

Low-Risk Pregnant Women's Perceptions of the Effects of Auriculotherapy on Pregnancy-Related Discomforts

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Abstract

Introduction

During pregnancy, women are subject to various physiological and emotional changes, which should be monitored within the scope of antenatal care. The healthcare team may employ, where appropriate, non-pharmacological strategies such as Auriculotherapy, a technique that stimulates specific points on the auricle for the management of various conditions, based on the principle that the ear constitutes a microsystem in which the entire body is represented.

Objective

To understand the impact of Auriculotherapy on low-risk pregnant women with regard to pregnancy-related discomforts.

Methods

A descriptive, exploratory study with a qualitative approach was conducted with pregnant women from Brazil and Portugal. A data collection instrument was used, comprising closed-ended questions for characterisation and open-ended questions relating to complaints and sensations following the use of the technique. Data collection took place between March and October 2021 with 17 low-risk pregnant women in Natal/Rio Grande do Norte, Brazil, and 8 pregnant women in Coimbra, Portugal, between the months of February and June 2022. The data were analysed using Bardin's content analysis. Ethical principles for research were observed and favourable opinions were obtained from two ethics committees.

Results

The majority of participants were married, with higher education, aged between 28 and 32, primigravida, and had a low family income. The most frequent discomforts included lower back pain, oedema, cramps, stress and anxiety. Auriculotherapy demonstrated positive effects, promoting physical relief and emotional well-being, with improvements also recognised by family members. These findings suggest that the intervention is simple, effective, and contributes to the alleviation of both physical and emotional pregnancy-related discomforts.

Conclusion

The pregnant women reported significant improvements in physical and emotional discomforts associated with pregnancy, together with an increased sense of tranquillity. Auriculotherapy had a positive effect on well-being, regardless of sociodemographic differences between Brazil and Portugal, with no relevant cultural influence. The technique proved to be simple and effective and may be recommended as a first-line therapeutic strategy,

reinforcing the nurse's role in reducing gestational discomforts. The reduced number of participants, attributable to the COVID-19 pandemic, constitutes a limitation of the study.

Keywords

Obstetric Nursing; Pregnant Woman; Patient Comfort; Auriculotherapy.

Introduction

During pregnancy, women are subject to various physiological and emotional changes. The physiological changes throughout the trimesters of pregnancy occur to maintain maternal and foetal stability, as well as foetal vitality. These physiological changes lead many pregnant women to report discomforts throughout the trimesters of pregnancy, arising from structural and/or functional modifications.

With the aim of promoting an approach suited to the woman's needs, antenatal care represents a fundamental resource for maintaining the stability of the pregnancy, preventing complications and monitoring the health of the mother and the foetus. To reduce pregnancy-related discomforts, the healthcare team must be equipped to address any factors that may adversely affect the pregnancy, whether of a clinical, obstetric, socioeconomic, or emotional nature.

With regard to non-pharmacological strategies for relieving discomforts associated with pregnancy, studies on the use of Auriculotherapy remain limited. In the context of pregnancy, existing research has shown that the application of Auriculotherapy in low-risk pregnant women had positive effects in reducing certain physical discomforts, without worsening the overall course of pregnancy.^{1,2,3}

Based on the premise that Traditional Chinese Medicine (TCM) comprises several associated therapeutic approaches — including integrative and complementary health practices — and given the scarcity of studies on the application of Auriculotherapy during pregnancy, the present study used this technique with emphasis on emotional points⁴, since it is a method that does not require complex materials or technical resources for its implementation.

In the context of the present study, Auriculotherapy is considered a therapeutic technique consisting of the stimulation of specific points on the auricle for the treatment of various ailments, based on the principle that the ear is a microsystem in which the entire body is represented, resembling an inverted foetus.⁵

In the case of pregnant women, it is assumed that the discomforts reported result from energy imbalances inherent to the gestational state. Accordingly, it is assumed that the use of Auriculotherapy during pregnancy contributes to maintaining balance and, consequently, to alleviating sensations that compromise women's well-being throughout pregnancy.

Based on this premise, the following research question was formulated: How do women feel after the application of the Auriculotherapy technique with regard to common discomforts of pregnancy?

The general objective of the study was: To understand the impact of Auriculotherapy on low-risk pregnant women with regard to pregnancy-related discomforts.

Methods

This article presents an excerpt from a study initiated in Brazil between March and October 2021 and concluded in Portugal between February and June 2022. A descriptive and exploratory qualitative study was conducted with low-risk pregnant women, including data collected in both Brazil and Portugal.

Prior to the commencement of the investigation, ethical principles were upheld in accordance with the favourable opinion issued by the Research Ethics Committee of the Federal University of Rio Grande do Norte, under CAAE number 25685319.60000.5537. Additionally, the Ethics Committee of the Health Sciences Research Unit: Nursing, of the Nursing School of Coimbra, was consulted and issued a favourable opinion for the conduct of the study, under number P 637-12/2019.

A convenience sample was used, involving low-risk pregnant women enrolled in the Prenatal Care Programme of a Family Health Unit (USF) in Natal, Brazil, between March and October 2021, and in the Childbirth and Parenthood Preparation Programme of the Extension Project "Terna Aventura", at the Nursing School of Coimbra in Portugal, between January and June 2022.

In Brazil, the recruitment of participants for the study was carried out in collaboration with the medical and nursing team responsible for antenatal follow-up, who identified pregnant women meeting the eligibility criteria for participation in the study. In Portugal, recruitment was conducted in collaboration with the team of the "Terna Aventura" Project programme.

The inclusion criteria were as follows: being in the second trimester of pregnancy or at a more advanced stage; presenting common discomforts associated with pregnancy; being aged 18 years or over; and having full mental capacity to answer the questions during data collection adequately.

With regard to the exclusion criteria, participants who missed any of the sessions were deemed ineligible, as were those with a documented history of contact allergy to the adhesives employed in Auriculotherapy, those who developed auricular inflammation, or those presenting congenital malformations of the auricle, such as microtia or anotia, characterised by unilateral or bilateral underdevelopment of the auricular structure.

In total, 25 participants who agreed to take part in the study were included, of whom 17 were in Brazil and 8 in Portugal. The difference in the number of participants between Brazil and Portugal is attributable to the number of available and eligible participants at each site who consented to take part, with theoretical data saturation having been achieved.

Initially, the study objectives, potential benefits and risks, and the procedures related to the intervention were explained to the participating pregnant women. Subsequently, those who agreed to participate provided written informed consent.

Prior to the intervention, each participant completed a semi-structured form, which included questions for sociodemographic characterisation, obstetric profile and identification of gestational discomforts.

The intervention was carried out weekly over four weeks. At each session, the pregnant woman's perception of the discomforts previously reported was assessed before the application of Auriculotherapy, and a field diary was used to record her emotional state.

The Auriculotherapy technique was applied using black mustard seeds, positioned at specific auricular points corresponding to the discomforts reported, in accordance with auricular point protocols previously developed by the principal investigator, a specialist in TCM and Obstetric Nursing. These protocols were defined for the following gestational discomforts: anxiety (and/or stress), low self-esteem (and/or physical fatigue, emotional instability, mood swings), cramps, headaches, oedema, heartburn.

In each procedure, the participants' ears were previously cleansed with 70% alcohol. Based on the auricular map⁶, the anatomical regions indicated therein were used as reference points. However, as in any auricular point location process, a stainless steel probe was used to identify the sites compatible with the adopted protocol. This process of identifying sensitivity was carried out on both ears of the participant.

By applying gentle and continuous pressure to the corresponding region of the pregnant woman's ear, the mustard seed was fixed with adhesive at the point considered most sensitive to palpation, according to the participant's own perception. After placement, a circular massage was performed at each point, at least three times, gently yet firmly, to ensure adequate adhesion. The participant was expected to experience slight discomfort during the procedure, thereby confirming the correct localisation of the reactive point.

During each session, the participants received guidance on the necessary care: to perform gentle massage on the seed points at least three times a day; to exercise caution during bathing to prevent detachment of the adhesives protecting the seeds; to use cotton wool soaked in 70% alcohol to maintain local hygiene; and to remove the adhesives with the seeds between the fifth and seventh day of use.

In the fifth week, each pregnant woman responded to the guiding question included in the second part of the semi-structured form: "What was it like for you to have been treated with the Auriculotherapy technique in relation to the discomforts you reported at the beginning of the investigation?"

Of note, given the pandemic context between 2020 and 2022, careful organisation of participant appointments was required in both Brazil and Portugal throughout the data collection period.

Quantitative data were analysed descriptively using absolute frequencies. The qualitative data were analysed using Bardin's content analysis⁷, thereby identifying two main categories and their respective subcategories. To safeguard the credibility and rigour of the qualitative analysis, multiple researchers were involved in the analytical process to mitigate individual bias.

To organise and present the study categories, participants were identified from G1 to G25, distinguishing the pregnant women from Brazil (G1B–G17B) and from Portugal (G18P–G25P).

Results

Regarding the participants' profile (Table 1), the majority were married, had higher education, were aged between 28 and 32 years, were employed and had a low family income. With respect to the obstetric profile, most were in their first pregnancy, in the third trimester, and had not planned the current pregnancy; the participants reported satisfaction with the current pregnancy, and the most frequently reported discomforts were stress, anxiety and lower back pain.

Table 1. Profile of the study participants.

Item	N=17 (Brazil)	N=8 (Portugal)
Marital status		
De facto union	10	0
Married	7	8
Education		
Incomplete secondary education (Brazil) / incomplete secondary education (Portugal)	9	0
Higher education (Brazil and Portugal)	8	8
Age group		
23 to 27 years	11	0
28 to 32 years	6	8
Occupation		
Unemployed	9	0
Employed	8	8
Family income		
Between 1 and 2 Brazilian minimum wages (R\$ 1,050.00 at the time of the study)	15	0
Between 2 and 3 Portuguese minimum wages (€ 705.00 equivalent to R\$ 3,525.00 at the time of the study)	2	8
Gestational age at the start of the study		
20 to 23 weeks	6	0
30 to 33 weeks	9	6
34 to 37 weeks	2	2
Number of previous pregnancies		
Two	6	2
None	11	6
Planning of the current pregnancy		
No	9	8
Yes	11	0
Satisfaction with the current pregnancy		
Yes	10	8
No	7	0
Most frequently reported discomforts in the current pregnancy		
Stress, anxiety and lower back pain	12	6
Other	5	2

CATEGORY 01 - Gestational discomforts reported by the pregnant women

This category encompasses the physical and emotional discomforts related to pregnancy, as well as the positive effects reported by the participants, who described relief and improvement of the symptoms initially presented. To facilitate a more detailed examination of these aspects, the category was subdivided into two subcategories: *Physical discomforts and relief following Auriculotherapy* and *Emotional discomforts and improvement following Auriculotherapy*.

Physical discomforts and relief following Auriculotherapy

Regarding the discomforts reported by the participants, lower back pain, lower limb oedema, and cramps emerged as the predominant clinical manifestations that the women themselves associated with the gestational period. Notably, nine of the participants were in the second trimester of pregnancy, further underscoring the significance of the reported discomforts, as illustrated in the testimonies presented below:

Believe me, there were days when I would just stand still, not wanting to do anything because of the swollen legs [...] G3B

For example, when I was lying down and moved, there were times when my back would sort of... lock up. Then I felt a very strong pain, but thanks to the treatment it kept getting better and better. Nowadays I don't feel it as much as I did before. It relieved it a lot, a lot, a lot, a lot. (G6B)

Regarding the lower back pain, I improved eighty per cent. I believe I cannot reach one hundred per cent, because I need to do things around the house and that, like it or not, ends up straining the spine [...] (G9B)

The experience was very good, because it ended up relieving me of quite a few discomforts in the lower back region that I had. The back pain, in particular, I never felt again. (G20P)

Emotional discomforts and improvement following Auriculotherapy

Among the emotional discomforts most frequently reported by the pregnant women, stress and anxiety stood out. The emotional state of the participants was observed systematically throughout the sessions, making it possible to identify significant emotional changes, as evidenced in the following testimonies:

[...] the lack of desire to walk or leave the house made me bad-tempered and stressed. But now, after these sessions, I feel more willing and at ease with life (G3B)

Another thing is about the anxiety I suffered from, it sometimes stressed me out. Thank God I am better now. Anxiety not so much, because the baby is close to being born and you do get a bit anxious. But I am much better compared to the beginning of the therapy (G10B)

[...] perhaps the psychological part of Auriculotherapy also worked and has given me some calm, some lightness in reacting to the expectation of labour and the postpartum period (G18P)

CATEGORY 02 - Perceptions of pregnant women and their families regarding the effects of Auriculotherapy

The second category addresses the effects of Auriculotherapy as perceived by the pregnant women and their family members, and is presented under two subcategories: Changes in the attitude/behaviour of pregnant women following Auriculotherapy and Changes in the attitude/behaviour of pregnant women as perceived by family members.

Changes in the attitude/behaviour of pregnant women following Auriculotherapy

Auriculotherapy enabled a progressive improvement in the discomforts initially reported. Consequently, the participants' self-perception of symptom improvement became increasingly evident, as demonstrated in the following testimonies:

The lower back pain decreased gradually; in the first week I had it done on a Monday... by the Friday of the same week I had already improved. On the Saturday of the same week I worked, and when night-time came I did not feel much pain; it was relieved. (G12B)

... Anger at everything, at listening to people... at hearing sounds that are not good for me. When one of these things happened, girl, I would become a different person and say many aggressive things. Not anymore... I am calmer and I am even sleeping much better. (G16B).

In terms of stress, I know that initially, before starting the treatment, I had a bit, I was a bit stressed, a bit, well, I would get very stressed very quickly and I notice that this no longer happened. Already, already not, now I am much calmer, also perhaps owing to the improvements in terms of discomfort (G22P)

Changes in the attitude/behaviour of pregnant women as perceived by family members

Close contact with the pregnant women made it possible to understand how people in their daily lives — family members and friends — perceived changes in attitudes and behaviours associated with emotional discomforts, namely anxiety, stress and mood changes, as characterised in the previous subcategory. These aspects are reflected in the following excerpts.

Today I am calmer, thank God. Even my daughter, my husband and my sisters have noticed that I am much better. I can only be grateful, can't I? All because of the little seeds (G15B)

My partner has been telling me that I am different and complain less than usual, and my colleagues and my elderly clients are also complimenting me because they feel that I am better in conversation and less bothered. The experience was good; it was worth it. (G4B)

[...] even my husband. He and my son, they noticed straight away that I would fly off the handle easily, which is just how it is, especially with the little one because it's natural, isn't it, sometimes they do such things that we... I would immediately lose my temper and now I am much calmer, I end up thinking a little before the way I scold him and everything else. I am quite different, I am quite different, it's true. (G25P)

Discussion

Regarding the profile of the participants from Brazil, their sociodemographic characteristics are found to be consistent with those of the population that uses public health services, predominantly comprising women with low incomes and no access to supplementary healthcare provision. With respect to the age group of the Brazilian pregnant women included in the study, this is consistent with data from the *Birth in Brazil*,⁸ which indicates a representativeness of 69.3% in the Northeast region. In turn, the participants from Portugal present a distinct sociodemographic framework, characterised by women with a higher family income than the Brazilian participants, and the age distribution reflects the prevailing trend towards delayed motherhood, as indicated by Pordata data.⁹

In the context of pregnancy, the majority of participants from both Brazil and Portugal had already experienced previous pregnancies, although the current one had not been planned; nevertheless, reported satisfaction with the pregnancy was considerable.^{2,10} The discomforts reported by the participants are typical of the third trimester, a period during which the anatomical and physiological adaptations of pregnancy frequently impose functional limitations and give rise to specific complaints. According to TCM, such discomforts may be attributable to energy imbalances arising from impaired fluidity of the Yin (Xue) and Yang (Qi) energies within the maternal organism. This theoretical framework underscores the importance of acupressure as a modality for promoting harmonious energy flow throughout the body.¹¹

The findings suggest a positive impact of Auriculotherapy in mitigating the physical discomforts reported by participants. Improvement was observed in cases of lower back pain, lower limb oedema, and cramps — symptoms associated with the mechanical changes of pregnancy — following the application of the therapy in this group.¹²

In addition to the physical discomforts, the participants reported emotional discomforts, including impatience, anxiety and stress. These affective responses may be associated with the variable intensity of aversive sensory experiences and other discomforts intrinsic to the gestational period. The correlation between pain and emotional state is well established; the latter can amplify pain perception in the pregnant woman, whose body is undergoing continuous physiological change. In this regard, the literature indicates that the experience of pain during the gravid-puerperal cycle may alter the woman's lifestyle and influence pregnancy outcomes.¹³ Among the physiological modifications of pregnancy, anxiety frequently emerges as an adaptive response to uncertainty and apprehension. The literature has consistently highlighted the gestational period as one of heightened emotional vulnerability and fluctuation, with direct repercussions on maternal mental health.^{14,15}

This response is, in part, triggered by sensory stimuli and changes in the nervous system, influenced by the production of placental hormones. Such physiological changes may manifest as episodes of anxiety and irritability that are frequently atypical of the woman's pre-pregnancy behaviour.^{16,17} The Auriculotherapy intervention in this group of participants suggests that the technique may constitute an effective complementary approach for attenuating these disturbances and enhancing well-being during pregnancy.¹³ In line with the data from the present investigation, studies confirm that Auriculotherapy is associated with endorphin release, thereby contributing to reduced anxiety levels in pregnant women. These findings further support the relevance of this technique as an effective therapeutic modality for promoting holistic care during the gestational period.^{12,18}

It was evident from the results that the participants perceived Auriculotherapy as having, beyond the benefits of minimising physical and emotional discomforts, a positive influence on relationships with family members and other people in their social circle or support network. The family and social support network constitutes the main pillar of trust for the pregnant woman in sharing emotional experiences. However, the literature warns that gestational anxiety is sometimes undervalued by this network, being dismissed as a commonplace or 'transient' manifestation of pregnancy physiology. Such dismissal may inhibit the woman's emotional expression owing to feelings of shame.¹⁹ Conversely, the participants of the present study reported attitudes of acceptance and recognition on the part of their support network, which appears to have fostered a more positive disposition throughout the gestational period.

From this perspective, TCM presents a wide range of therapeutic possibilities, including the relief of symptoms reported by the pregnant women. Through Auriculotherapy, it is possible to promote the restoration of energetic balance within the organism.²⁰

In this context, guidelines from the Brazilian Ministry of Health reinforce the relevance of integrative and complementary practices as an effective strategy for alleviating physical and emotional discomforts in pregnant women, further emphasising the role of such practices in preventing more severe puerperal disorders and contributing substantially to the reduction of stress and anxiety.²¹ In Portugal, the use of these practices in the context of maternal health has been gaining relevance. Auriculotherapy is established as a safe and low-cost strategy for maternal well-being during pregnancy and for the prevention of disorders in the puerperium, in line with the recommendations of the National Health Service.²² It is regulated as a technique requiring practitioners duly certified by the Central Administration of the Health System (ACSS).^{23,24}

Integrative practices should be incorporated as complementary care strategies, thereby broadening the scope of nursing care and promoting physical and emotional well-being.¹⁰ In this context, the responsibility of nursing professionals is underscored with regard to recognising the importance of applying these practices in caring for pregnant women who present discomforts of a physical and emotional nature.

The implications of these findings should be analysed within a broader context, encompassing not only the individual effects on the pregnant women, but also the broader implications for maternal healthcare delivery and for the humanisation of care throughout the gestational period.

Conclusion

The pregnant women participating in the study reported significant improvements — and, in some cases, the cessation — of the discomforts inherent to pregnancy, with positive repercussions on the perception of tranquillity, both on the part of the women themselves and their support network. The results demonstrate that the Auriculotherapy technique exerted a positive impact on participants' well-being, most notably through a heightened sense of serenity.

The investigation, conducted in two distinct contexts — Brazil and Portugal —, enabled the analysis of the effects of Auriculotherapy on low-risk pregnant women with regard to common gestational discomforts, and despite the differences in sociodemographic profile, the perceptions of the intervention were similar. No discernible cultural influences were identified within the study group, although such influences may have been operative in shaping how the intervention was perceived and experienced by both the participants and their familial and social support networks.

Based on the data obtained, it is concluded that Auriculotherapy is a simple, effective and relevant resource and may be recommended as a first-line therapeutic strategy by Maternal Health and Obstetric Nursing teams. Within this framework, the fundamental role of the nurse in the follow-up of pregnant women is highlighted, particularly within the scope of birth preparation programmes, as a professional equipped to deliver therapeutic interventions that contribute to alleviating the prevalent discomforts of the gestational period.

Further studies are needed to deepen understanding of the effects of Auriculotherapy in alleviating discomforts associated with pregnancy.

Study limitations

It should be noted that data collection took place during the COVID-19 pandemic period, between 2021 and 2022, which constituted a limitation of the present study, namely due to the reduced number of participants. Although the results indicate a positive effect of Auriculotherapy in reducing pregnancy-related discomforts, the possibility that the pandemic context may have influenced participants' perception of these effects cannot be excluded.

Disruptions to healthcare access and the emotional burden associated with this period may have shaped the manner in which the pregnant women appraised the benefits of the intervention, without necessarily invalidating the results obtained. Accordingly, the findings should be interpreted within this contextual framework.

Authorship and Contributions

FCBS: Study conception and design; Data collection; Data analysis and interpretation; Drafting and revising the manuscript; Approval of the final version and taking responsibility for it.

JBLC: Critical review of the manuscript; Approval of the final version and taking responsibility for it.

TRGL: Data collection; Critical review of the manuscript; Approval of the final version and assumption of responsibility for it.

RMSM: Study conception and design; Data collection; Supervision of the study; Critical review of the manuscript; Approval of the final version of the manuscript and assumption of responsibility for it.

Conflicts of interest and Funding

The authors have declared no conflicts of interest.

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Data availability statement

The data relating to the study may be made available upon request due to ethical/privacy restrictions.

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