

## THE EFFECT OF ACUPUNCTURE ON THE RELIEF OF PHYSICAL AND EMOTIONAL DISCOMFORT DURING PREGNANCY

Efeito da acupuntura para alívio dos desconfortos físicos e emocionais na gestação

Efecto de la acupuntura para alivio de los desconfortos físicos y emocionales en la gestión

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### ABSTRACT

**Objective:** to analyze the effects of acupuncture on physical and emotional discomfort present during gestation. **Method:** cross-sectional study carried out with 45 pregnant women in the second and third gestational trimesters receiving prenatal care for pregnancy of normal risk who underwent acupuncture sessions. Each pregnant woman attended two sessions per week with a duration of 30 minutes each. **Results:** after six sessions of acupuncture using the B57, B40, VB30, B23, B60, VG20 systemic points and the Shemen, lumbar and sciatic auriculotherapy points, there was a significant improvement in several common gestational complaints reported by the participants, such as: body relaxation (97.8%); change in stress levels (82.2%); sleep (86.7%); mood (82.2%); patience (80%); energy (77.8); anxiety (66.7%), among others. **Conclusion:** acupuncture contributed positively to the improvement of the physical and emotional symptoms mentioned by the pregnant women and can be used as an alternative for the promotion of gestational health.

**Descriptors:** Nursing; Acupuncture; Pregnant women.

### RESUMO

**Objetivo:** analisar os efeitos da acupuntura nos desconfortos físicos e emocionais presentes na gestação. **Método:** estudo transversal realizado com 45 gestantes do segundo e terceiro trimestre gestacional, atendidas no pré-natal de risco habitual e que realizaram sessões de

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acupuntura. Cada gestante fazia duas sessões por semana com duração de 30 minutos, cada uma. **Resultados:** evidenciou-se que, após seis sessões de acupuntura, utilizando os pontos sistêmicos B57, B40, VB30, B23, B60, VG20 e pontos de auriculoterapia: *Shemen*, lombar e ciático, houve uma significativa melhoria de diversas queixas comuns na gestação, relatadas pelas participantes, como: relaxamento do corpo (97,8%); mudança do estresse (82,2%); sono (86,7%); estado de humor (82,2%); paciência (80%); energia (77,8); ansiedade (66,7%), dentre outros. **Conclusão:** a acupuntura contribuiu positivamente na melhoria de sintomas físicos e emocionais referidos pelas gestantes, podendo ser usada como alternativa para a promoção da saúde gestacional.

**Descritores:** Enfermagem; Acupuntura; Gestantes.

## RESUMEN

**Objetivo:** analizar los efectos de la acupuntura en las molestias físicas y emocionales presentes en la gestación. **Método:** estudio transversal realizado con 45 gestantes del segundo y tercer trimestre gestacional, atendidas en el pre natal de riesgo habitual y que realizaron sesiones de acupuntura. Cada gestante hacía dos sesiones por semana con una duración de 30 minutos cada una. **Resultados:** en la mayoría de los casos, se observó que, después de seis sesiones de acupuntura, utilizando los puntos sistémicos B57, B40, VB30, B23, B60, VG20 y puntos de auriculoterapia: *Shemen*, lombar y ciático, hubo una significativa mejora de diversas quejas comunes en la gestación, de las participantes, como: relajación del cuerpo (97,8%); cambio del estrés (82,2%); (86,7%); estado de humor (82,2%); (80%); energía (77,8); la ansiedad (66,7%), entre otros. **Conclusión:** la acupuntura contribuyó positivamente en la mejora de los síntomas físicos y emocionales referidos por las gestantes, pudiendo ser usada como alternativa para la promoción de la salud gestacional.

**Descritores:** Enfermería; La acupuntura; Las mujeres embarazadas.

## INTRODUCTION

Motherhood is a personal experience experienced by each woman in a unique way.<sup>1</sup> Therefore, prenatal care should include not only health promotion and prevention practices, but also diagnosis and appropriate treatment of possible problems arising during this period.<sup>2</sup>

Pregnancy is a period of great changes for women, represented by hormonal variation and changes in body characteristics that affect their daily lives, which, although necessary for fetal development, can cause some discomfort in women.<sup>3</sup>

In situations of change, it is natural that pregnant women feel fear and / or anxiety. These feelings, when unresolved, increase tension, which in turn causes pain and further intensifies fear and anxiety, changing breathing and energy use patterns, which may affect the fetus. In addition, it may lead to exhaustion impairing tranquility of a normal delivery and leading to unnecessary caesarean section.<sup>4</sup> Thus, a therapeutic approach is necessary to control the discomfort and promote the well-being of pregnant women.

The World Health Organization (WHO) recommends essential actions for prenatal care, including non-medicalization, providing fundamental care and limiting interventions to a necessary minimum only.<sup>2</sup>

Therefore, drug therapy should be an option to be used with caution, as there may be implications for maternal and child health, while the use of non-pharmacological

therapies as methods to alleviate these discomforts should be encouraged.<sup>5</sup>

Pregnancy treatments are more complex, thorough and delicate, given the limited therapeutic options and the implications for the mother and fetus. One form of therapy during pregnancy is acupuncture, which can be effective in reducing symptoms, especially pain, thereby improving quality of life of pregnant women compared with usual care.<sup>6</sup>

Thus, pregnancy is a period when women are becoming increasingly interested in the use of integrative therapies such as acupuncture.<sup>7</sup>

In the Brazilian context, the Ministry of Health regulated the use of acupuncture in 2006, defining this treatment as a health intervention technology, derived from traditional Chinese medicine (TCM), which can be used alone or in combination with other therapeutic resources. This practice involves a set of procedures that are based on the stimulation of precise anatomical points (acupoints) of the body, defined by the insertion of metallic threadlike needles to assist in the promotion, maintenance and recovery of health, as well as to prevent illnesses, promoting mental, physical, emotional and spiritual health.<sup>8</sup>

Needles are inserted at strategic points in the body to stimulate peripheral nerve endings, releasing neurotransmitters, resulting in analgesic and anti-inflammatory effects, promoting muscle relaxation and pain relief, among many other benefits.<sup>9</sup>

Acupuncture is recommended as a therapeutic alternative in several countries. The UK presents guidelines for non-specific disease management and acupuncture as a pain management approach. A pilot study of 124 pregnant women testing the effects of acupuncture in England has recently been published.<sup>10</sup> Such research has concluded that acupuncture is promising but evidence on its use in pregnant women is still limited, highlighting the need for further studies.

We highlight a cohort study conducted in Brazil with 79 pregnant women, when the needles positioned at specific points of the woman's body remained for 25 minutes and resulted in an improvement in the participants' functional capacity, reducing the use of analgesics.<sup>11</sup>

Despite being a technique that has been more widespread in the Western context, it is important to broaden the knowledge about its benefits that underlie its practice in the context of women's health care during pregnancy. Acupuncture may be a great option for treatment of physical and emotional discomfort in pregnant women due to its minimal side effects and is indicated by health entities in Brazil and the world.

Once identified and proven its benefits, other health professionals, especially nurses, will be able to perform, understand or even indicate the use of acupuncture as a non-pharmacological treatment for discomfort relief, in order to enable qualified nursing care that is based on health promotion, prevention of complications, physical and emotional well-being for pregnant women.

From this perspective, the objective was to analyze the effects of acupuncture on the main physical and emotional discomforts present during pregnancy.

## METHODS

This is a cross-sectional study with 45 pregnant women in the second and third trimester in prenatal care for normal risk pregnancies who had acupuncture sessions.

The study was conducted in Fortaleza-CE, at the Lígia Barros Costa Natural Birth Center, which belongs to the Center for Family Development of the Federal University of Ceará.

The sample consisted of the entire population of normal risk pregnant women attended at the service and met the following inclusion criteria: women of gestational age between 14 and 37 weeks who were undergoing prenatal care for normal risk pregnancy. Exclusion criteria were: pregnant woman with diagnosed mental disability, speech or hearing problems that prevented them from answering the questionnaire and participating in the intervention; have needle phobia, presence of clinical or obstetric disorders; dermatological injury or absence of a limb at the site of application. Thus, a total of 45 pregnant women were selected.

The acupuncture points used and their respective indications were: B57- relax muscles, reduce sciatica, hemorrhoids; B40- acts to decrease lower back pain, sciatica, knee pain, cool blood (skin diseases); VB30- stimulates Qi circulation (energy) and blood, lower back pain, sciatica, thigh lateral pain, sacroiliac dysfunction; B23- tones the kidney, lower back pain, dizziness, tiredness, osteoporosis, tinnitus, deafness, blurred vision, memory disorder.<sup>12</sup>

The following points have also been added: B60- eliminates inner wind, masters head Qi, invigorates blood, headache, dizziness, sciatica, lower back pain, dorsalgia, neck pain, stiff neck; VG20- eliminates inner wind, soothes, relaxes muscles and tendons, soothes shen, sleep disturbance, dizziness, tinnitus, headache, stroke, schizophrenia, and Yintang point - soothes the mind, decreases fear, decreases headache, dizziness and heaviness in the head; anxiety, sleep disorders.<sup>12</sup>

Needles were applied to the following auriculotherapy points: Shemen, lumbar point and sciatic point, manipulating the right ear, because pregnant woman remained in left lateral decubitus. The shemen point is a special point widely used in auricular acupuncture therapies, as it acts by stabilizing the system as a whole, inducing analgesic and anti-inflammatory responses and can harmonize the treatment in mind, body and spirit.<sup>13</sup>

No stitches were used, which in combination are inadvisable in pregnancy. The chosen acupoints were in the lumbar region, feet, legs and head, which were stimulated to release hormones, promote analgesia and regulate organic functions.<sup>14</sup>

Data collection was performed from June to October 2016. Six sessions were held with each pregnant woman, twice a week. Each session lasted 30 minutes. The pregnant women were interviewed and answered an instrument about their sociodemographic, clinical and obstetric profile and an instrument for general evaluation of acupuncture therapy.

For data organization and analysis, the Statistical Package for Social Sciences version 21.0 software was used. Absolute and relative frequencies were calculated for categorical variables and mean and standard deviation for numerical variables.

The study was approved by the committee and met the National Health Council ethical recommendations for research with human beings.

## RESULTS AND DISCUSSION

The average age of the participants was 25.5 years, and more than half were aged 20 to 29 years (58.9%). There was a prevalence of brown color (76.8%), and they had an average of 11.9 years of schooling, predominantly high school (44.6%). The average income was R \$ 2,016.30 and about one third had income of one to two minimum wages (35.7%). Most reported being home (42.9%) and 30.4% performed activities inside and outside the home. The vast majority reported having a partner (80.4%).

Just over half of pregnant women were primiparous (55.4%) and among those who had previously given birth, the main route of delivery was cesarean section (48%). Eight women (14.3%) had previous history of abortions. The average gestational age was 27.9 weeks, with the third trimester prevailing (58.9%).

After acupuncture sessions, it was possible to observe changes in the discomforts reported by pregnant women, physical and emotional. Regarding the physical symptoms, it was observed that there was greater body relaxation in 44 (97.8%) pregnant women. Sleep-related changes were observed in 40 women, 39 (86.7%) reported positive change and one (2.2%) negative change. In daily activities, 35 women (77.8%) reported having more energy and willingness to perform their daily activities. In addition, 25 (55.5%) women reported a change in headache pattern, with symptom improvement in 24 (53.3%) and one (2.2%) worsening.

In other physical symptoms, such as leg pain, 21 women (46.7%) reported change for the better and one (2.2%) for worse, besides cramps, with 17 (37.8%) women reporting symptom improvement. Changes in bowel function were also reported, with 16 (35.6%) reports of improvement and two (4.4%) reports of worsening. Leg edema, very common among pregnant women, decreased in 15 (33.3%) participants. All 45 pregnant women (100%) stated that there was a decrease in lower back pain after therapy. It is noteworthy that there was a reduction in other body aches reported by 14 (31.1%) women.

Regarding emotional symptoms, 37 pregnant women (82.2%) reported improvement in mood, 37 (82.2%) noticed a decrease in stress caused by daily life activities, 36 (80%) felt more patience, while one (2.2%) reported decreased patience levels, 30 (66.7%) claimed to be less anxious, and two (4.4%) more anxious.

Table 1 shows data on changes in symptoms reported by study participants after acupuncture sessions.

**Table 1** - Distribution of changes reported by pregnant women after acupuncture intervention. *Fortaleza, CE, Brazil, 2016*

| Variable                   | n (%)     |
|----------------------------|-----------|
| <b>Physical symptoms</b>   |           |
| Changes in body relaxation |           |
| Yes for the better         | 44 (97,8) |
| Sleep Changes              |           |
| Yes for the better         | 39 (86,7) |
| Yes for the worse          | 1 (2,2)   |
| Energy changes             |           |
| Yes for the better         | 35 (77,8) |
| Headaches changes          |           |
| Yes for the better         | 24 (53,3) |
| Yes for the worse          | 1 (2,2)   |
| Changes leg pains          |           |
| Yes for the better         | 21 (46,7) |
| Yes for the worse          | 1 (2,2)   |
| Cramping changes           |           |
| Yes for the better         | 17 (37,8) |
| Yes for the worse          | 2 (4,4)   |
| Intestine Changes          |           |
| Yes for the better         | 16 (35,6) |
| Yes for the worse          | 2 (4,4)   |
| Changes edema in the legs  |           |
| Yes for the better         | 15 (33,3) |
| Changes in lower back pain |           |
| Yes for the better         | 45 (100)  |
| Changes in other pains     |           |
| Yes for the better         | 14 (31,1) |
| <b>Emotional Symptoms</b>  |           |
| Mood swings                |           |
| Yes for the better         | 37 (82,2) |
| Changes in stress          |           |
| Yes for the better         | 37 (82,2) |
| Yes for the worse          | 2 (4,4)   |
| Patience changes           |           |
| Yes for the better         | 36 (80,0) |
| Yes for the worse          | 1 (2,2)   |
| Changes in anxiety         |           |
| Yes for the better         | 30 (66,7) |
| Yes for the worse          | 2 (4,4)   |
| Other changes              |           |
| Yes for the better         | 9 (20)    |

In addition to the symptoms listed in Table 1, nine (20%) women considered acupuncture to have positive effects on other aspects such as: mood, self-confidence, self-esteem, positive feelings, self-control, flexibility and joint pain.

At the end of the sessions, 45 pregnant women (100.0%) reported that they would indicate acupuncture for other pregnant women to relieve gestational discomfort.

The present study discusses some of the benefits that acupuncture can provide to the health of pregnant women, whether these changes are physical or emotional. It is believed that health professionals can improve the quality of care for obstetric audiences, not only through drug treatment, but also using the knowledge of techniques that significantly contribute to integral and humanized care.

As the primary care nurse is directly in contact with the prenatal care and responsible for guidance to pregnant women, he may refer these women to units that already have acupuncture service for prevention, rehabilitation or cure, given the limited options of therapies for pregnant women.

It is known that during pregnancy, women may have changes in their sleep pattern, alternating between insomnia and hypersomnia, the first being more frequent. This change in wakefulness may be negative for pregnancy, offering risks related to daily activities such as fatigue and difficulty in performing tasks, as well as mood swings, causing irritability and restlessness.<sup>15</sup>

A randomized clinical trial that analyzed sleep patterns of 72 patients undergoing acupuncture, there was a dramatic improvement in the case group and little improvement in the control group receiving simulated acupuncture.<sup>16</sup> This absolute sleep improvement, demonstrated in the study, corroborates the findings of the present research.

Mood swings observed during gestation may be attributed to variations in hormones, specifically estrogen and progesterone, which are at a higher level compared to non-pregnant women.<sup>17</sup> A systematic review of 714 studies conducted in Canada has found that one of the most frequent mood disorders in this period is depression, with a prevalence of 7.4% in the first trimester, 12.8% in the second trimester and 12.0% in the third trimester.<sup>17</sup>

The increase in patience was highlighted among the reports, as 80% of pregnant women claimed improvement in this aspect. Some specific acupoints contribute to this positive percentage, as the shemen auricular point can lead to body relaxation, patience, and, in addition to analgesic and anti-inflammatory effects, also has sedative effects.<sup>13</sup>

Decreasing anxiety was one of the most relevant beneficial effects, with 66.7% of pregnant women reported considerable improvement. One of the best-known treatments for anxiety is the use of anxiolytics, but benzodiazepines as well as some classes of mood stabilizers and monoaminoxidase inhibitors should be avoided in pregnancy and lactation due to the risk of damage that these psychotropic drugs present. Acupuncture has anxiolytic effects and can be used as a complement to anxiety treatment or even as an alternative to drugs.<sup>9</sup>

A recent integrative review concluded that, compared with conventional treatments, the effects of acupuncture on anxiety

have been shown to be significant, according to scientific evidence, and its inclusion in nursing practice suggests a possible reduction in indiscriminate and prolonged drug use.<sup>9</sup>

As demonstrated above, the ear points play a fundamental role in the improvement of emotional symptoms, especially the shemen, related to anxiety, fear, stress, restlessness, among others. A study conducted in a maternity hospital in Santa Catarina with 19 parturients concluded that acupuncture and auriculotherapy are effective in relieving pain and anxiety in the delivery process and can be used as an alternative to pharmacological treatment.<sup>18</sup>

These results are corroborated by research conducted in São Paulo with 20 adults, which separated the group into three stress phases: resistance (60.0%), near exhaustion (35.0%) and alertness (5.0%). The results obtained with significance  $p = 0.006$  show that after 10 acupuncture sessions, participants with stress were reduced to 25%, becoming only in two phases: resistance (20.0%) and alertness (5.0%).<sup>19</sup>

Regarding headache in the general public, a longitudinal, interventional study with 20 volunteers who had headache, with an average pain score of 7.8, performed acupuncture sessions for 8 weeks and, after this time, these parameters were reduced to an average of 0.8. In addition, 100.0% of participants reported immediate pain improvement after first needle application.<sup>20</sup>

Similar result was found in the present study. Of the 25 women who presented this symptom, which is very common during pregnancy, 24 reported significant improvement.

Cramps are muscle changes that can occur during pregnancy, especially in the third trimester. The causes of this discomfort are not known and may be related to changes in women's circulation or changes in some salts due to pregnancy.<sup>21</sup> This study showed a reduction in cramps in 37.8% of pregnant women, which corroborates the findings of a qualitative study conducted in the state of Rio Grande do Norte, with 15 pregnant women attended at the Basic Unit, which showed a considerable reduction in this discomfort after acupressure sessions.<sup>22</sup>

In the present study all participants reported a reduction in lower back pain. This fact can be attributed to the main indications of the points used, which reached this pain. Similar results were found in one study, pointing out that acupuncture, among other techniques, considerably relieves lower back pain as compared to usual treatments.<sup>6</sup>

Another experimental study conducted in the state of Paraná with 36 patients on the use of acupuncture in fibromyalgia showed that both acupuncture and sham intervention (placebo needling) showed improvement in visual scale results analogue to pain reduction after acupuncture intervention.<sup>23</sup>

Acupuncture has also been shown to be effective for the treatment of gastrointestinal discomfort in pregnant women. A literature review of several articles and studies from the Journal of Chinese Medicine showed that there are points indicated for relief of gestational nausea, with treatment when the needle remains for 25 to 30 minutes being the most effective.<sup>24</sup> This study recommended the same time recommended.

A quasi-experimental study conducted in Bahia with patients undergoing acupuncture after facial surgery showed that due to the energy and organic balance achieved by acupuncture, there was an improvement in blood and lymphatic circulation, considerably reducing edema.<sup>25</sup> These results corroborate the findings of the present study, in which 33.3% of the participating pregnant women reported decreased swelling.

Notably, no serious adverse effects were observed during and after the therapy in any of the participants of the present study. Only local transient effects such as drowsiness, slight bleeding point, stinging pain, burning, weight or numbness were observed. This corroborates a systematic review of 105 articles on the safety of acupuncture during pregnancy, finding that most adverse events are mild and transient, with severe ones being very rare. Needle insertion was the most common mild event, followed by bleeding. The rare serious adverse effects found in the studies were all assessed as unlikely to have been caused by acupuncture treatment.<sup>26</sup>

The main limitations of the present study were: a) low availability of some pregnant women to attend all acupuncture sessions, b) the adequacy of women's available times, and c) the forgetfulness of some of the women scheduled for the following sessions, even though a reminder card was given thus making it necessary to call or messaging at least one day before the session in order to remind of the session.

## CONCLUSION

Acupuncture has positively contributed to the improvement of several physical and emotional symptoms, such as body relaxation, stress, sleep, headache, anxiety, mood, among others, and can be used as an alternative for the promotion of gestational health.

Overall, pregnant women expressed satisfaction and well-being with treatment. They all answered that they would recommend therapy to other pregnant women. No serious adverse events were observed in treatment.

As a limitation, the fear of needles on the part of some women, in addition to the low availability of others, requiring confirmation by telephone before the meeting were observed during the study.

Therefore, this technique should be increasingly studied in pregnant women, because it can offer a pleasant, simple, convenient, risk-free, relatively inexpensive and cost-effective healthcare option. Further studies are necessary to identify other benefits of the technique, beyond those cited in the study as well.

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