



Effectiveness of auriculotherapy for stress, based on experience of the therapist: a clinical trial*

Eficácia da auriculoterapia para estresse segundo experiência do terapeuta: ensaio clínico

Eficacia de la auriculoterapia para estrés según experiencia del terapeuta: ensayo clínico

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ABSTRACT

Objective: To evaluate the efficacy of auriculotherapy with semipermanent needles on stress levels in the nursing staff of a teaching hospital. **Methods:** A clinical trial with forty-nine people randomized into three groups: group 1 (control), group 2 (less experienced therapists) and group 3 (more experienced therapists), conducted between January and July 2010. The subjects received eight sessions with the Shen Men, kidney and brainstem points being assessed at baseline, after four and eight sessions, and at follow-up (15 days). **Results:** The ANOVA showed statistically significant differences between the results before and after between the groups in the third assessment ($F = 3.404 / p = 0.042$) and at follow-up ($F = 4.106 / p = 0.023$). These differences were between groups 1/3 in the third assessment ($p = 0.036$) and at follow-up ($p = 0.033$). A marginally significant result was found at follow-up between groups 1/2 ($p = 0.059$). **Conclusion:** Auriculotherapy with more experienced therapists effectively reduced stress in nursing professionals, however, one considers the need for more studies with this procedure. **Keywords:** Auriculotherapy; Complementary therapies; Nursing; Acupuncture; Burnout, professional/therapy; Nursing, team

RESUMO

Objetivo: Ensaio clínico objetivou avaliar a eficácia da auriculoterapia com agulhas semipermanentes sobre níveis de estresse na equipe de Enfermagem de um hospital-escola, entre janeiro e julho de 2010. **Métodos:** Quarenta e nove pessoas foram randomizadas em três grupos: grupo 1 (controle), grupo 2 (terapeutas menos experientes) e grupo 3 (terapeutas mais experientes). Os sujeitos receberam oito sessões nos pontos Shen Men, Rim e Tronco Cerebral tendo sido avaliados no início, com quatro e oito, sessões e follow-up (15 dias). **Resultados:** A ANOVA constatou diferenças estatisticamente significativas entre os resultados antes e depois entre os grupos na 3ª avaliação ($F=3,404/p=0,042$) e follow-up ($F=4,106/p=0,023$). Tais diferenças foram entre grupo 1/3 na 3ª avaliação ($p=0,036$) e follow-up ($p=0,033$). Resultado marginalmente significante foi encontrado no follow-up entre grupo 1/2 ($p=0,059$). **Conclusão:** A auriculoterapia com terapeutas mais experientes reduziu eficazmente o estresse em profissionais de Enfermagem, no entanto, considera-se a necessidade de mais estudos com este procedimento. **Descritores:** Auriculoterapia; Terapias complementares; Equipe de enfermagem; Acupuntura; Esgotamento profissional/terapia

RESUMEN

Objetivo: En este ensayo clínico se tuvo como objetivo evaluar la eficacia de la auriculoterapia con agujas semipermanentes sobre niveles de estrés en el equipo de Enfermería de un hospital-escuela, entre enero y julio de 2010. **Métodos:** Fueron randomizadas cuarenta y nueve personas en tres grupos: grupo 1 (control), grupo 2 (terapeutas menos experientes) y grupo 3 (terapeutas más experientes). Los sujetos recibieron ocho sesiones en los puntos Shen Men, Rim y Tronco Cerebral habiendo sido evaluados al inicio, con cuatro y ocho sesiones y follow-up (15 días). **Resultados:** La ANOVA constató diferencias estadísticamente significativas entre los resultados antes y después entre los grupos en la 3ª evaluación ($F=3,404/p=0,042$) y follow-up ($F=4,106/p=0,023$). Tales diferencias fueron entre grupo 1/3 en la 3ª evaluación ($p=0,036$) y follow-up ($p=0,033$). Un resultado marginalmente significativo se encontro en el follow-up entre grupo 1/2 ($p=0,059$). **Conclusión:** La auriculoterapia con terapeutas más experientes redujo eficazmente el estrés en profesionales de Enfermería, entre tanto, se considera la necesidad de más estudios con este procedimiento. **Descritores:** Auriculoterapia; Terapias complementarias; Grupo de enfermería; Acupuntura; Agotamiento profesional/terapia

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INTRODUCTION

To assess whether auriculotherapy was effective in controlling symptoms of stress, and to compare the results obtained with auriculotherapy conducted with experienced and less experienced therapists, were the main issues motivating this present study. When it comes to research into auriculotherapy, the majority of the studies have used protocols to define the points; however, the importance of experience of the practitioner has not been discussed. Although the technique appears simple and easy to perform, in the context of clinical practice, one cannot affirm that the experience of those who perform auriculotherapy is irrelevant.

Previous studies conducted in a university hospital in the city of São Paulo on absenteeism, pointed to musculoskeletal diseases and mental disorders that occurred due to stress as being the main precursors of the high incidence of sick time ⁽¹⁾.

In this sense, stress can trigger many diseases and foster harm to the quality of life and productivity of the human being, and this has generated great interest from businesses and society to determine its cause and search for methods to reduce it ⁽²⁾. Measures that can reduce stress levels and alleviate anxiety and tension seem to be, therefore, relevant in order for work to be a source of satisfaction, self-realization and to enable the maintenance of healthy interpersonal relationships and productivity ⁽³⁾. In this sense, one could say that caring for professionals who provide health services is a key strategy, since good results of these services depend mainly on work teams that are healthy and capable of promoting the humanization of the service ⁽⁴⁾.

In this context, the primary role that has been attributed to the complementary and integrative practices is the possibility of promoting wellness and preventing disease. One can cite an excerpt from the oldest text of Chinese internal medicine, the Huan Ti Nei Jing, written around 200 BC, which affirmed that giving remedies for diseases that have already developed would be comparable to the behavior of those who begin to dig a well long after they have become thirsty, and those who begin to forge weapons after they have already entered the battle ⁽⁵⁾. "Would they not be too late for these measures?" is a question that could be asked ⁽⁶⁾. Seeking to prevent and find energy imbalances that result in diseases has been the great contribution that Chinese medicine has offered to primary care in its country of origin ⁽⁷⁾.

As to auriculotherapy, this practice has been shown to be quite appropriate for the treatment of different diseases. It has been shown to be similar in efficacy, when compared to the effect of midazolam for anxiety, before tooth extraction in a randomized study with 67

patients ⁽⁸⁾. It was also shown to be positive for anxiety and stress in university students ⁽⁹⁾ and in nursing professionals in the intensive care unit of a hospital ⁽¹⁰⁾. The last two studies used the same protocol points (Shen Men and brainstem), on the basis of which the protocol defined in this study is structured, with the addition of one point (kidney).

This study took for its theoretical reference the nursing theory of Martha Elizabeth Rogers ⁽¹¹⁾, who considered energy as a structuring principle of her theory. In this conception, the human being is understood as a unified whole that establishes connections with the external environment, based on a conceptual model she created, called the *Science of Unitary Human Beings*. This nursing model helps us understand energy exchanges that are inevitable in the therapeutic relationship between those who assist and who are being assisted and that this energy bond is, many times, crucial to the outcome of treatment. Thus, the biopsychospiritual equilibrium of the caregiver is fundamental to the therapeutic relationship ⁽¹²⁾. It should be noted that nurses in Brazil are guaranteed the ability to perform acupuncture and auriculotherapy as a specialty, and their fundamental participation in the process of incorporating this activity broadens the conceptual horizons of the benefits of the technique for the Brazilian population ⁽¹³⁾.

This study questions whether auriculotherapy performed with the purpose of reducing stress levels would have different outcomes when performed with different therapists and, especially, when these therapists have different levels of expertise in clinical practice. Thus, this research was conducted in order to ascertain whether there was a reduction in stress levels of nursing staff who receive auriculotherapy, and if this reduction was associated with different levels of experience of the therapist in the practice of complementary health. Additionally, we took as our framework the holistic view of Martha Rogers in nursing, and the energetic precepts upon which Eastern practices are founded. Therefore, the question that guides this study is the importance of the experience level of the therapist applying the technique, and so, the proposed objectives were: to verify if auriculotherapy conducted with semipermanent needles is effective for decreasing levels of stress in professionals of the nursing staff at the University Hospital, as well as to compare if the results were different when performed by therapists with different levels of experience.

METHODS

This was research using a quantitative approach, in a randomized controlled clinical trial, single blinded (blinding of subjects regarding the therapist's experi-

ence) with three groups: control group – no intervention (Group 1), a group of semipermanent auricular needles inserted by less experienced therapists in auriculotherapy (Group 2) and a group with more experienced therapists (Group 3). Data collection was performed at a teaching hospital between January and July, 2010.

The research project was approved by the Committee on Ethics in Research of the University Hospital of the University of São Paulo, by Opinion CEP-HU/USP 941/09 and given the identification number of the Registry of Clinical Trials of NCT01141374, at ClinicalTrials.gov. The study followed Resolution 196/1996 of the National Health Council, to engage humans in research, providing the Terms of Free and Informed Consent to the subjects and offering the opportunity for continuity of care to participants in the control group, at the end of the research.

To define the sample of subjects participating, we used the Inventory on State of Stress, or *List of Stress Symptoms* (LSS), of Covolan⁽¹⁴⁾. This instrument was administered to all professionals who had expressed interest in participating in the study (73), however, only those who achieved medium (29 to 60 points), high (61 and 120 points) or very high (> 120 points) scores were included; 49 of these finished the research. Thus, 16 subjects were selected for *Group 1* (Control), 16 for *Group 2*, and 17 for *Group 3*. Inclusion criteria were: (1) voluntary participation in the study with time available to attend sessions, (2) obtaining the minimum scores for the LSS of medium, high or very high level, (3) not being pregnant, (4) not using neuroleptics, (5) not practicing other energy therapies, (6) no urolithiasis present. Exclusion criteria: (1) going on vacation or leave during the study period, (2) abandonment and loss of follow-up visits, (3) adverse effects (nightmare), (4) incomplete questionnaires.

To collect data, we used the following instruments: *List of Stress Symptoms* (LSS) and a questionnaire with sociodemographic data. Data were collected in two phases due to the availability of therapists, the first in January and February of 2010, and the second in June and July of 2010. The LSS instrument was administered before treatment, after four sessions, after eight sessions and 15 days after termination (follow-up). The intervention groups (Groups 2 and 3) received eight sessions (1 per week), lasting 5 to 10 minutes at points Shenmen, Kidney and Brainstem (Figure 1). The Shenmen and Brainstem points have calming properties and the Kidney has an energetic function⁽¹⁵⁾. After proper location of reactive points with a point locator, antisepsis was provided with cotton and 70% ethyl alcohol applied to the pinna, and application of needles affixed with micropore tape.

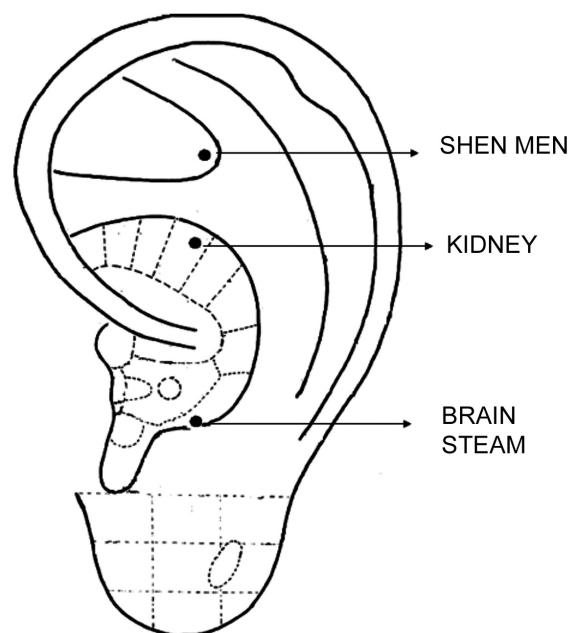


Figure 1. Identification of the auriculotherapy points used in the study. São Paulo, 2011.

Group 2 (less experienced therapists) consisted of two nurses, two students of the undergraduate degree course in nursing who were members of the Research Group in Alternative Practices or Complementary Health. None of them had had training in acupuncture or auriculotherapy and were trained only to perform placement of the points contained in this research protocol. In Group 3 (more experienced therapists), subjects were seen by a nurse specialist in acupuncture, with 20 years of experience in this area and related practices, and two nursing students with education in auriculotherapy and two years of experience in practice. It is noteworthy that there was no type of previous therapeutic relationship established between the subjects and therapists, regardless of experience level.

For all data, we calculated mean and standard deviation for their description and analysis. A normal distribution of data was verified, based on Levene's Test of Homogeneity of Variance. Thus, because a normal distribution was obtained, parametric tests were used for statistical analyses; for comparison of the LSS scores in different moments of assessment, the ANOVA test for repeated measures was utilized. These tests were applied using the SPSS software program, version 17.0. Tukey's test of multiple comparisons was also used to observe the statistical differences of the results between groups. With the ANOVA test for repeated measures, the differences between the results of the LSS obtained during the collection time were compared: LSS1 (Baseline); LSS2 (after the fourth session); LSS3 (after the eighth session) and LSS4 (follow-up at 15 days).

RESULTS

Initially, participants included a total of 73 nursing professionals, but only 49 completed the research. Of these, eight were nursing assistants, 29 were nursing technicians and 12 were professional nurses. Of the 49 professionals, 26 (53%) presented an average level on the LSS, and 23 (47%) had scores indicating high stress. The next step was to randomly assign them in terms of experience levels of the therapists, by simple randomization into three groups: Group 1 (Control), Group 2 (less experienced therapists) and Group 3 (more experienced therapists) (Figure 2).

There were 24 instances of subjects dropping out of the research for several reasons, as shown in Figure 2. Only one person withdrew due to presentation of discomfort. This professional reported having had nightmares, after applications of auriculotherapy. It is noteworthy that this employee worked at night and always received the care after completing her shift.

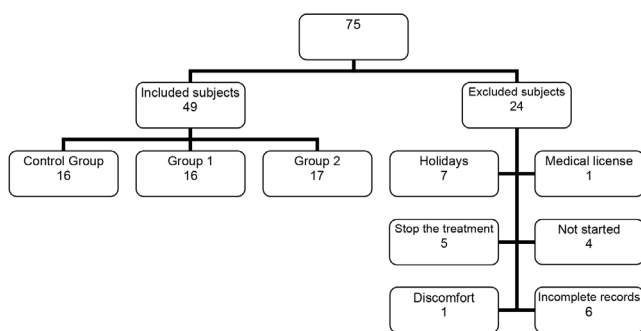


Figure 2. Flowchart of subjects throughout the trial. São Paulo, 2010.

The ages of the subjects ranged between 23 and 60 years of age; 47 were female and two were male. Professionals from three different shifts participated in the study (morning, afternoon and night), and were seen after their duty shift. The sectors where employees

worked were: Adult Emergency Department, Infant Emergency, Internal Medicine, Surgery Clinic, Surgical Center, Hemodialysis, Nursery, Pediatrics, Rooming-in, Ambulatory, Adult ICU, Pediatric ICU, Central Supply and Sterilization Unit, Obstetric Center, Hospital Infection Control, and the Basic Health Unit. Table 1 presents the means and standard deviations for age, working time, initial LSS score and gender of the participants.

Table 1 – Mean and standard deviation of age, working time (years) and initial LSS score * according to the groups. São Paulo, 2010

	Group 1		Group 2		Group 3		P value
	M	SD	M	SD	M	SD	
Age (years)	41.5	12.88	38.88	10.29	41.88	10.97	0.73
Working time (years)	14.95	9.84	9.90	8.50	15.17	8.92	0.16
Initial LSS (points)	61.75	14.87	64.62	20.38	64.35	22.3	0.98
Gender Female (%)	94%		94%		100%		0.58

* LSS: *List of Stress Symptoms*

A difference in the means was found between groups, when comparing between LSS3/LSS1 ($F = 3.404 / p = 0.042$) and between LSS4/LSS1 ($F = 4.106 / p = 0.023$). To verify that the results obtained were different, when performed by therapists with different levels of experience, we applied the Tukey post hoc test: it was observed that the difference was statistically significant between the Group 1 (Control) / Group 3 (more experienced therapists) ($p = 0.036$), between LSS3/LSS1 and between LSS4/LSS1 at follow-up ($p = 0.033$). Group 2 (less experienced therapists) presented a marginally significant value for LSS4 / 1 on the Post Hoc test ($p = 0.059$), as shown in Figure 3.

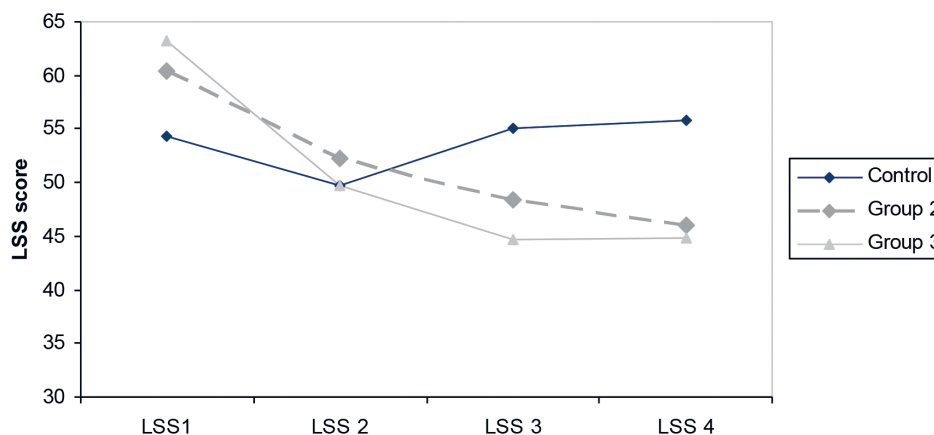


Figure 3. Distribution of groups according to levels of stress by the *List of Stress Symptoms* (LSS) over time. São Paulo, 2010.

DISCUSSION

In this study, a statistically significant difference was observed when comparing the results between the groups based on the third evaluation (after eight sessions) and the fourth evaluation (follow up) in the group with more experienced therapists, and the positive results began to emerge in the less experienced group of therapists in the last evaluation, with a marginally significant value. These results suggest that experience, knowledge and clinical practice were important for achieving success, although the marginally significant results for the group of less experienced therapists are relevant for discussing the technique and protocol of the chosen points. The group was composed of two students and two nursing professionals, for whom only the protocol for the points used in the study were taught. It can be affirmed that the fact of not knowing the technique and scope of auriculotherapy was not a complete impediment to the achievement of positive results, since there was a defined protocol and it was not necessary that they knew how to diagnose or conduct energy assessments.

Thus, in some studies^(16,17) of auriculotherapy on preoperative anxiety, the interventionists were not necessarily acupuncturists, and technique was effective, simple, non-invasive and could be used by different professionals and also by paramedics transporting patients by ambulance to the hospital from their homes⁽¹⁶⁾. One of the studies utilized auriculopressure to reduce anxiety in patients with gastrointestinal complaints, during transport by ambulance, in which they chose only two points, for group for relaxation and one group for placebo. The results were significant for the relaxation group⁽¹⁶⁾. In 2007, another study was conducted with preoperative auriculopressure in 100 elderly patients, prior to lithotripsy, using the same protocol used for patients in the hospital. Positive results were found with the relaxation point when compared to the placebo point selected⁽¹⁷⁾. Therefore, in these studies, the extent of relaxation by auriculotherapy was functional, independent of the therapist and his training.

Favoring the necessity for previous knowledge in order to achieve technical success, Nogier⁽¹⁸⁾ – considered to be the father of modern auriculotherapy – said that while the technique of auricular acupuncture seemed simple, his knowledge and diagnostic skill in Western medicine enabled him to perform many treatments, without which it would not have been possible to be successful.

Thus, there are two main strands of auriculotherapy today: the Chinese and the French of Nogier. The Chinese auricular acupuncture is part of a set of therapeutic techniques of Traditional Chinese Medicine (TCM), it is believed that this has been developed with the systemic

(body) acupuncture for millennia, although there are no Chinese auricular maps in ancient books of Chinese internal medicine, solely citations of its use⁽¹⁹⁾. Some differences exist between Eastern and Western maps currently developed, however, it is noteworthy that the most important distinction between the two techniques is how to choose the points and the diagnosis that gives the foundation to therapy. Nevertheless, Nogier's research brought the attention of the scientific world to auriculotherapy. The viewpoint of Nogier is based on studies of neurology, embryology and his research in the light of science has helped to spread the technique to the world⁽¹⁸⁾. On the other hand, the Chinese view is based on the cosmological precepts of Yin and Yang, Five Elements, the energetic physiology of Zang Fu (organs and viscera), and specific criteria for evaluation and diagnosis by TCM⁽²⁰⁾.

In fact, skill and experience are essential when treatments are individualized and depend on knowledge of TCM diagnosis. However, when treatments are based on formulas, it may be sufficient for the acupuncturist to demonstrate the ability to reproduce the technique of the needles that are being used⁽²¹⁾.

Considering that the subjects did not know who had experience or not, and keeping in mind that the less experienced therapists were trained to perform the technique accurately, the different results regarding the efficacy can point to questions such as: does previous experience of the therapist make a difference? What factors are implicated in obtaining these results? In acupuncture, many results may have been considered false negatives, because of this bias. The results of this study may corroborate the idea that when it comes to research in complementary therapy, there is also need to control this variable: the interventionist.

Unlike the aforementioned studies of auriculopressure, in this study, therapeutic success was not fully achieved by the less experienced therapists. It is questionable if the success obtained by the more experienced therapists was due to purely technical issues of auriculotherapy (since they had more competence in the location of points) or if the aspects related to “who applied the technique” would actually be relevant to the success obtained. However, one wonders hypothetically whether the therapeutic relationship became more resolute, due to the confidence that the more experienced therapists inspired compared with those who were less experienced, during the process of communicating, and if energetically those who had some practical knowledge of technique possessed a certainty that enabled an exchange of energy that was harmonic and intentional, by the inevitable changes and interactions explained by the principles of Energy Field, Patterns and Resonance of Rogers' *Science of Unitary Human Beings*⁽²²⁾.

In relation to the communication established between therapists and research subjects, it can be affirmed that there is no neutrality in exchanges of messages made between people, and all communication has two main aspects: the *content*, fact, information that you want to transmit, and the *sentiments* involved, that can be perceived, consciously or unconsciously. In this conception, the human being is understood as someone who possesses psychosocial and psychobiological codes, and the patients are inevitably aware of the professional, and create links based on the way the professional establishes his verbal and nonverbal communication. Thus, what one is, one thinks and feels, expressed by behavior, words and gestures, and this fact speaks so loudly that you can determine the patient's adherence, or not, to prescribed guidelines or conduct ⁽²³⁾.

From this perspective, sounds of communication may have been captured in the interaction between therapist and subject, through verbal and nonverbal means, giving rise to underlying sentiments and possible uncertainty of the therapists, arising from lack of practice and experience in the technique. In fact, the role of the nurse is not restricted to performing techniques or procedures, but, to proposing an action of comprehensive care, implying, among other things, the development of communication skills ⁽²⁴⁾, with these being an instrument to facilitate the promotion of biopsychosocial- spiritual and emotional health and well-being of the client ⁽²⁵⁾. And, surely, this extends to integrative and complementary practices and also to auriculotherapy.

Related to the model of Rogers, the *Science of Unitary Human Beings*, the theorist defined four main concepts (*Energy Fields, Openness, Pattern* and *Pandimensionality*) and three hemodynamic principles (*Integrality, Resonance* and *Helicity*). It is understood that *Field* is a unifying concept and *Energy* is the natural dynamics of the field. The *Energy Fields* are endless and no limits exist. Regarding the concept of *Openness*, Rogers ⁽²²⁾ postulated that the universe was an open system in continuous change and innovation. *Pattern* was defined as an abstraction that gives identity to the human field that is unique and integrated with the environmental field. Finally, *Pandimensionality* is defined as a nonlinear domain without spatial or temporal attributes and which covers the human and environmental fields.

Regarding *Principles of Homeodynamics* they correspond to the *integrality*, the constant and total integration of the human and environmental fields. The continuous changes that occur between them, with varying wave frequencies, intensity and velocity of responses were named *resonance*. The response patterns caused by the continuous changes that occur in the human and environmental fields, which have a single direction, in

which the past is process incorporated in the present in a dynamic and non linear rhythm, known as *helicity* ^(11,22).

In recent decades, beginning in 1970, inspired by Rogers, a new generation of theorists generated conceptual developments, such as integrated awareness, empathy, and empowerment, among others, discussed to clarify the process of mutual human interaction, as a phenomenon of fundamental importance for wellbeing. The perception of the moment of integration (mutual learning process) can manifest itself in different ways with patterns in which the waves are complementary, harmonic, synchronous or patterns of dissonance, whose waves have frequencies that are chaotic with each other ⁽²⁶⁾.

Based on this information, one may suggest that the interaction between the human energy fields was shown to be harmonic and effective between subjects and the more experienced therapists, and that principles such as *Resonance, Energy Field, and Patterns of Synchronicity* were developed during the course of the study.

Rogers defined non-invasive modalities as central to nursing care in order to bring about wellbeing and quality of life. Among these were included: music, reiki, acupuncture (auriculotherapy is included), therapeutic touch, meditation, magnet therapy, among other techniques. The focus of nursing care for Rogerian science is to recognize patterns and be a facilitator for the client to participate consciously in the changes, of harmonious integration between person and environment, and promote the potential of healing and wellbeing ⁽²⁷⁾.

Finally, it can be said that it is through communication that people can establish relationships, interactions, influencing each other based on beliefs, values, life history and culture, and it is why, therefore, the therapeutic relationship acquires much importance in the phenomenon of caring. The definitions elucidated seek to justify why the personhood of the therapist was present in the results, defining technical attainment and practical success of the research. One wonders, based on the findings, whether the therapist in auriculotherapy, acupuncture and other complementary practices could be considered an integral part of the technique, given their individuality, culture, experience, intentionality, communication, and finally, technical skill.

CONCLUSION

This study showed that under the conditions in which the clinical trial was proposed, the results were statistically significant for the intervention group with the more experienced therapists, in terms of decreasing the symptoms of stress in the nursing staff. Although, a marginally significant result was observed in the last

evaluation in the intervention group of less experienced therapists, thus suggesting that the protocol of auricular points was positive even for those unaware of the technique and its effects. We discussed the relevance of the therapist as being integrated into the technique, with his experience and personality, to achieve technical

success and treatment success. However, studies with a larger number of subjects need to be conducted so that it may be asserted that auriculotherapy conducted by more experienced therapists is the most effective intervention, and is more efficient than with less experienced therapists.

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