Single	6	30.0
<b>Educational level</b>	Middle School (incomplete)	1	5.0
	High School	7	35.0
	Undergraduate Degree (complete)	3	15.0
	Undergraduate Degree (incomplete)	6	30.0
	Graduate Degree	3	15.0
<b>Age</b>	30-39 years	6	30.0
	40-49 years	5	25.0
	50-59 years	5	25.0
	Up to 29 years	4	20.0
<b>Profession</b>	Butcher	1	5.0
	Community agent	1	5.0
	Analyst	1	5.0
	Education assistant	1	5.0
	General services assistant	1	5.0
	Kitchen assistant	1	5.0
	Cook	1	5.0
	Engineer	1	5.0
	Cash inspector	1	5.0
	Military serviceman	1	5.0
	Does not work	3	15.0
	Professor	3	15.0
	Nursing technician	1	5.0
	Mechanical technician	1	5.0
	Agriculture and livestock technician	1	5.0
	Security guard	1	5.0
<b>Work situation</b>	On sick leave	15	75.0
	Retired due to illness	2	10.0
	Does not work	3	15.0
<b>Satisfaction with work</b>	No	9	45.0
	Does not work	3	15.0
	Yes	8	40.0
<b>Religion</b>	Agnostic	1	5.0
	Catholic	1	5.0
	Spiritist	2	10.0
	Evangelical	11	55.0
	None	5	25.0

Regarding the causes associated with depression, 30% (n=6) was related to frustrations, stress and anger at work, 35% (n=7) to losses and death of a loved one, 75% (n=15) to traumas in childhood, 15% (n=3) to trauma in adulthood (sexual abuse, domestic violence) and 10% (n=20) related to drug use.

As for the treatment regimen, 40% (n=8) of patients were admitted to the clinic and 60% (n=12) were on a day hospital or outpatient treatment. As for the diagnosis, according to the ICD-11, 25% (n=5) were classified as depressive disorders not associated with other disorders, and 75% (n=15) were classified as depressive disorders associated with other disorders such as anxiety, stress, drug use, personality disorder and panic disorder.

As for classification according to the Hamilton scale, 60% (n=12) were classified as very severe depression, 30% (n=6) as severe depression and 10% (n=2) as moderate depression. Regarding the number of medications used, the average was 3.5 per subject. As for the number of suicide attempts, the average was at least 1.6 attempts per subject, and were related to medication 50% (n= 10), hanging 25% (n = 5), self-mutilation 15 % (n=3) and suicidal ideas, gestures and behaviors without attempt 25% (n=5).

The diagnosis at TCM was defined according to the evaluation with inspection and general observation, and it was noted that most patients had a withdrawn posture 40% (n= 8), weak voice 45% (n=9), pale face 55% (n=11), more *Yin* aspect 75% (n=15), dry skin 75% (n=15), listless eyes 50% (n=10), shortness of breath and wheezing 80% (n=16). With regard to sleep, most reported insomnia in the three initial, intermediate and final stages 90% (n=18), with excessive dreams, nightmares and mental restlessness in 25% (n=5) of the subjects. As for sexual activity, 70% (n=14) reported decreased libido. As for excretions, the majority reported hard stool 65% (n=13) and gastrointestinal problems 90% (n=18), and, in women, gynecological problems (cramps, fibroids, premenstrual tension, irritability, clots and dysmenorrhea) were reported in 80% (n=16) of the interviewees. As for the sensations, the study subjects reported a feeling of anguish 90% (n=18), a feeling of a lump in the throat 50% (n=10), palpitations 25% (n=5), weight on the shoulders 55% (n=11) and pressure in the head and headache 80% (n=16). Regarding emotions, there was a predominance of sadness 90% (n=18), fear 70% (n=14), anger 20% (n=4) and anxiety 10% (n= 2).

As for the assessment of tongue and pulse, Table 2 shows the absolute and percentage values, according to the diagnosis in TCM. Tables 3 and 4, on the other hand, show a comparison between the IG and the CG, regarding the tongue and pulse assessment and the Hamilton score of the initial assessment and reevaluation for depression.



**Table 2.** Pulse and Tongue Assessment and Diagnosis according to the TCM of patients with depression at the Psychiatric Institution in Vitória-ES, 2020.

		N(N=20)	%
<b>Tongue color</b>	Pale	3	15.0
	Pale. Purplish sides	1	5.0
	Pale. Reddish sides	3	15.0
	Pale. Reddish tip and sides	2	10.0
	Purple. Purplish sides	1	5.0
	Purple. Reddish tip and sides. Purple center	2	10.0
	Red with coating	3	15.0
	Red with coating. Reddish tip	3	15.0
	Red with no coating	2	10.0
<b>Tongue shape</b>	Enlarged	12	60.0
	Thin	3	15.0
	Partially enlarged	5	25.0
	Short	6	30.0
	Long	14	70.0
	Flaccid	15	75.0
<b>Teeth marks</b>	Stiff	5	25.0
	No	2	10.0
<b>Teeth marks</b>	Yes	18	90.0
	<b>Fissuras</b>	Fissure in the heart area	4
Short fissures in the stomach area		3	15.0
Deep fissures in the stomach area		7	35.0
Deep fissures in the stomach, heart and kidney areas		1	5.0
Deep fissures in the stomach, lung, heart and kidney areas		1	5.0
Deep fissures in the lung and heart areas		1	5.0
No fissures		3	15.0
<b>Tongue mobility</b>	Diverted	4	20.0
	Normal	4	20.0
	Trembling	12	60.0
<b>Tongue coating</b>	No coating	2	10.0
	Thick and rooted	5	25.0
	Thick and rootless	5	25.0
	Thin and rooted	4	20.0
	Thin and rootless	4	20.0
<b>Color of coating</b>	Yellow	3	15.0
	No coating	2	10.0
	White	15	75.0
<b>Texture of coating</b>	Peeling and dry	3	15.0
	Sticky	2	10.0
	Dry	11	55.0
	Damp	4	20.0
<b>Pulse</b>	Deep, slow, empty, weak	13	65.0
	Deep, fast, empty, weak	2	10.0
	Superficial, full and fast	2	10.0
	Superficial, full, fast, tense	2	10.0
	Superficial, slow, empty, weak	1	5.0
<b>Diagnosis by TCM</b>	<i>Dian</i> Syndrome by Deficiency	12	60.0
	<i>Dian</i> Syndrome by Excess	3	15.0
	<i>Kuang</i> Syndrome by Excess	2	10.0
	<i>Kuang</i> Syndrome by Deficiency	3	15.0

Table 3. Comparison between IG and CG regarding tongue and pulse assessment. Vitória - ES, 2020.

	<b>Tongue</b>	<b>Tongue</b>	<b>Pulse</b>	<b>Pulse</b>
<b>Intervention Group</b>	<b>Evaluation</b>	<b>Re-evaluation</b>	<b>Evaluation</b>	<b>Re-evaluation</b>
<b>Person 1</b>	Red with no coating. Enlarged, long, flaccid, tooth marks, deep fissures in the center, trembling. White, thin, moist coating.	No change	Superficial, full and quick	Superficial, regular
<b>Person 2</b>	Red with coating. Enlarged. Flaccid, long. Trembling. Deep fissures in the stomach, lung, heart and kidney areas. Thin, yellow and dry coating.	Change in coating, thick, whiteness and dry.	Superficial, full, fast and tense	Superficial, fast
<b>Person 3</b>	Pale. Partially enlarged. Flaccid. Long. Diverted. Fissure in the heart area. Thick, rootless white coating, dry and white.	No change	Deep, slow, empty and weak	Superficial, weak, empty
<b>Person 4</b>	Pale. Thin, short, flabby. Trembling. Fissure in the heart area. Thick, rooted, white and dry coating.	No change	Deep, slow, empty and weak	Deep, full, regular
	<b>Tongue</b>	<b>Tongue</b>	<b>Pulse</b>	<b>Pulse</b>
<b>Control Group</b>	<b>Evaluation</b>	<b>Re-evaluation</b>	<b>Evaluation</b>	<b>Re-evaluation</b>
<b>Person 1</b>	Pale. Reddish tip and sides. Enlarged. Long, flaccid. Short fissures in the stomach area. Thick, rooted, white and dry coating.	No change	Deep, slow, empty and weak	Deep, fast and empty
<b>Person 2</b>	Pale. Purplish sides. Enlarged. Long. Flaccid. Thick, white and dry coating.	Petechiae in heart region.	Deep, slow, empty and weak	No change
<b>Person 3</b>	Pale. Reddish tip. Partially enlarged. Long, flaccid. Short fissures in stomach area. Thick, rooted, white and dry coating.	Change in petechiae in heart region.	Deep, fast, empty and weak	No change
<b>Person 4</b>	Pale. Reddish tip. Enlarged. Short, stiff. Diverted. Deep fissures in stomach, heart and kidney areas. Thin coating, rootless, white and dry.	No change	Deep, slow, empty and weak	No change

**Table 4.** Comparison between the IG and CG, regarding the Hamilton score. Vitória-ES, 2020.

Intervention Group	Initial Score	Final Score
Person 1	20	13
Person 2	20	6
Person 3	24	9
Person 4	23	4
Mean $\pm$ sd	21.75 $\pm$ 2.1	8.0 $\pm$ 3.9
Control Group	Initial Score	Final Score
Person 1	19	12
Person 2	20	31
Person 3	28	21
Person 4	30	26
Mean $\pm$ sd	24.25 $\pm$ 5.6	15.20 $\pm$ 8.1

## DISCUSSION

Studies all over the world used the combination of number of years lived with disability and the number of years lost due to premature death caused by the disease as a form of measurement identified depression (13%) as the leading cause of disability among all health problems and sick leaves, limiting physical, personal and social functioning<sup>17</sup>. A survey<sup>18</sup> revealed that 72% of cases of absence from work were related to depression and that job dissatisfaction would lead to a significant increase in depressive symptoms and sleep-related disorders, such as insomnia.

Other studies point to a higher incidence of depression in women, the need to leave work and an increasing incidence in younger age groups<sup>19-21</sup>. The World Health Organization<sup>19</sup> (WHO) highlights that women are 10 to 20% more likely to develop depression than men. Studies carried out in Brazil<sup>20,21</sup> showed the prevalence of more significant depression in women, with a lower educational level, in the age group between 50-59 years (22%), with 19% in the age group between 30-39 and 20-29 years, most practiced some religion and were married or on a civil union, corroborating the results found in this research.

As for education, the incidence at lower levels of education when performed in the population studied, different from what was found in this research, since higher education level prevailed among the subjects. This is due to the place of study, which was a private clinic where the subjects had a higher social level between middle and upper class. Religion, despite influencing the way people can deal with situations of stress, suffering or problems, was not identified as a protective factor for depression. On the contrary, some aspects of religion can lead to feelings of guilt, fear, doubt and even contribute to depression<sup>20</sup>.

With regard to causes related to depression, the WHO report<sup>19</sup> reveals that several factors can influence the onset of depression, highlighting a complex interaction of social, psychological and biological factors, such as adverse events such as unemployment, psychological trauma, grief, among others. In this study, the main causes mentioned by the subjects were childhood trauma, drug use, stress, anger and grief or loss, with a predominance of childhood trauma and abuse. Studies that link childhood trauma with psychopathologies are still scarce in Brazil.

A population-based cross-sectional study<sup>22</sup> carried out in 1996, in Pelotas, in the state of Rio Grande do Sul, analyzed the association between stressful events that occurred in childhood and adolescence (losses due to death or abandonment, separation from parents, physical abuse, sexual abuse, presence of a family member with chronic illness or alcoholic) with psychiatric disorders in adulthood, obtaining a statistically significant prevalence of 23.8%. Within TCM, emotional changes are etiological factors for all mental illnesses, highlighting some factors such as traumatizing emotional experiences, frustrations, loss of loved ones, chronic diseases and drug use occurring both in childhood, young adult age and in adulthood<sup>3</sup>.

As for the treatment of depression, most people will need, at some point, some type of treatment, whether inpatient or outpatient. In this study, most patients underwent outpatient

treatment. This type of treatment is in line with the guidelines recommended by the ordinances of the Ministry of Health of Brazil, since psychosocial care services assume a strategic role, as substitute and effective devices in changing the mental health care model, promoting welcoming and care and the social reintegration of people with mental disorders.

Regarding diagnosis, there was a predominance of depressive disorders associated with other disorders, such as: anxiety, stress, drug use, personality disorder and panic disorder. The association between depression and other disorders is very common and has an extremely negative impact on the prognosis of the disease, increasing socio-occupational dysfunction and the incidence of suicide attempts, generating a worse response to treatment<sup>21</sup>.

As for the classification according to the Hamilton scale, the average score found was 23.4 + 4.5, with 60% (n = 12) of the subjects being classified as very severe depression, 30% (n = 6) with depression severe and 10% (n=2) with moderate depression. An epidemiological investigation carried out in southern Brazil<sup>23</sup> obtained an average score of 16.6 + 6.6 for the group that reported depressive symptoms, characterized as moderate depression.

The Hamilton scale was designed exclusively for patients previously diagnosed with depressive disorder and the way the multiple choice items were organized serves to identify the severity of depressive symptoms. In the Hamilton scale, symptoms are addressed in the categories of mood, cognitive, somatic, motor, social and anxiety, with cognitive and somatic aspects corresponding to 50% of the total score of the scale, so the results depend on the changes experienced by severely ill patients. depressed<sup>16</sup>.

As for the comparison between the IG and CG, it was observed that the mean Hamilton score in the initial assessment in the IG was 21.75 + 2.1 (severe depression). In the final reassessment, the score was 8.0 + 3.9 (mild depression). There was a significant reduction in depressive symptoms from severe to mild. In the CG, the mean Hamilton score at the initial assessment was 24.25 + 5.6 (severe depression). In the reassessment, this average was 15.20 + 8.1 (moderate depression), with a reduction in depressive symptoms from severe to moderate.

As for the reports in the reevaluation, GI patients, in general, mentioned improved sleep, mood, initiative, control of emotions, improvement of sensations (anxieties, fears, shortness of breath), libido, general relaxation, more disposition, improvement of gastrointestinal symptoms and reduction of pain in general. The subjects of the CG did not report any significant improvement regarding the symptoms initially identified. All patients in this study were using one or more antidepressant drugs, so acupuncture was applied as a complementary treatment.

Acupuncture has proved to be a technique with positive results similar to those produced by antidepressant drugs and without side effects, which is a great advantage<sup>24</sup>. A study<sup>25</sup> carried out in an outpatient clinic of a college in India, using the Hamilton scale as a parameter, evaluated the effect of acupuncture on the state of thyroid hormones in endogenous depression in 10 patients. After 20 sessions, in the reassessment, there was a significant reduction in the Hamilton score from 7.0 + 3.56 to 3.2 + 1.93. In addition, there was a significant improvement in symptoms such as insomnia, depression, restlessness, body aches and loss of appetite from the tenth session.

A single blind study<sup>26</sup>, carried out in 70 patients, with placebo control group, testing the effectiveness of acupuncture as an adjunct to pharmacological treatment obtained a better result with reduction of depressive symptoms in those patients who received pharmacological treatment combined with acupuncture.

The findings of a systematic review and meta-analysis<sup>27</sup> that evaluated 18 randomized clinical trials on the effectiveness of acupuncture in treating insomnia in depressed patients revealed that acupuncture treatment brought significant improvements in sleep quality when compared to those individuals treated only with medication, and the association of acupuncture with medication brought greater benefits for the reduction of insomnia and other depressive symptoms (mood, libido and pain in general). Another systematic review and meta-analysis<sup>28</sup> analyzed the publications of clinical trials on the use of acupuncture in depression, carried out

between 1980 and 2018, found significant results regarding the reduction of the severity of depression and the use of acupuncture as an adjunct to pharmacological treatment.

As for the number of suicide attempts, the average was at least 1.6 attempts per subject, and were related to different means. Depression is already considered by WHO as a mental disorder directly related to suicide attempts and consummated suicide. Several studies point to an association between major depression and suicidal behavior in different methodological designs and populations<sup>22,26,29</sup>. A study<sup>29</sup> carried out with 112 outpatients in Chile, using the Hamilton scale, found a significantly higher risk of suicide in patients with depression. The reason or means by which suicidal behavior is associated did not appear to have much clinical relevance.

As for observation and inspection within the TCM in the evaluation of the tongue, aspects related to color, shape, mobility and coating (color and texture) were observed. As for the color of the tongue, there was a predominance, in this study, of 15% (n = 3) for the pale, red with reddish tip, red reddish tip with coating. Regarding the shape of the tongue, it was observed that the majority was long (70% (n = 14)), flacid (75% (n = 15)), with tooth marks (90% (n = 18)) and fissures in the stomach area (35% (n=7)) and heart (20%(n=4)). Regarding the mobility of the tongue, most had a trembling tongue (60% (n = 12)). As for the tongue coating, there was a predominance of white coating (75% (n = 15)), dry (55% (n = 11)), thick with or without root (25% (n = 5)). In the pulse assessment, a deep, slow, empty and weak type was observed in 65% (n = 13) of the subjects.

Observation is one of the most important aspects of TCM diagnosis, based on the principle that internal organs and their disharmonies are manifested externally through clinical manifestations that the ancient Chinese call of "images", such as: image of the pulse, the voice, the face, a pattern, and others. Observation and inspection of the voice, skin, eyes, tongue and pulse are some essential signs in the diagnosis of depression. The skin tends to be greyish or greenish and dull, or even pale, the eyes have no shine, the voice may be weak, the tongue has a red tip with a fissure in the heart region and a rope pulse, thin or weak/rough depending from the condition of fullness or excess and emptiness or deficiency. The diagnosis will depend on the internal organ in disharmony and the pattern of excess or deficiency that each individual presents<sup>30</sup>.

Regarding the final diagnosis in TCM<sup>3</sup>, it was found that 60% (n = 12) of the subjects had *Dian* syndrome due to deficiency, followed by *Dian* syndrome due to excess (15% (n = 3)), *Kuang* syndrome due to excess (15% (n = 3)) and *Kuang* syndrome for disability (10% (n = 2)).

The diagnosis in TCM of mental illnesses is made by grouping *Dian Kuang* syndromes, with no distinction between psychiatric syndromes, with fullness concepts being applied to patterns of excess and the concept of emptiness to patterns of deficiency, attributing depression to stagnation of liver *Qi* in its various manifestations, with the presence of heat or phlegm, phlegm-fire affecting the mind, blood stasis, among others<sup>30</sup>. In the later stages of depression the emptiness patterns that accompany deficiency of spleen and heart blood, deficiency of heart *yang*, deficiency of liver blood, deficiency of kidney and heart and deficiency of kidney *yang*<sup>3</sup> appear.

*Dian* syndrome is typically more *yin*, often caused by traumatic emotional experiences in childhood or adulthood, frustrations, loss of a loved one, or use of alcohol and drugs. The prolonged depression process leads to a consumption of blood and *Qi*, preventing the heart from being nourished, leading to a deficiency of the heart and the spleen<sup>3,5,30</sup>. In this study, there was a higher prevalence of *Dian* syndrome due to deficiency related to the consumption of energy from the heart and spleen.

For TCM, the spleen is related to intellect, reasoning and concentration. The heart houses the mind (*shen*), which is related to emotional aspects. When the heart is strong, blood is abundant and mental activity, emotional life, memory, reasoning is normal and sleep is restful. When the heart is weak, the blood is deficient, the individual may have mental problems,

insomnia, memory impairment and difficulty thinking. Deficiency of blood in the heart in depression leads to symptoms such as nightmares, insomnia, palpitations, fear, regret, easy crying, lack of appetite and apathy, deep sadness and persecutory thoughts. Acupuncture treatment consists of calming the mind, nourishing the heart, restoring *Qi* and nourishing the spleen<sup>3,5,30</sup>.

Comparing the GI and the CG in this research with regard to language assessment, there were no significant changes after the acupuncture sessions. As for the pulse, minimal changes were observed in Persons 1, 2 and 4 of the IG at the time of the reassessment. In the CG, there was a change in pulse only in Person 1.

The assessment of tongue and pulse are essential pillars for diagnosis in TCM, as they reflect the imbalance patterns and the detailed state of the internal organs. Observation of the body of the tongue, shape, coating and moisture are important, as they can provide clear information about the patient's disharmony. The palpation of the pulse reflects the general state of *Qi* and blood, the state of the *yin* and *yang* organs, the state of the body parts and the constitution of the subject (*yin/yang*) and is subject to short-term transitory influences, being more subjective, unlike language that reflects more stable and permanent conditions. This may explain why the changes observed in the subjects submitted to acupuncture treatment were more evident in the wrist than in the tongue<sup>3,30</sup>.

## CONCLUSION

Much has been advanced in the treatment of depression with the implementation of new therapies complementary to conventional pharmacological treatments with the use of psychotherapy, natural and alternative treatments, homeopathy and the use of integrative practices as adjuncts to the treatment of depression such as *reiki*, meditation, flowers, acupuncture, and others. Such therapies are considered to alleviate side effects of pharmacological treatment, improve people's quality of life and generate savings for services as they are low-cost technologies.

As limitations in this study, there is a small number of subjects who completed the follow-up. It must be considered that, with a small sample, it is difficult to make generalizations and significant relationships between the results achieved and the applied intervention. Turnover, dynamics, the routine of the research institution, the onset of the coronavirus pandemic were also factors that influenced losses.

Further studies of randomized controlled trials are needed to assess the efficacy, clinical benefits and long-term benefits of acupuncture in depression.

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### CONTRIBUTIONS

**Elem Guimarães dos Santos** and **Mayra Passabon Amorim** participated in the design, collection and analysis of data and writing. **Edson Theodoro dos Santos Neto** contributed to the analysis and interpretation of the data and, review. **Marina Médici Loureiro Subtil** worked in the design, analysis and interpretation of data and reviewing.

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