# Acupuncture treatment: multidimensional assessment of low back pain in pregnant women[*]

Tratamento com acupuntura: avaliação multidimensional da dor lombar em gestantes

Tratamiento con acupuntura: evaluación multidimensional del dolor lumbar en gestantes

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## ABSTRACT

**Objective:** To evaluate the effects of acupuncture in the treatment of low back pain in pregnant women in the second and third trimesters of pregnancy. **Method:** A quasi-experimental pre-post design was applied to pregnant women at a gestational age between 14 and 37 weeks, who had complaints of low back pain. Acupuncture sessions were performed, working systemic and auricular points. The McGill questionnaire was used to assess pain, as well as the instrument for identifying the sociodemographic, clinical and obstetric profile. **Results:** The acupuncture technique performed in up to six sessions in 56 pregnant women with low back pain had positive effects on the participants' health. According to the pain assessment, there was a statistically significant reduction in the low back pain among the pregnant women as early as in the second session, with a gradual improvement with the advancement of the number of sessions. There were no serious adverse events related to acupuncture. **Conclusion:** Acupuncture offered significant effects for reducing or relieving pain in pregnant women. The participants expressed satisfaction and well-being as they left each session.

## DESCRIPTORS

Acupuncture; Pregnant Women; Low Back Pain; Obstetric Nursing; Complementary Therapies.

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## INTRODUCTION

The spine is a complex structure of the human body that provides mobility, protection to nerve structures, and is able to bear weight. However, it triggers one of the most disabling symptoms in an individual: low back pain (LBP). This condition is more common among females and represents a trouble for women in the gestational period[1].

Considering that more than two-thirds of the pregnant women have LBP, this is considered the most common discomfort during pregnancy[1] and is often severe enough to interfere with daily life, reducing the ability to be active, causing limitations in the performance and productivity at work[2]. In a study carried out in Brazil, the prevalence of low back pain in pregnant women was high; 93.23% of the women reported pain[3]. Therefore, such a condition should not be ignored, and left without proper treatment.

The treatment of LBP in pregnancy is more complex, meticulous and delicate in view of the limited therapeutic options available, precisely because of the implications for the mother and the fetus[1]. However, an interdisciplinary and humanized care should be taken into account and, whenever possible, non-pharmacological therapeutic alternatives should be considered for the relief of symptoms.

During gestation, relief of low back pain can be obtained by means of drugs, easy to prescribe and use, but this method has limitations due to possible side effects for the mother and the fetus. In this way, alternative and complementary therapies are presented as viable methods that can be used for the public of pregnant women.

In a study conducted in a hospital in the United Kingdom with 315 women, a high prevalence (57.1%) of use of complementary and alternative methods, including acupuncture, was found during pregnancy[4].

A therapy for the treatment of LBP during pregnancy is acupuncture, which seems to be effective in reducing symptoms and consequently improving the quality of life of pregnant women, and is able to alleviate pain when compared to usual care[1-2].

Acupuncture is a traditional Chinese technique that aims to promote healing through the stimulation of body balance and the performance of negative and positive energies[5]. This process takes place by the realignment and redirection of the energy, through the stimulation of points by fine metallic needles.

The Brazilian Ministry of Health recognizes acupuncture as a health intervention technology, which involves a set of procedures based on the stimulation of acupoints to aid in the promotion, maintenance, and recovery of health, as well as to prevent diseases[5].

During pregnancy, the condition most frequently treated with acupuncture is a low back pain[6]. In a more recent study conducted in Brazil with 97 pregnant women, a high prevalence of low back pain was observed (68%), especially in the second gestational trimester (43.9%)[7]. Diverse literature[8-9] has also shown that, as the gestation progresses, the intensity of pain increases, especially in the third trimester. Notably, this discomfort is one of the most common nuisances during this period, and it is essential to test the effects of this therapy with needles.

In this context, the question is: what are the effects of acupuncture on low back pain in women at the second and third gestational trimesters?

Thus, nursing work has in its essence the process of holistic care of clients and this contributes to aid nurses, as acupuncturists, to carry out their actions in a qualified, efficient and humanized way. Once the benefits of the method are known and proven, nurses can perform it, if trained for this, understand or even indicate the use of acupuncture as a non-pharmacological treatment for LBP relief in pregnant women. The aim of this study was to evaluate the effects of acupuncture in the treatment of low back pain in pregnant women in the second and third trimester of pregnancy.

## METHOD

A quasi-experimental pre-post design was conducted at the Center for Family Development (CEDEFAM – *Centro de Desenvolvimento Familiar*) of the Universidade Federal do Ceará, which performs daily prenatal nursing consultations.

The study population was composed of 180 women who were in prenatal treatment in the unit because it is advisable to use the entire population in cases where the population has less than 200 individuals[10]. The pregnant women were approached while awaiting their consultation.

The sample consisted of all the women who met the inclusion criteria: gestational age (GA) between 14 and 37 weeks, who had complaints of LBP, in prenatal care for normal-risk pregnancy and who were willing to go to the study site twice a week. The exclusion criteria were: pregnant woman with any form of mental deficiency, speech or hearing problems, who had made use of analgesics in the last 8 hours or had needle phobia, with clinical or obstetric disorders, dermatological lesions or without a limb at the site of application, or presenting other spine pathologies prior to gestation.

Data were collected from June to October 2016, and up to six acupuncture sessions were performed with each pregnant woman since some women were discharged before the sixth session due to complete cessation of pain. Before starting the first session, the sociodemographic, clinical, obstetrical data were collected and the McGill questionnaire was applied to assess the low back pain of the pregnant women. The McGill instrument was reapplied before the second, fourth and sixth sessions for the reassessment of pain in the face of the therapy tested.

The McGill questionnaire presents the following measures: number of descriptors chosen by the evaluated person and pain index. The instrument evaluates several aspects of pain with the help of words chosen by the participants as a way of expressing the pain felt by them, and these descriptors are divided into four groups: sensory-discriminative (subgroup 1 to 10), affective-motivational (subgroup 11 to 15), evaluative-cognitive (subgroup 16), and miscellaneous (subgroup 17 to 20)[11].

The numerical index of words corresponds to the number of descriptors indicated by the participants to characterize their pain, with the possibility of choosing only one word per subgroup with a maximum value of 20, and the pain index is measured as the sum of the intensity values of each descriptor (0-5), which may have the maximum number of 78[11].

In each acupuncture session, the pregnant women were invited to wear appropriate clothing and to position themselves in the left lateral decubitus position to perform antisepsis at the sites of the acupoints with alcohol 70% and to initiate the application of the technique.

Needle boxes were opened in the presence of the participants so that they could be sure of their sterility. One of the researchers who is acupuncturist based her techniques on Traditional Chinese Medicine (TCM), determining point locations on the body based on their "*Tsun*", which is equal to the space between the distal interphalangeal joint and the proximal interphalangeal joint on the middle finger. Needles were applied to the chosen points, which remained in place for 30 minutes.

We chose to use points that stimulate lumbar analgesia, as well as combined points to regulate the energy of the affected meridians, because, together, both techniques provide physical, mental and emotional well-being sensations.

The treatment is based on a protocol for LBP in pregnant women[12]. The points tested were: B57 – for relaxation of muscles, relief of sciatica, hemorrhoids, B40 – relief of low back pain, sciatica, knee pain, cooling the blood; VB30 – stimulation of circulation of *Qi* and blood, relief of low back pain, sciatica, lateral thigh pain, sacroiliac dysfunction; B23 – invigorates the kidneys, lumbago, dizziness, tiredness, osteoporosis, tinnitus, deafness, blurred vision, memory disorder; B60 – eliminates the internal wind, dominates the *Qi* of the head, invigorates the blood, headache, dizziness, sciatica, lumbago, backache, neck pain, torticollis, difficult delivery and; VG20 – eliminates the internal wind, soothing, relaxes muscle and tendons, calms the *shen*, sleep disorders, dizziness, tinnitus, headache, stroke, schizophrenia; and *Yintang* – calms the mind, diminishes fear, headache, dizziness and the feeling of heaviness in the head; anxiety, sleep disorders[13].

Needles were applied at the *Shemen*, lumbar and sciatic points of auricular therapy in the right ear, as the pregnant women remained in the left lateral decubitus position. The *Shemen* point is widely used in auricular acupuncture, for its action to stabilize the system as a whole and cause analgesic and anti-inflammatory responses[14].

Statistical analysis was performed in the SPSS software version 21.0. It should be noted that the distributions of the McGill mean scores, evaluated on a weekly basis, were compared regarding the number of descriptors and the pain index. The statistical significance of the initial and final mean scores of the McGill questionnaire descriptors was tested. The absolute and relative frequencies were calculated for the categorical variables, and the mean and the standard deviation were calculated for the numerical variables. The tests used were the Wilcoxon's for paired measurements and the McNemar's test.

The research complied with the ethical recommendations on research with human beings of the National Health Council, and the project was approved by the Research Ethics Committee of the Assis Chateaubriand School Maternity under number 1.553.641. The participants were asked to sign the Informed Consent Form and were assured of anonymity, with respect to disclosing identities, and the freedom to participate or not in the study.

## RESULTS

The mean age of the participants was 25.5 years, and more than half were in the 20-29 age group (58.9%). There was a prevalence of brown-skinned women (76.8%) and they had an average age of 11.9 years of schooling, prevailing high school (44.6%). The mean income was R$2,016.30, but the majority had an income of one to two minimum wages (35.7%). The majority reported being housewives (42.9%) and 30.4% claimed to carry out both from household activities and work outside their home. Most of the women reported having a partner (80.4%).

More than half of the pregnant women were primigravida (55.4%) and, of those who gave birth previously, the main route of delivery was a caesarean section (48%). The mean GA was 27.9 weeks, with a prevalence of the third semester (58.9%).

The association between the number of descriptors of the McGill questionnaire and the sociodemographic, clinical and obstetric variables was tested. There was no relation between the number of descriptors chosen (sensory, affective, evaluative and miscellaneous) in the McGill questionnaire with sociodemographic, prenatal and clinical characteristics before the intervention. Pregnant women who exhibited initial pain characterized by miscellaneous descriptors ("radiates, cold, numb, squeeze, tugging, agonizing, boring, torturous, etc.") presented some clinical antecedents (p<0.029).

Regarding the intensity of pain, there was no statistically significant correlation of any sociodemographic, prenatal and clinical characteristic with the pain index, in any descriptor of the McGill questionnaire.

Pain assessment data are presented in Table 1 according to the number of descriptors and the pain index of the McGill questionnaire.

**Table 1** – Distribution of McGill mean scores, evaluated on a weekly basis, according to the number of descriptors and pain index – Fortaleza, CE, Brazil, Jun. to Oct. 2016.

| MCGILL | Opening session | 2nd session | 4th session | 6th session | Reduction |
|---|---|---|---|---|---|
| Number of sensory descriptors | 7.38 ± 2.71 | 6.54 ± 3.10 | 4.87 ± 3.71 | 2.41 ± 2.91 | |
| Number of affective descriptors | 3.14 ± 1.62 | 2.35 ± 1.92 | 1.66 ± 1.70 | 0.62 ± 1.05 | |
| Number of evaluative descriptors | 1 ± 0 | 0.83 ± 0.38 | 0.74 ± 0.45 | 0.48 ± 0.51 | |
| Number of miscellaneous descriptors | 2.59 ± 1.52 | 2.28 ± 1.47 | 1.58 ± 1.54 | 0.59 ± 1.18 | |
| **Total number of descriptors** | **14.05 ± 5.42** | **11.74 ± 6.51** | **8.84 ± 6.91** | **4.10 ± 5.18** | **Total 9.95** |

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| MCGILL | Opening session | 2nd session | 4th session | 6th session | Reduction |
|---|---|---|---|---|---|
| Sensory Pain Index | 17.45 ± 8.56 | 13.02 ± 7.66 | 9.00 ± 7.46 | 3.66 ± 4.97 | |
| Affective Pain Index | 4.71 ± 3.12 | 3.11 ± 2.91 | 1.97 ± 2.14 | 0.83 ± 1.95 | |
| Evaluative Pain Index | 2.43 ± 1.44 | 1.63 ± 0.97 | 1.14 ± 0.79 | 0.69 ± 0.81 | |
| Miscellaneous pain index | 5.64 ± 4.22 | 3.98 ± 3.31 | 2.57 ± 2.66 | 0.66 ± 1.32 | |
| Total Pain Index | 30.23 ± 15.55 | 21.65 ± 13.19 | 14.08 ± 11.21 | 5.83 ± 7.95 | Total 24.4 |

In the initial evaluation, the greatest number of descriptors recorded by the pregnant women was of sensory aspects, with a mean of 7.38; pain was evaluated as "throbbing", "stabbing", "acute", "burning", followed by affective descriptors (3.14), such as "tiresome", "suffocating", "cruel", "damn", "insane". As for pain intensity, a greater number of sensorial characteristics was also found, with a mean of 17.45.

Among the descriptors mentioned by the pregnant women after the sixth session, those who continued to present a higher mean were the sensorial ones (2.41), while mean values were below 1.00 in the other descriptors. Regarding the pain index, in the sixth session, the mean intensity was higher in the sensory symptoms (3.66) and also less than 1.00 in the other descriptors.

Table 2 shows the comparison between the number of descriptors recorded in the initial evaluation and at each week according to the McGill questionnaire.

**Table 2** – Distribution of the initial and final mean scores of the descriptors from one session to another, according to the McGill questionnaire – Fortaleza, CE, Brazil, Jun. to Oct. 2016.

| Initial moment | Final moment | Initial assessment | Final assessment | p-value | |
|---|---|---|---|---|---|
| **Number of sensory descriptors** | | | | | |
| Start | 2nd session | 7.32 ± 2.73 | 6.54 ± 3.10 | 0.033 | |
| Start | 4th session | 7.54 ± 2.67 | 4.87 ± 3.71 | <0.001 | |
| Start | 6th session | 7.34 ± 2.68 | 2.41 ± 2.91 | <0.001 | |
| 2nd session | 4th session | 6.92 ± 2.77 | 4.87 ± 3.71 | <0.001 | |
| 2nd session | 6th session | 6.86 ± 2.76 | 2.41 ± 2.91 | <0.001 | |
| 4th session | 6th session | 5.55 ± 3.54 | 2.41 ± 2.91 | <0.001 | |
| **Number of affective descriptors** | | | | | |
| Start | 2nd session | 3.11 ± 1.55 | 2.35 ± 1.92 | <0.001 | |
| Start | 4th session | 3.30 ± 1.37 | 1.66 ± 1.70 | <0.001 | |
| Start | 6th session | 3.21 ± 1.37 | 0.62 ± 1.05 | <0.001 | |
| 2nd session | 4th session | 2.49 ± 1.91 | 1.66 ± 1.70 | 0.015 | |
| 2nd session | 6th session | 2.28 ± 1.79 | 0.62 ± 1.05 | <0.001 | |
| 4th session | 6th session | 1.93 ± 1.62 | 0.62 ± 1.05 | 0.001 | |
| **Number of evaluative descriptors** | | | | | |
| Start | 2nd session | 1 | 0.83 ± 0.38 | 0.005 | |
| Start | 4th session | 1 | 0.74 ± 0.45 | 0.002 | |
| Start | 6th session | 1 | 0.48 ± 0.51 | <0.001 | |
| 2nd session | 4th session | 0.89 ± 0.32 | 0.74 ± 0.45 | 0.059 | |
| 2nd session | 6th session | 0.93 ± 0.26 | 0.48 ± 0.51 | <0.001 | |
| 4th session | 6th session | 0.86 ± 0.35 | 0.48 ± 0.51 | <0.001 | |
| **Number of miscellaneous descriptors** | | | | | |
| Start | 2nd session | 2.57 ± 1.57 | 2.28 ± 1.47 | <0.001 | |
| Start | 4th session | 2.70 ± 1.61 | 1.58 ± 1.54 | <0.001 | |
| Start | 6th session | 2.66 ± 1.59 | 0.59 ± 1.18 | <0.001 | |
| 2nd session | 4th session | 2.43 ± 1.46 | 1.58 ± 1.54 | <0.001 | |
| 2nd session | 6th session | 2.45 ± 1.40 | 0.59 ± 1.18 | <0.001 | |
| 4th session | 6th session | 1.79 ± 1.50 | 0.59 ± 1.18 | <0.001 | |
| **Number of total descriptors** | | | | | Reduction |
| Start | 2nd session | 13.94 ± 5.38 | 11.74 ± 6.51 | <0.001 | 2.2 |
| Start | 4th session | 14.46 ± 5.16 | 8.84 ± 6.91 | <0.001 | 5.62 |
| Start | 6th session | 14.10 ± 5.01 | 4.10 ± 5.18 | <0.001 | 10 |
| 2nd session | 4th session | 12.41 ± 6.13 | 8.84 ± 6.91 | <0.001 | 3.57 |
| 2nd session | 6th session | 12.10 ± 5.86 | 4.10 ± 5.18 | <0.001 | 8 |
| 4th session | 6th session | 10.14 ± 6.44 | 4.10 ± 5.18 | <0.001 | 6.04 |

Wilcoxon test.

In this paired assessment, there was a statistically significant (p<0.05) reduction in pain in most descriptors at each session. In total, the mean reduction of the descriptors from the first to the second session (2.2), the second to the fourth session (3.57) and from the fourth to the sixth session (6.04) stood out.

Table 3 shows the pain index at the initial assessment and each week.

**Table 3** – Distribution of the initial and final mean pain index scores from one session to another, according to the McGill – Fortaleza, CE, Brazil, Jun. to Oct. 2016.

| Initial moment | Final moment | Initial assessment | Final assessment | Total reduction | p-value |
|---|---|---|---|---|---|
| **Sensory Pain Index** | | | | | |
| Start | 2nd session | 17.47 ± 8.94 | 13.02 ± 7.66 | | <0.001 |
| Start | 4th session | 18.76 ± 8.86 | 9.00 ± 7.46 | | <0.001 |
| Start | 6th session | 18.00 ± 8.52 | 3.66 ± 4.97 | | <0.001 |
| 2nd session | 4th session | 13.95 ± 7.57 | 9.00 ± 7.46 | | <0.001 |
| 2nd session | 6th session | 13.62 ± 7.60 | 3.66 ± 4.97 | | <0.001 |
| 4th session | 6th session | 10.00 ± 7.42 | 3.66 ± 4.97 | | <0.001 |
| **Affective Pain Index** | | | | | |
| Start | 2nd session | 4.77 ± 3.21 | 3.11 ± 2.91 | | <0.001 |
| Start | 4th session | 5.03 ± 2.98 | 1.97 ± 2.14 | | <0.001 |
| Start | 6th session | 4.72 ± 2.81 | 0.83 ± 1.95 | | <0.001 |
| 2nd session | 4th session | 3.22 ± 2.84 | 1.97 ± 2.14 | | 0.005 |
| 2nd session | 6th session | 2.86 ± 2.72 | 0.83 ± 1.95 | | <0.001 |
| 4th session | 6th session | 2.24 ± 2.10 | 0.83 ± 1.95 | | 0.002 |
| **Evaluative Pain Index** | | | | | |
| Start | 2nd session | 2.55 ± 1.52 | 1.63 ± 0.97 | | <0.001 |
| Start | 4th session | 2.65 ± 1.57 | 1.14 ± 0.79 | | <0.001 |
| Start | 6th session | 2.66 ± 1.72 | 0.69 ± 0.81 | | <0.001 |
| 2nd session | 4th session | 1.76 ± 0.90 | 1.14 ± 0.79 | | 0.002 |
| 2nd session | 6th session | 1.69 ± 0.76 | 0.69 ± 0.81 | | <0.001 |
| 4th session | 6th session | 1.31 ± 0.71 | 0.69 ± 0.81 | | 0.001 |
| **Miscellaneous pain index** | | | | | |
| Start | 2nd session | 5.64 ± 4.34 | 3.98 ± 3.31 | | 0.004 |
| Start | 4th session | 5.73 ± 4.13 | 2.57 ± 2.66 | | <0.001 |
| Start | 6th session | 5.55 ± 4.11 | 0.66 ± 1.32 | | <0.001 |
| 2nd session | 4th session | 4.19 ± 3.27 | 2.57 ± 2.66 | | <0.001 |
| 2nd session | 6th session | 4.31 ± 3.42 | 0.66 ± 1.32 | | <0.001 |
| 4th session | 6th session | 2.90 ± 2.65 | 0.66 ± 1.32 | | <0.001 |
| **Total Pain Index** | | | | **Index Reduction** | |
| Start | 2nd session | 30.43 ± 16.23 | 21.65 ± 13.19 | 8.78 | <0.001 |
| Start | 4th session | 32.16 ± 15.61 | 14.08 ± 11.21 | 18.08 | <0.001 |
| Start | 6th session | 30.93 ± 15.04 | 5.83 ± 7.95 | 25.01 | <0.001 |
| 2nd session | 4th session | 23.08 ± 12.77 | 14.08 ± 11.21 | 9 | <0.001 |
| 2nd session | 6th session | 22.45 ± 12.48 | 5.83 ± 7.95 | 16.62 | <0.001 |
| 4th session | 6th session | 15.69 ± 10.79 | 5.83 ± 7.95 | 9.86 | <0.001 |

Wilcoxon test.

There was also a statistically significant reduction (p<0.05) in the pain index, which is related to the experienced pain intensity, in all qualitative descriptors of pain: sensory, affective, evaluative and miscellaneous.

The mean initial sensory pain index was the one with the highest number of records (17.47 ± 8.94), followed by the miscellaneous index (5.64 ± 4.34).

Regarding the mean final pain index, the one with the lowest pain index was the evaluative (0.69 ± 0.81), followed by the miscellaneous index (0.66 ± 1.32).

## DISCUSSION

The population evaluated in the present study was young, with low family income and lived with a partner. These data were also found in a survey that observed a higher prevalence of LBP among pregnant women aged between 20 and 29 years, brown-skinned, housewives, with monthly family income between one and two minimum wages, and with schooling, up to high school[15]. LBP in younger women may be possibly explained by their higher sensitivity to the changes that occur in this period.

In this study, we observed that the majority of the pregnant women with low back pain were primigravida and were in the third trimester, in line with the results of a study on gestational low back pain, which found that most women were also in the first pregnancy (51.5%)[7]. Other research showed that low back pain began more in the second trimester[7,15-16], which differs from the present study, where most participants had a mean GA of 27.9 weeks.

Gestational age is a risk factor for LBP because the more advanced is the GA, the greater is the risk of presenting pain[7-9], especially in the third trimester[8-9], as found in this study. Since most of the pregnant women did not perform physical activities, it is inferred that LBP can be one of the obstacles for not performing exercises, due to the limitation of strength and movement. These data are similar to those of a study on gestational LBP, in which no participant practiced physical activity during pregnancy[3].

Regarding the evolution of the pain of the pregnant women after the beginning of the intervention, we emphasize that one pregnant woman was discharged in the second session and two in the fourth session because their pain had ceased with the therapy.

Considering the reduction of low back pain after each session, according to the pregnant women, the association of auricular acupuncture and systemic acupuncture used in the present study may present good results in relation to the intensity of low back pain[17].

Corroborating the research data, in a study with 269 pregnant women, a bivariate analysis of the association of low back pain with sociodemographic variables (age, race, family income, profession) and gestational variables (obstetric history) did not show any statistically relevant association[15], indicating that LBP can affect any pregnant woman regardless of such characteristics.

In relation to the association of body mass index with the presence of low back pain (p=0.011), it was inferred that the pregnant women who presented overweight were more likely to present initial pain, probably due to the greater effort of the lumbar spine to bear the body weight.

Corroborating the data in Table 1, a study reveals that the type of pain most frequently mentioned by women was "stabbing" (31.6%)[15]. In the McGill questionnaire, this sensation of pain is characterized as a sensory aspect. Similar results were found in a study with 97 pregnant women, which revealed that 37% of the patients with low back pain described their pain as "burning"[7].

There was a 91.3% reduction in pain intensity, according to the descriptors chosen by the participants in the McGill questionnaire. Therefore, it is understood that acupuncture, besides being beneficial to aggregate existing treatments for low back pain in pregnant women, represents a simple, safe technique that considers pregnant women in their global dimension, without losing sight of the singularity of each of them[5].

After the sensory pain index, the miscellaneous aspect was the one most recorded by the study participants. The same result was also observed among women in another study, in whom lumbar pain presented "irradiation" in 162 (82.6%) participants, distributed as follows: buttocks (n=34, 17.3%), abdomen (n=46, 23.5%), thighs (n=65, 33.2%) and legs (n=96, 49.0%)[15]. Such a sense is part of the miscellaneous aspect of the McGill questionnaire.

It was noticed that the average of the total pain index changed considerably in the second session of acupuncture, with a decrease of 8.78 points in relation to the first session and presented a gradual decrease with further sessions. The reduction of pain is indicated in proportion to the number of acupuncture sessions to which the women were submitted.

It is known that although the effects of this therapy are progressive, it has been observed that in some cases, pain decreases after a single acupuncture treatment. However, most often several sessions are necessary to relieve or cease the intensity of low back pain[14].

The results of this study confirm that pregnant women have relief of pain, in terms of both intensity and pain experience score (McGill), after treatment. Similar effects were found in a study, noting that acupuncture, among other techniques, considerably relieved low back pain compared with usual care[1].

It is inferred that such results are linked to the fact that the consensus of the *National Institutes of Health* of the United States has recommended the indication of acupuncture, alone or as a coadjuvant therapy, to the treatment of several diseases and health problems, including low back pain[5].

It is considered that the results achieved with this therapy are of great importance for clinical practice and health promotion of pregnant women. This is important because women who experience high levels of pain during pregnancy may be at increased risk of complications during labor, due to physiological, mechanical and also psychological reasons[18].

Regarding the McGill evaluation, we observed that such an instrument is able to measure the outcome of therapeutic interventions and may have beneficial evaluations when used in investigations that require detailed information.

Thus, acupuncture represents a procedure that gains gradually more importance and its indication in some painful conditions is clearly favorable to the individuals. Its efficiency in acute or chronic low back pain, among others, has been demonstrated to be scientifically supported as an important benefit[19].

By encouraging women to use non-pharmacological techniques during pregnancy, professionals enable pregnant women to experience the benefits of the holistic approach, stimulating their acceptability and help them overcome the difficulties caused by discomforts[16].

It is known that physical pain is usually one of the main causes that lead individuals to seek acupuncture therapy. However, it is necessary and desirable for professionals, especially acupuncturists, to take into account other imbalances or complaints, subjective aspects and the individual history of each person[20]. In the CTM's view, the mind and the body are inseparable; thus, emotional changes are reflected throughout the organ system, and vice versa, because when the physical body becomes ill, the psychic becomes ill together, and a "compartmentalization" of the human being is not possible[21].

This relationship was identified here because, at the end of the sessions, besides the relief of low back pain, the pregnant women also reported improvements in sleep, stress, relaxation, among other complaints. In addition to the Intang and VG 20 points used, indicated for muscle relaxation, headache, insomnia, fear and as soothing, the *Shemen* auricular point may also have influenced the relaxation of the body, sleep, patience and decreased stress, since this point promotes analgesic, anti-inflammatory, soothing and sedative effects[14].

Auricular therapy using the *Shemen* point, as in the present research, was carried out in another study that succeeded to reduce the stress levels, being the technique with needles the one that obtained better results, compared to the seed techniques[22].

There were few reports of pain or discomfort throughout the acupuncture therapy. Instead, women spontaneously reported feelings of relaxation and well-being before, during, and after the session. This fact can be linked to a set of factors associated with the application of needles, such as the tranquility of the ambient music, lighting in the twilight and aroma with pleasant oils.

We believe that the time of permanence of needles in the participants of this research was enough to achieve pain reduction. Similar results were noted in a study conducted in Southern California, which also left acupuncture needles for 30 minutes, showing that either alone or in combination, this therapy was effective to treat low back pain and, as a consequence, the quality of life of the participants showed generally improved trends[23].

In the present study, there were no serious adverse events related to acupuncture. Local expected effects, such as drowsiness, mild bleeding, stinging pain, burning, weight or numbness, were observed in some participants. Corroborating these observations, another study, which also performed acupuncture in pregnant women with low back pain, mentioned no serious adverse reactions in the participants[24].

Scientific evidence indicates that the acupuncture technique in pregnant women seems to be as safe as the interventions that do not use it, since the events were very similar in the acupuncture and in the non-acupuncture groups, suggesting that their occurrence is neither less nor more frequent in people receiving a needle in the skin compared to another intervention[24]. Moreover, the World Health Organization (WHO) has produced several publications on the efficacy and safety of acupuncture therapy and recommends it to be used by its Member States[5].

The findings of this study suggest that acupuncture may help to reduce some of the detrimental effects that LBP has on society, such as drug use and indirect costs, such as withdrawal from certain activities or functions[23]. Acupuncture

has had significant effects for reducing or relieving pain in pregnant women, but it is important that health professionals help them manage their emotions and lifestyle so that they can act in favor of their quality of life.

## CONCLUSION

The acupuncture technique performed in up to six sessions provided positive health effects to the participants. According to the pain assessment, there was a statistically significant reduction in the low back pain of the pregnant women as early as the second session, and a gradual decrease was seen with the further sessions.

As for the experience of pain in terms of number of descriptors and pain index, the paired comparisons from one session to the other showed statistically significant values (p<0.001). More acupuncture sessions accounted for fewer marked descriptors and better results in decreasing pain.

Based on the number of descriptors, the women recorded higher means (7.38) in the number of words of sensory aspects to define their pain before acupuncture. The mean number of choices for these descriptors dropped to 2.41 after six sessions. In the evaluation of the total pain index per descriptors, an average of 30.23 was recorded, and, after six sessions, this number decreased to 5.83.

Besides relief from low back pain, pregnant women mentioned to perceived improvements in other aspects, such as relaxation, stress, sleep, anxiety, and patience. There were no serious adverse events in the treatment. In general, the participating pregnant women showed satisfaction and well-being when leaving each session.

Therefore, we considered that this technique should be increasingly studied in the public of pregnant women because it has the potential to promote health in a pleasant, simple, convenient, practical, risk-free and cost-effective manner.

We believe that health professionals, mainly nurses, must review the quality of assistance to the obstetric public, by using not only drug treatments but also these alternative techniques throughout the pregnancy cycle, which will significantly contribute to an integral and humanized care, configuring an advance for the health of pregnant women.

The main limitations of the present study were the low availability of some pregnant women to attend all acupuncture sessions and the difficulty of adapting to the personal schedules of the women.

More studies using the acupuncture intervention should be performed in the pregnant population, not only to evaluate low back pain but also other discomforts arising from this delicate and special moment that women experience.

**RESUMO**

**Objetivo:** Avaliar os efeitos da acupuntura no tratamento da dor lombar em gestantes no segundo e terceiro trimestre de gravidez. **Método:** Estudo quase-experimental, antes e depois, realizado com gestantes de idade gestacional entre 14 e 37 semanas, que apresentavam queixa de dor lombar. Foram realizadas sessões de acupuntura, com a aplicação de pontos sistêmicos e auriculares. Para avaliação da dor, utilizou-se do questionário McGill, além do instrumento de identificação do perfil sociodemográfico, clínico e obstétrico. **Resultados:** A técnica de acupuntura realizada em até seis sessões, em 56 gestantes com dor lombar referida, proporcionou efeitos positivos favoráveis à saúde das participantes. Segundo a avaliação de mensuração da dor, houve redução estatisticamente

significante na dor lombar das gestantes logo a partir da segunda sessão e diminuição gradativa com os avançar do número de sessões. Não houve eventos adversos graves relacionados à acupuntura. **Conclusão:** A acupuntura ofereceu significativos efeitos para a redução ou o alívio da dor nas gestantes. As participantes denotaram satisfação e bem-estar ao sair de cada sessão.

**DESCRITORES**

Acupuntura; Gestantes; Dor Lombar; Enfermagem Obstétrica; Terapias Complementares.

**RESUMEN**

**Objetivo:** Evaluar los efectos de la acupuntura en el tratamiento del dolor lumbar en gestantes en el segundo y tercer trimestre del embarazo. **Método:** Estudio cuasi-experimental, antes y después, realizado con gestantes de edad gestacional entre 14 y 37 semanas, que presentaban queja de dolor lumbar. Se llevaron a cabo sesiones de acupuntura, con la aplicación de puntos sistémicos y auriculares. Para evaluación del dolor, se utilizó el cuestionario McGill, además del instrumento de identificación del perfil sociodemográfico, clínico y obstétrico. **Resultados:** La técnica de acupuntura realizada en hasta seis sesiones, en 56 gestantes con dolor lumbar relatada, proporcionó efectos positivos favorables a la salud de las participantes. Según la evaluación de la mensuración del dolor, hubo reducción estadísticamente significativa en el dolor lumbar de las gestantes pronto después de la segunda sesión y disminución gradual con los avances de la cantidad de sesiones. No hubo eventos adversos severos relacionados con la acupuntura. **Conclusión:** La acupuntura brindó efectos significativos para la reducción o el alivio del dolor en las gestantes. Las participantes denotaron satisfacción y bienestar al salir de cada sesión.

**DESCRIPTORES**

Acupuntura; Mujeres Embarazadas; Dolor de la Región Lumbar; Enfermería Obstétrica; Terapias Complementaria.

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