

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Use of Acupuncture for the Chronic Neck Pain: Application to Adults as Part of Primary Health Care

Camila da Silva Gonçalo¹, Jorge Vas² and Antonio Carlos Pereira³

¹*Department of Preventive and Social Medicine. Faculty of Medical Sciences, State University of Campinas–UNICAMP, Campinas, São Paulo*

²*Pain Treatment Unit (Doña Mercedes Health Centre), Dos Hermanas, Seville*

³*Department of Community Dentistry - Piracicaba Dental School, State University of Campinas–UNICAMP, Piracicaba, São Paulo,*

^{1,3}*Brazil*

²*Spain*

1. Introduction

Neck pain (cervical pain) has been described in the literature as a common complaint in the adult population (van der Velde et al., 2010; Mäntyselkä et al., 2010). It is more prevalent in women, both as regards the number of cases and extent of this type of pain (Fejer et al., 2006). Neck pain can occur due to jaw disorders, whose etiology is complex and unresolved (Bretan et al., 2005). These disturbances may trigger other affection, in addition to neck pain, such as: headaches, earaches, popping joints, mandibular locking, and lateral deviation of the mandible (Okeson, 1998; Simma et al, 2009). The onset of these affections may be linked to the close relationship between the cervical spine and temporomandibular joint (Tedeschi-Marzola, 2005), and may also included the equilibrium relationship between the braincase, temporomandibular joint, articulation of the skull and cervical spine (Butler, 2003).

The management of individuals with chronic pain has been a challenge, since various factors may interfere in the development of this type of pain. Outstanding among these factors are emotional situations; interests in obtaining workers' compensation benefits – being laid off work and/or retired due to disability (Kraychete et al. 2003). Moreover, conditions of anxiety and depression tend to make it difficult to apply strategies used for the treatment/control of neck pain (Institute for Clinical Systems Improvement, 2007).

Neck pain and headaches are syndromes that represent a clinical challenge for dentists and physicians (Lu et al., 2001). Furthermore, neck or cervical pain has been recognized as a frequent complaint among adults, a fact that has resulted in a high demand for medical services, in addition to causing absenteeism and incapacity to work (Willich et al, 2006; Matsudaira et al., 2010). Painful disorders that affect the neck area are known as common incapacity affections that involve high cost medical treatment (Haines et al., 2009).

Conventional therapeutic treatments are not always capable of producing chronic pain relief (Simma et al., 2009). The history of acupuncture reveals the existence of an ancient relationship between this therapy and the treatment of pain (Filshie and Cummings, 2001).

The use of acupuncture in public health care systems has been recommended by the World Health Organization – WHO (1999). This Organization has also recommended the use of acupuncture in the treatment of neck pain, in view of the proven effectiveness of this therapy (WHO, 2002).

In some countries the use of acupuncture in addition to conventional medical treatment has shown cost-benefit (Kim et al., 2010). As acupuncture is a non-pharmacologic treatment modality (Wang et al., 2008) and has presented satisfactory results in reducing pain intensity (Lu et al., 2001) it could be more widely used in chronic health situations, especially for primary care in the public health service.

The aim of the present study was to describe the results obtained with acupuncture treatment applied to adult patients with chronic neck pain, assisted by a public service providing primary health attention, located in the south of Spain during the year 2008.

2. Methods

The present work is characterized as clinical study (case series) conducted to verify the possible proportionate benefits to the health of patients with chronic neck pain treated by acupuncture. The study sample was composed of 100 patients diagnosed with chronic cervical pain. Data collection was accomplished in the Pain Treatment Unit - UTD, located at the Doña Mercedes Health Centre (Spain). Patients included in the present study were those who signed the informed consent document, with complaint of chronic cervical pain (pain experience equal to or longer than 03 months) and, who then received two acupuncture sessions during the months from January to December of 2008 (participation in at least 2 sessions).

To measure pain intensity, the Visual Analogue Scale (VAS) from 0 to 100 mm was used (Wewers & Lowe, 1990), and the Likert Scale from 0 to 4 points was used to measure the following variables: frequency, level of incapacity caused by the pain, level of sleep disorders caused by pain, and analgesic consumption (Likert, 1932; Likert, 1967). The studied variables were classified showed in table 1.

The other variables were analyzed through the absolute and relative frequencies (gender, marital status, and time of pain experience) or mean and standard deviation (age). Initially the data were tabulated in spreadsheets (Excel) and later the Software SPSS version 17 was used to perform statistical analysis. The patients were submitted to 1 acupuncture session a week.

The data were analyzed by means of comparing the values obtained in the first and in the last acupuncture consultation. The Wilcoxon test for two dependent samples was used for intensity, frequency and level of incapacity caused by the pain; level of sleep disorders caused by pain; and analgesic consumption. The power of the test was a minimum of 0.80, and Alpha of 5%, according to the pattern most frequently used in the medical literature (Gardner & Altman, 1986; Gong et al., 2000; Lauer, 2006).

3. Results

The 100 patients participating in this study, received an average of eight acupuncture sessions, and the majority of them were women (84%).

As regards marital status, 78% of the individuals were married; 12% single; 8% widowers and 2% divorced. The average of age and the respective standard deviation were 56 and 13 years.

Studied variables	Levels	Description
Pain Frequency	0	never feels pain
	1	pain that appears sporadically, or with a duration of up to 1 hour a day, every day of the week; or pain that appears on less than 02 days a week, including pain with a duration of 1 hour
	2	presence of persistent pain during a maximum of 6 hours a day
	3	presence of daily pain with a duration of 6 hours and less than 24 hours
	4	presence of constant pain
Analgesic Consumption	0	never consumes analgesic
	1	consumes analgesic sporadically or less than the dose recommended for the illness
	2	consumes analgesic respecting the doses recommended by the medical practice guidelines for the illness
	3	consumes analgesic with a higher dose than that recommended by the medical practice guidelines for the illness
	4	needs to increase the number of analgesics, as well as continual increase in the dose administered.
Level of Incapacity	0	there is no incapacity
	1	there is incapacity for doing heavy work, or work that demand great physical effort
	2	the patient is unable to accomplish daily tasks
	3	the patient needs help to dress or to take bath
	4	complete incapacity
Sleep Disorder	0	the pain does not wake up the patient
	1	the patient wakes up occasionally during the night because of the pain
	2	the patient wakes up 1 time every night because of the pain
	3	the patient wakes up 2 or more times every night, most of the week, because of the pain
	4	the patient does not sleep because of the pain

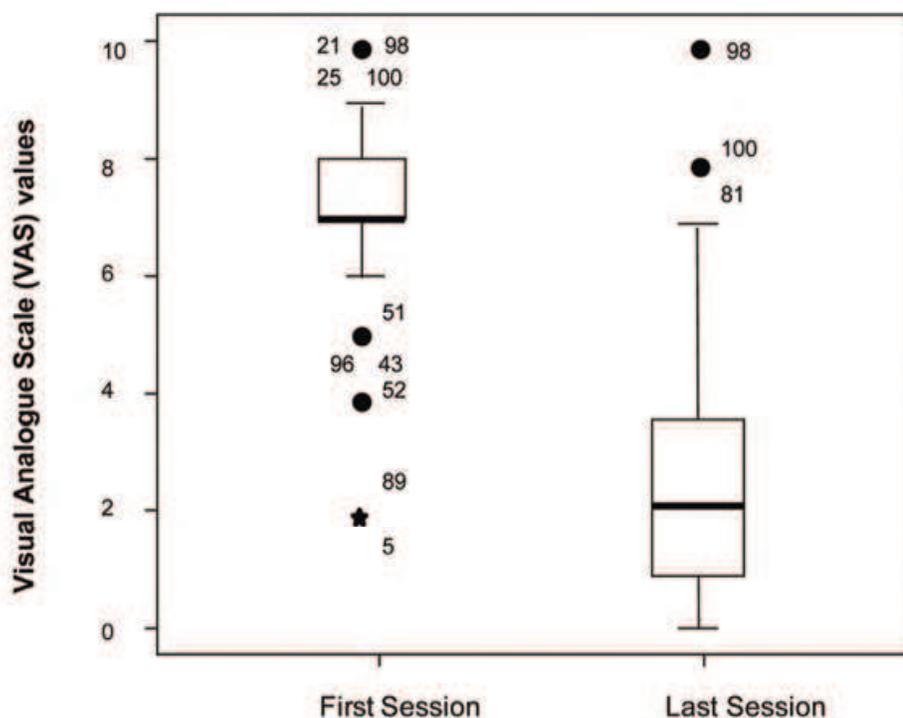
Table 1. Levels of pain, analgesic consumption, incapacity and sleep disorder

The results with regard to pain experience indicated its predominance for a period from 12 to 180 months (71%), which corresponds to a period of 1 to 15 years; followed by pain for a period of less than 12 months (17%); pain for a period of longer than 180 months (12%).

The results of the Wilcoxon test for dependent samples revealed significant changes ($p < 0.0001$) in the: pain intensity, pain frequency, analgesic consumption, incapacity caused by pain and sleep disorders due to pain (Graphs 1, 2, 3, 4 and 5).

The pain intensity was classified in the first acupuncture session and for most of the patients it was close to the maximum value of VAS (median = 7), whereas in the last session, the patients reported pain close to the lowest degree of this scale (median = 2) - Graph 01.

Pain intensity in the first and in the last acupuncture session (Median)



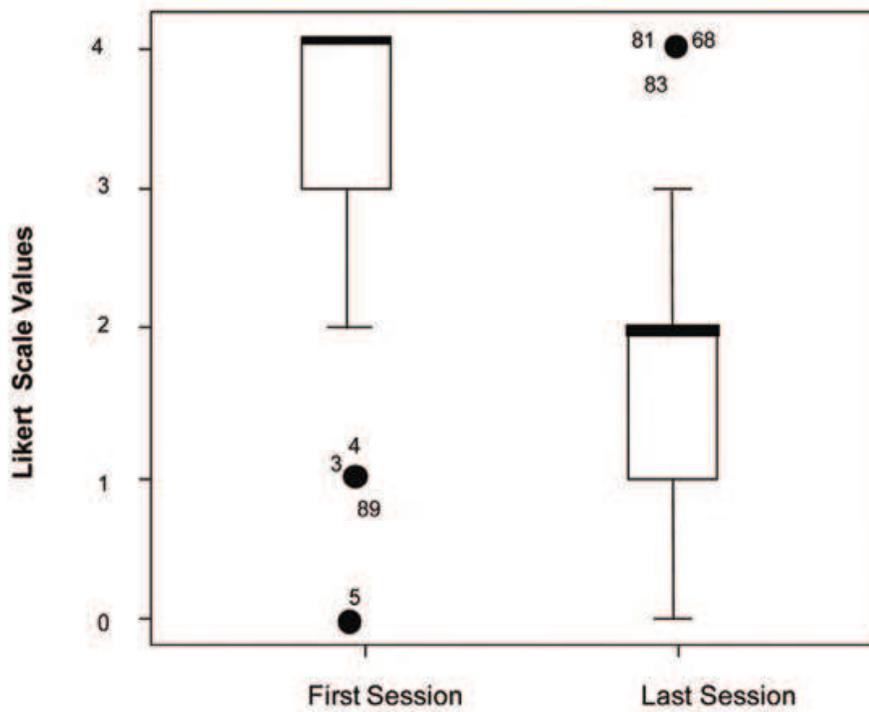
Graph 01. Pain intensity in the first and in the last acupuncture session (Median)

As regards pain frequency (Graph 02) it was observed that in the first session the majority of the patients reported the presence of constant pain (median = 4), and at the end of the session this population reported the presence of persistent pain with duration of at the most 06 hours a day (median = 2).

In the first session, most of the patients reported that they consumed analgesic and respected the doses recommended by the medical practice guidelines for the illness that affected them (median = 2), however, in the last session of the proposed treatment, practically the absence of consumption of these medicines was related (median = 0) - Graph 03.

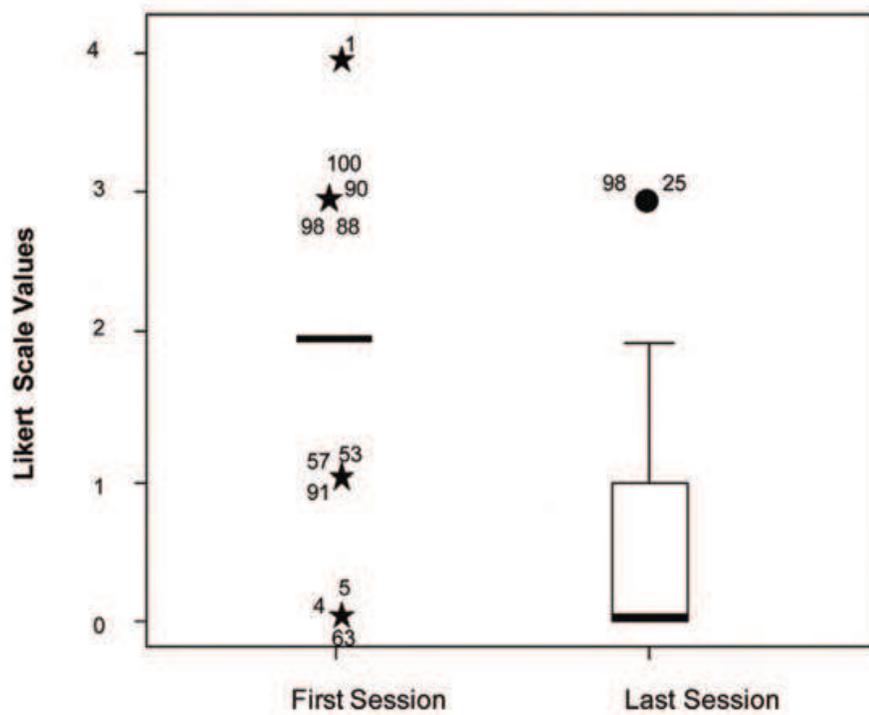
Data as regards the level of incapacity (Graph 04) demonstrated that in the first acupuncture session, most of the patients reported that they were unable to accomplish daily tasks (median = 2), while in the last session, most of the patients reported no such incapacity (median = 0).

Pain frequency in the first and in the last acupuncture session (Median)



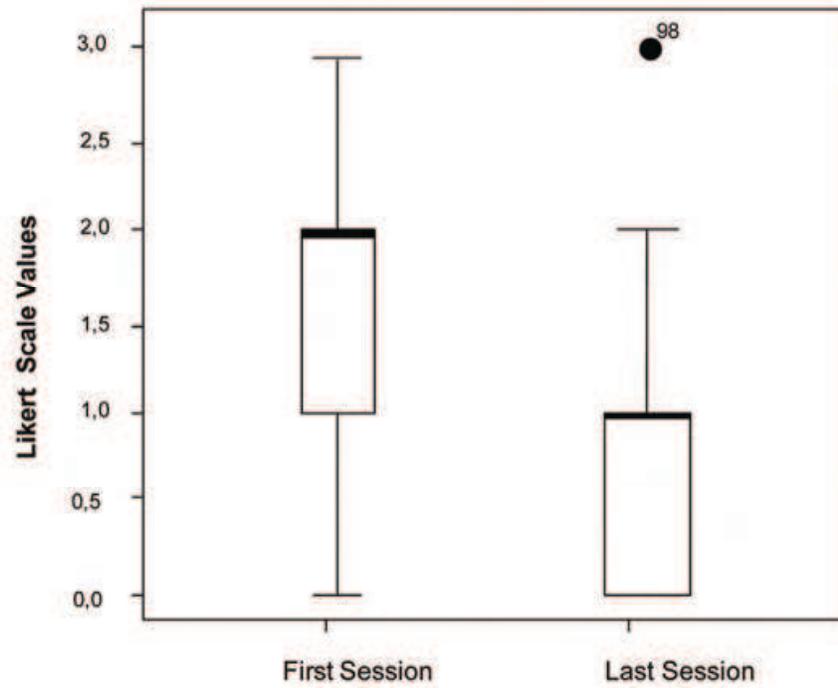
Graph 02. Pain frequency in the first and in the last acupuncture session (Median)

Analgesic consumption in the first and in the last acupuncture session (Median)



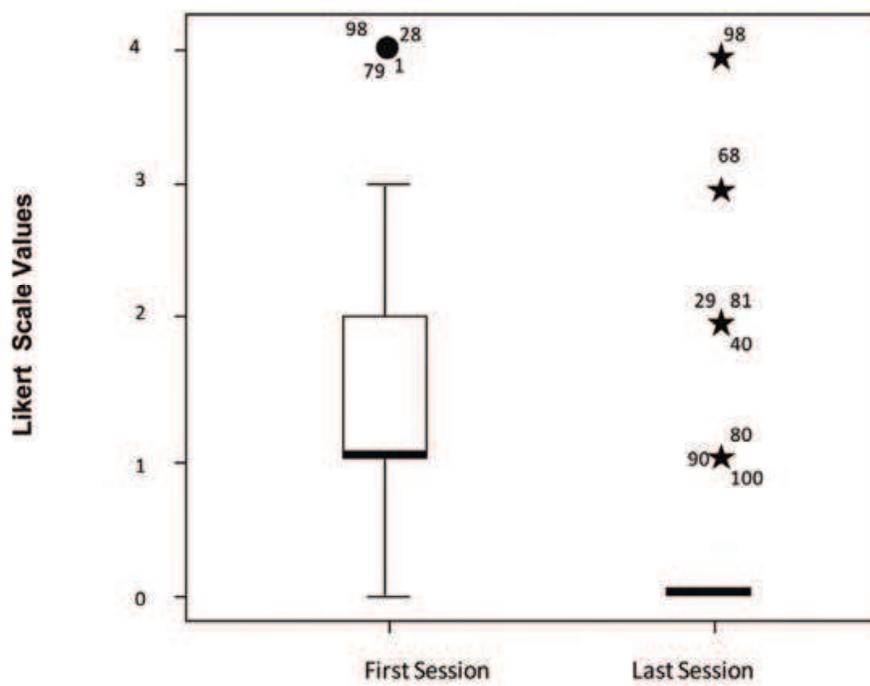
Graph 03. Analgesic consumption in the first and in the last acupuncture session (Median)

Incapacity caused by pain in the first and in the last acupuncture session (Median)



Graph 04. Incapacity caused by pain in the first and in the last acupuncture session (Median)

Sleep disturbance caused by pain in the first and in the last acupuncture session (Median)



Graph 05. Sleep disorder caused by pain in the first and in the last acupuncture session (Median)

In the first treatment session the patients classified sleep disorders as being of degree 1 (median = 1), which corresponds to the fact of waking up occasionally during the night because of pain, however, in the last session, most of the patients reported that they did not to wake up for this reason (Graph 05).

4. Discussion and conclusion

In the medical literature, the type of study conducted by observing a group of patients group who present common characteristics is called a "case series". Such studies are used to describe some of the clinical, physiopathological or functional aspects of affections, in addition to reporting aspects with regard to the treatment or diagnostic procedure used in this context (Porta, 2008).

Due to the fact of presenting a detailed report of the clinical experience of the studied subject, the publication of case series can indeed contribute to the production of relevant bibliographical material. On the other hand, this methodology presents some limitations that prevent the inference of a causal relationship (Kestenbaum, 2009) and the confirmation of hypotheses (Hennekens & Buring, 1987).

The lack of control groups is an inherent feature and limiting the case series (Porta, 2008). However, this methodology has been widely incorporated in the assessment of health technology, especially when there is no strong evidence on the effectiveness of therapy tested (Dalziel et al, 2005).

Considering the advantages and disadvantages mentioned above, in the present study the design principles called case series it was adopted in order to make a contribution to more detailed scientific knowledge with regard to acupuncture treatment for cases of chronic cervical pain attended by the public service. That was made because decisions about health policies are going to be necessary even in the absence of scientific evidence produced by means of the randomized clinical trials (Dalziel et al., 2005). The importance of conducting this type of study is pointed out insofar as it represents the possibility of helping other researchers that have produced similar observations, aiming to create better conditions for formulating hypotheses (Hennekens & Buring, 1987) and for developing future studies with higher methodological quality.

Chronic pains have been considered as a severe problem in health attendance, not only in terms of human suffering and morbidity, but also in terms of the economic implications for society (Sjogren et al., 2009). Pains that affect the area of the back, among these, the cervical pain represent one of the three most frequent complaints among the affections of the musculoskeletal system (Trinh et al, 2007). They have been considered a frequent and common health problem in the adult population (Wening et al., 2009; Kaaria et al., 2009).

The effect of an appropriate treatment performed by acupuncture can last up to three years after the last session (He et al.; 2004). Ezzo et al. (2000) verified that 06 acupuncture sessions was associated with positive results (benefits) and other authors corroborate these results (Petrie 1983; Petrie 1986; White 2004). In the present case series this association was not verified. However, it was verified that the patients received an average of 08 acupuncture sessions and that the results of these interventions demonstrated significant improvement in all the studied variables.

Cervical pain has been reported in the literature as being a common symptom manifested in the word; and it mainly affects women (Fejer et al., 2006; Trinh et al., 2007). In the present study it was verified that most of the patients treated with acupuncture were women (84%),

finding agrees with Holdcroft et al. (2005) and according to Vas et al. (2007) represents the profile of users of the public health services offered in the studied area.

Married individuals composed the greater part of the sample in the present research (78%). Similar data are in agreement with these results (Niemtzow et al., 2008). However, it is pointed out that marital status has not been evaluated in most of the published studies on chronic cervical pain treated with acupuncture.

The mean age verified in the present study, when compared with researches that evaluated the management of the chronic cervical pain with the above-mentioned therapy, was higher than the value mentioned in the study published by Salter et al. (2006); Zheng et al. (2008) and lower than that mentioned in the study published by Itoh et al. (2007).

In agreement with Sardá Jr. et al. (2009) scientific studies published had recognized that several psychological factors can influence the degree of pain experience, the reaction of the individuals to the perception of pain and impact of pain on their daily activities. Thus, the experience of chronic pain has been defined as being a product of the complex and dynamic interaction of several biological, social, psychological, environmental and family factors which result in a non linear relationship between the beginning of benign chronic pain and their effects on the human body (Shipton, 2008). In the present study the time of experience of the pain felt occurred predominantly between 12 and 180 months (71% of the cases) which corresponds to an average of 6.5 years, higher than the value found by Itoh et al (2007); Willich et al. (2006); Salter et al. (2006).

According to He et al. (2004), the establishment of an appropriate treatment with acupuncture was capable of reducing effectively the intensity as well as the frequency of muscular pain located in the cervical area. The findings of the present research agree with data of the above-mentioned study and corroborate the results of other randomized controlled clinical studies conducted by Itoh et al. (2007) and Witt et al. (2006).

It is known that opioid analgesics have been prescribed as fundamental therapy of first choice in the treatment of patients with chronic pain (Reid et al., 2002; Rosenblum et al., 2008; Victor et al., 2009). However, patients who were treated in the long term with this type of medication became more depressive, had poor life quality (Zheng et al. 2008) and presented passive attitudes to chronic pain management (dependence and addiction) (Breivik, 2005). Sleepiness, qualm, vomiting, constipation and possibility of the need for gradual increase in the dose of the medicine are mentioned in the literature as adverse effects of opioid analgesic consumption (Gourlay, 1999).

Borenstein (2007) reported that non pharmaceutical therapies such as acupuncture, for instance, present the potential of reducing chronic cervical pain and represent a therapeutic modality exempt from toxicity. The reduction of the consumption of analgesics due to acupuncture treatment for chronic cervical pain was verified in the present study and this findings ratifies similar results in two other publications by Vas et al. (2007) and Hansson et al. (2008) respectively.

Witt et al. (2006) verified a reduction in the intensity and incapacity caused by the chronic cervical pain in patients treated with acupuncture. Similarly, in a study published by Hansson et al. (2008), adult patients affected by chronic musculoskeletal pain reported an increase in the capacity to perform daily activities, as well as in work activities during a period of up to 06 months after the end of acupuncture treatment. Such findings agree with the results of the present research, which verified a reduction in the incapacity caused by chronic cervical pain in the studied population.

The findings of the present study indicate that the patients treated with acupuncture presented a significant statistic reduction in sleep disorders. However, this condition is a theme that has hardly been explored. In agreement with some authors, the latest evidences on effect of acupuncture in this disorder cannot yet be considered clarified (Chen et al., 2007; Yeung et al., 2009).

The characteristics of the researches on back pain, among these cervical pains, have recently been modified and have gone from a biomedical approach to a biopsychosocial approach (Sieben et al., 2009). Thus it is important to remember that the attitude of patients submitted to treatment with alternative and complementary therapies can be a predictive factor for positive results (Sasagawa et al. 2008), nevertheless, studies conducted by Lewith et al. (2002) and White (2003) suggest the opposite. The present scientific investigation did not explore the above-mentioned characteristic, however, the explanation of the interference of the patient's attitude in acupuncture treatment, is relevant and interesting data to be studied in future works. Other approaches such as: cost effectiveness, variations of acupuncture technique, association of cervical pain with other areas of the spine also constitute interferences that need to be studied to perfect the understanding and planning of future strategies in public service of the population by means of acupuncture and auriculotherapy. Reports of studies conducted over a period of more than 10 years revealed that the treatment of chronic pains by acupuncture presented acceptable cost-effectiveness when compared with conventional therapies used for treating this type of pain, in addition to demonstrating that this therapy was clinically effective in these circumstances (White & Cummings, 2009). Other publications have reported that the offer of acupuncture therapy in the primary health care service was capable of providing a reduction in routing patients at other levels of attention including reducing costs related to prescriptions (Johnson, 2008). The use of acupuncture promoted significant economy with regard to expenses originating from conventional pharmacological treatment in individuals affected by migraine who were attended in units of the public service of health in Italy (Liguori et al., 2000). In England in the same treatment mentioned above was verified an additional cost due to the use of acupuncture when it was used as supporting treatment to the conventional therapeutics. Such increment was considered a small expense when compared with the improvement in the patients' quality of life and to the cost-effectiveness of the use of acupuncture in comparison with the number of other interventions performed in the English health system (Wonderling et al., 2004). With further regard to the expenses incurred with public health systems in agreement with the international threshold of the values of cost-effectiveness in health acupuncture can be considered a valid strategy for the alternative treatment of chronic cervical pain in agreement with the cost-effectiveness relationship published in a multicentric study conducted in the public health service in Germany (Willich et al., 2006). The present study was conducted in a public service of primary attention and the improvements perceived in the levels of the patients' health aroused the idea that an increase in the offer of this type of therapy is desirable in view of fact that some authors verified clinically pertinent benefits in patients attended by acupuncture, in these services (Valdés et al., 2001; Vickers et al., 2004; Vas et al., 2007; Witt et al., 2008). Furthermore the use of the mentioned therapy constitutes an alternative important to the treatment of patients who do not respond to the conventional medical treatment applied to musculoskeletal pains (Kam et al, 2002).

It was concluded that acupuncture can be considered a treatment option in the cases of chronic cervical pain in adult patients assisted by the public health service in the primary care brought as it important benefits to the health of these individuals.

5. References

- Breivik, H. (2005). Opioids in chronic non-cancer pain, indications and controversies. *Eur J Pain*, Vol.9, No.2 (April 2005) 127-30, ISSN 1090-3801.
- Bretan, O; Araújo Nogueira E. (2005). Temporomandibular disorders and changes in masticatory muscles. *Arquivos Int. Otorrinolaringol.* , Vol.15, No. 1 (April/June 2005),16-20, ISSN 1809-4872.
- Borenstein, DG. (2007). Chronic neck pain: how to approach treatment. *Curr Pain Headache Rep.*, Vol.11, No. 6 (December 2007), 436-9, ISSN 1531-3433.
- Butler DS. (2003). *Mobilization of the Nervous System*. Manole, ISBN 85-204-1545-8, São Paulo.
- Chen, HY; Shi, Y; Ng, CS; Chan, SM; Yung, KK; Zhang, QL. (2007). Auricular acupuncture treatment for insomnia: a systematic review. *J Altern Complement Med.*, Vol.13, No.6 (July-August 2007), 669-76, ISSN 1075-5535.
- Dalziel K, Round A, Stein K, Garside R, Castelnuovo E, Payne L. (2005). Do the findings of case series studies vary significantly according to methodological characteristics? *Health Technol Assess.*, Vol.9, No.2 (January 2005), 1-146, ISSN 1366-5278.
- Ezzo J, Berman B, Hadhazy VA, Jadad AR, Lao L, Singh BB.(2000). Is acupuncture effective for the treatment of chronic pain? A systematic review. *Pain* , Vol. 86(June 2000)217-225, ISSN 0304-3959.
- Fejer R, Kyvik KO, Hartvigsen J.(2006) The prevalence of neck pain in the world population: a systematic critical review of the literature. *Eur Spine J.*, Vol.15, No. 6 (June 2006) 834-48, ISSN 0940-6719.
- Filshie J, Cummings M. (2001). Efeitos adversos da Acupuntura. In: *Acupuntura. Uma avaliação científica*, Ernst E, White A. (165-195), Manole, ISBN 85-204-1129-0, São Paulo.
- Gardner MJ, Altman DG. (1986).Confidence intervals rather than P values: estimation rather than hypothesis testing. *Br Med J (Clin Res Ed)*, Vol.292, No 6522 (March 1986)746-50, ISSN 0267-0623.
- Gong J, Pinheiro JC, DeMets DL.(2000). Estimating significance level and power comparisons for testing multiple endpoints in clinical trials. *Control Clin Trials*, Vol. 21, No.4 (August 2000)313-29, ISSN 0197-2456.
- Gourlay GK. (1999). Clinical pharmacology of the treatment of chronic noncancer pain. In: *Pain 1999 – an updated review* (433–42), IASP Press, ISBN 978-931092-32-9, Seattle.
- Haines T, Gross AR, Burnie S, Goldsmith CH, Perry L, Graham N. (2009). A Cochrane review of patient education for neck pain. *Spine J.*, Vol.9, No. 10 (October 2009)859-71, ISSN 1529-9430.
- Hansson Y, Carlsson C, Olsson E. Intramuscular and periosteal acupuncture in patients suffering from chronic musculoskeletal pain - a controlled trial. (2008). *Acupunct Med.*, Vol.26, No.4 (December 2008):214-23, ISSN 0964-5284.
- He D, Veiersted KB, Høstmark AT, Medbø. (2004). Effect of acupuncture treatment on chronic neck and shoulder pain in sedentary female workers: a 6-month and 3-year follow-up study. *Pain*, Vol.109, No.3 (June 2004) 299–307, ISSN 0304-3959.

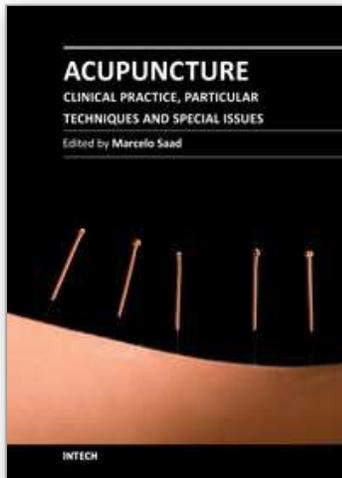
- Hennekens, CH, Buring JE. (1987). Descriptive Studies. In: *Epidemiology in Medicine*, Sharry LM (101-103), Little, Brown & Company, ISBN, 0-316-35636-0, Boston.
- Holdcroft AL, Berkley KJ.(2005). Sex and gender differences in pain. In: *Wall Melzack's Textbook of pain*, McMahon SB, Koltzenburg M. (1181-1197), Elsevier, ISBN 0-443-07287-6, Edinburgh.
- Institute for Clinical Systems Improvement (ICSI) (March 2007). *Assessment and management of chronic pain*. Bloomington (MN), Retrieved from:
http://www.icsi.org/for_patients_families/assessment_and_management_of_chronic_pain_pdf_for_patients_families.html
- Itoh K, Katsumi Y, Hirota S, Kitakoji H. Randomised trial of trigger point acupuncture compared with other acupuncture for treatment of chronic neck pain. (2007). *Complement Ther Med.*, Vol. 15, No. 3(September 2007)172-9, ISSN 0965-2299.
- Johnson G, White A, Livingstone R.(2008). Do general practices which provide an acupuncture service have low referral rates and prescription costs? A pilot survey. *Acupunct Med.*, Vol.26, No.4(December 2008)205-13, ISSN 0964-5284.
- Kääriä S, Solovieva S, Leino-Arjas P.(2009). Associations of low back pain with neck pain: a study of industrial employees with 5-, 10-, and 28-year follow-ups. *Eur J Pain.* , Vol.13, No.4 (April 2009)406-11, ISSN 1090-3801.
- Kam E, Eslick G, Campbell I.(2002). An audit of the effectiveness of acupuncture on musculoskeletal pain in primary health care. *Acupunct Med.*, Vol.20, No.1 (March 2002)35-8, ISSN 0964-5284.
- Krahn M.(2010). Neck pain patients' preference scores for their current health. *Qual Life Res.*, Vol.19, No.5 (June 2010)687-700, ISSN 0962-9343.
- Kraychete DC, Sakata RK, Tanajura D, Guimarães AC, Angelim M. (2003). Perfil clínico de pacientes com dor crônica do ambulatório de dor do hospital universitário Professor Edgar Santos - UFBA. *Rev. Baiana de Saúde Pública.*, Vol.27, No.2(July/December 2003)185-195, ISSN
- Kestenbaum B. (2009). Case Reports and Case Series. In: *Epidemiology and Biostatistics. An Introduction to Clinical Research*, Kestenbaum B. (25), Springer, ISBN 978-0-387-88432-5, New York.
- Kim N, Yang B, Lee T, Kwon S.(2010). An economic analysis of usual care and acupuncture collaborative treatment on chronic low back pain: a Markov model decision analysis. *BMC Complement Altern Med.*,Vol.25, No.10 (November 2010) 10:74, ISSN 1472-6882.
- Lauer MS. Believability of clinical trials: a diagnostic testing perspective. (2006). *J Thorac Cardiovasc Surg.*, Vol.132, No.2 (August 2006)249-51, ISSN 0022-5223.
- Lewith GT, Hyland ME, Shaw S.(2002). Do attitudes toward and beliefs about complementary medicine affect treatment outcomes? *Am J Public Health.*, Vol.92, No.10 (October 2009)1604-6, ISSN 0090-0036.
- Liguori A, Petti F, Bangrazi A, Camaioni D, Guccione G, Pitari GM, Bianchi A, Nicoletti WE.(2000). Comparison of pharmacological treatment versus acupuncture treatment for migraine without aura--analysis of socio-medical parameters. *J Tradit Chin Med.*, Vol.20, No.3 (September 2000) 231-40, ISSN 0255-2922.
- Likert R. (1932). A Technique for the Measurement of Attitudes. *Archives of Psychology.*, No.140, 1-55.

- Likert R. (1967). The method of constructing an attitude scale. In: *Readings in attitude theory and measurement*, Fishbein M. (90-95), Wiley, New York.
- Lu DP, Lu GP, Kleinman L. (2001). Acupuncture and Hypnosis: A Crossover Comparison. *American Journal of Clinical Hypnosis.*, Vol.44, No.2 (October 2001) 44:2, ISSN 0002-9157.
- Mäntyselkä P, Kautiainen H, Vanhala M. (2010). Prevalence of neck pain in subjects with metabolic syndrome--a cross-sectional population-based study. *BMC Musculoskeletal Disord.*, Vol.30, No.11 (July 2010)171, ISSN 1471-2474.
- Matsudaira K, Hara N, Arisaka M, Isomura T.(2010). Comparison of Physician's Advice for Non-specific Acute Low Back Pain in Japanese Workers: Advice to Rest Versus Advice to Stay Active. *Ind Health.*, Vol.49, No.2 (December 2010), ISSN 0019-8366.
- Niemtzow RC, Burns SM, Cooper J, Salvatore L., Walter JAG, Baxter J. (2008). Acupuncture clinical pain trial in a military medical center: outcomes. *Medical Acupuncture*, Vol. 20, No. 4 (December 2008) 255- 261, ISSN 1933-6586.
- Okeson JP. (1998). *Dores bucofaciais de Bell.* Quintessence, ISBN 85-87425-67-6., São Paulo.
- Petrie JP, Langley GB.(1983). Acupuncture in the treatment of chronic cervical pain. A pilot study. *Clin Exp Rheumatol.*, Vol.1, No.4 (October/December 1983)333-6, ISSN 0392-856X.
- Petrie JP, Hazleman BL. (1986). A controlled study of acupuncture in neck pain. *Br J Rheumatol.*, Vol.25, No.3 (August 1986)271-5, ISSN 0263-7103.
- Porta M, Greenland S, Last JM.(2008). Case series. In: *A dictionary epidemiology*. Oxford University Press, ISBN ISBN-10: 0-19-531450-6, New York.
- Reid MC, Engles-Horton LL, Weber MB, Kerns RD, Rogers EL, O'Connor PG. (2002). Use of opioid medications for chronic noncancer pain syndromes in primary care. *J Gen Intern Med.*, Vol.17, No.3 (March 2002) 173-179, ISSN 0884-8734.
- Romeijnders A, Arntz A, Knottnerus JA. (2009). General practitioners' treatment orientations towards low back pain: influence on treatment behaviour and patient outcome. *Eur J Pain.*, Vol.13, No.4 (April 2009) 412-8, ISSN 1090-3801.
- Rosenblum A, Marsch LA, Joseph H, Portenoy RK. (2008). Opioids and the Treatment of Chronic Pain: Controversies, Current Status, and Future Directions. *Exp Clin Psychopharmacol.*, Vol.16, No.5(October 2008) 405-416, ISSN 1064-1297.
- Salter GC, Roman M, Bland MJ, MacPherson H.(2006). Acupuncture for chronic neck pain: a pilot for a randomised controlled trial. *BMC Musculoskeletal Disord.*, Vol.9, No. 7(December 2006) 99, ISSN 1471-2474.
- Sardá J Jr, Nicholas MK, Asghari A, Pimenta CA. (2009). The contribution of self-efficacy and depression to disability and work status in chronic pain patients: a comparison between Australian and Brazilian samples. *Eur J Pain.*, Vol.13, No.2 (February 2009)189-95, ISSN 1090-3801.
- Shipton EA.(2008). The chronic pain experience - a dynamic complex interaction. *N Z Med J.*, Vol.121, No. 1270(March 2008) 9-11, ISSN 0028-8446.
- Sieben JM, Vlaeyen JW, Portegijs PJ, Warmenhoven FC, Sint AG, Dautzenberg N, Sasagawa M, Martzen MR, Kelleher WJ, Wenner CA.(2008). Positive correlation between the use of complementary and alternative medicine and internal health locus of control. *Explore (NY).*, Vol.4, No.1(January 2008)38-41, ISSN 1550-8307.

- Simma I, Gleditsch JM, Simma L, Piehslinger E. (2009). Immediate effects of microsystem acupuncture in patients with oromyofacial pain and craniomandibular disorders (CMD): a double-blind, placebo-controlled trial. *Br Dent J.*, Vol.207, No. 12 (December 2009), ISSN 0007-0610.
- Sjøgren P, Ekholm O, Peuckmann V, Grønbaek M.(2009). Epidemiology of chronic pain in Denmark: an update. *Eur J Pain.*, Vol.13, No.3(March 2009)287-92, ISSN 1090-3801.
- Tedeschi-Marzola F. (2005). The Narrow Relation Between The Cervical Segment And Tmj Disturbs - Physiotherapeutics Aspects. *Revista ATO.*, Vol.5, No. 1 (June 2005)346 - 361, ISSN 1519-681X.
- Trinh K, Graham N, Gross A, Goldsmith C, Wang E, Cameron I, Kay T. (2007). Acupuncture for neck disorders. *Spine (Phila Pa 1976)*, Vol. 32, No. 2(January 2007)236-43, ISSN 0362-2436.
- van der Velde G, Hogg-Johnson S, Bayoumi AM, Côté P, Llewellyn-Thomas H, Hurwitz EL, Krahn M.(2010). Neck pain patients' preference scores for their current health. *Qual Life Res.*,5 (June 2010)687-700, ISSN 0962-9343.
- Valdés FB, Martínez MCR, Arteaga MH, Jacomino JCG. (2001). Resultados obtenidos en pacientes con dolor sometidos a tratamiento. *Rev Cubana Med Gen Integr.*, Vol.17, No.2 (March/April 2001)149-54, ISSN 0864-2125.
- Vas J, Aguilar I, Perea-Milla E, Méndez C. (2007). Effectiveness of acupuncture and related techniques in treating non-oncological pain in primary healthcare--an audit. *Acupunct Med.*, Vol.25, No.1-2 (July 2007)41-6, ISSN 0964-5284.
- Vickers AJ, Rees RW, Zollman CE, McCarney R, Smith CM, Ellis N, Fisher P, Van Haselen R. (2004). Acupuncture for chronic headache in primary care: large, pragmatic, randomised trial. *BMJ.*, Vol.328, No.7442 (March 2004) 744, ISSN 0959-8138.
- Victor WT, Alvarez NA, Gould E. (2009).Opioid Prescribing Practices in Chronic Pain Management: Guidelines Do Not Sufficiently Influence Clinical Practice. *The Journal of Pain*, Vol. 10, No.10 (October 2009)1051-1057, ISSN 1526-5900.
- Wang T, Zhang Q, Xue X, Yeung A. (2008). A systematic review of acupuncture and moxibustion treatment for chronic fatigue syndrome in China. *Am J Chin Med.*, Vol.36, No.1(2008)1-24, ISSN 0192-415X.
- Wenig CM, Schmidt CO, Kohlmann T, Schweikert B. (2009). Costs of back pain in Germany. *Eur J Pain.*,Vol.13, No.3 (March 2009)280-6, ISSN 1090-3801.
- Wewers ME, Lowe NK.(1990). A critical review of visual analogue scales in the measurement of clinical phenomena. *Res Nurs Health.*, Vol.13, No.4 (August 1990)227-36, ISSN 0160- 6891.
- White P, Lewith G, Prescott P, Conway J. (2004).Acupuncture versus placebo for the treatment of chronic mechanical neck pain: a randomized, controlled trial. *Ann Intern Med.*, Vol.141, No.12(December 2004)911-9, ISSN 0003-4819.
- White, PJ.(2003). Attitudes and outcome: is there a link in complementary medicine? *American Journal of Public Health*, Vol.93, No.7 (July 2003) 1038, ISSN 0090-0036.
- White A, Cummings M.(2009). Does acupuncture relieve pain? *BMJ*. Jan 27;338:a2760. doi: 10.1136/bmj.a2760.
- Willich SN, Reinhold T, Selim D, Jena S, Brinkhaus B, Witt CM. (2006).Cost-effectiveness of acupuncture treatment in patients with chronic neck pain. *Pain*, Vol.125, No.1-2 (November 2006)107-13, ISSN 0304-3959.

- Witt CM, Jena S, Brinkhaus B, Liecker B, Wegscheider K, Willich SN. (2006). Acupuncture for patients with chronic neck pain. *Pain*, Vol.125, No.1-2 (November 2006)98-106, ISSN 0304-3959.
- Witt CM, Reinhold T, Jena S, Brinkhaus B, Willich SN. (2008). Cost-effectiveness of acupuncture treatment in patients with headache. *Cephalalgia*, Vol. 28, No.4 (April 2008):334-45, ISSN 0333-1024.
- Wonderling D, Vickers AJ, Grieve R, McCarney R. (2004). Cost effectiveness analysis of a randomised trial of acupuncture for chronic headache in primary care. *BMJ*, Vol. 328, No. 7442(March 2004)747, ISSN 0959-8138.
- World Health Organization-WHO. (1999). *Guidelines on Basic Training and Safety in Acupuncture*. World Health Organization (WHO), ISBN 9789241597685, Geneva.
- World Health Organization-WHO. (2002). *Acupuncture: Review and Analysis of reports on controlled clinical trials*. World Health Organization (WHO), ISBN 9241545437, Geneva.
- Yeung WF, Chung KF, Zhang SP, Yap TG, Law AC.(2009). Electroacupuncture for primary insomnia: a randomized controlled trial. *Sleep*, Vol. 32, No. 8, (August 2009)1039-47, ISSN 0161-8105.
- Zheng Z, Guo RJ, Helme RD, Muir A, Da Costa C, Xue CC. (2008). The effect of electroacupuncture on opioid-like medication consumption by chronic pain patients: a pilot randomized controlled clinical trial. *Eur J Pain.*, Vol.12, No. 5 (July 2008)671-6, ISSN 1090-3801.

IntechOpen



Acupuncture - Clinical Practice, Particular Techniques and Special Issues

Edited by Prof. Marcelo Saad

ISBN 978-953-307-630-0

Hard cover, 138 pages

Publisher InTech

Published online 06, September, 2011

Published in print edition September, 2011

Acupuncture is growing in popularity world-wide. Acupuncture and related techniques are useful tools for treating a spectrum of diseases. However, there are still many areas of controversy connected to it due to the fact that mechanisms of action of acupuncture are not entirely clear. Another debilitating element is the absence of a convincing model of sham acupuncture for a control group in clinical trials. Therefore, there are still inappropriate prejudice and unfamiliarity regarding acupuncture. I hope this book can contribute to guide the advance of this ancient medical art. The reader will here find texts wrote by authors from different parts of the world. The chapters cover strategic areas to collaborate with the consolidation of the knowledge in acupuncture. The main objective is to share elements to make acupuncture more and better offered at health systems worldwide.

How to reference

In order to correctly reference this scholarly work, feel free to copy and paste the following:

Camila da Silva Gonçalo, Jorge Vas and Antonio Carlos Pereira (2011). Use of Acupuncture for the Chronic Neck Pain: Application to Adults as Part of Primary Health Care, *Acupuncture - Clinical Practice, Particular Techniques and Special Issues*, Prof. Marcelo Saad (Ed.), ISBN: 978-953-307-630-0, InTech, Available from: <http://www.intechopen.com/books/acupuncture-clinical-practice-particular-techniques-and-special-issues/use-of-acupuncture-for-the-chronic-neck-pain-application-to-adults-as-part-of-primary-health-care>

INTECH
open science | open minds

InTech Europe

University Campus STeP Ri
Slavka Krautzeka 83/A
51000 Rijeka, Croatia
Phone: +385 (51) 770 447
Fax: +385 (51) 686 166
www.intechopen.com

InTech China

Unit 405, Office Block, Hotel Equatorial Shanghai
No.65, Yan An Road (West), Shanghai, 200040, China
中国上海市延安西路65号上海国际贵都大饭店办公楼405单元
Phone: +86-21-62489820
Fax: +86-21-62489821

© 2011 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike-3.0 License](#), which permits use, distribution and reproduction for non-commercial purposes, provided the original is properly cited and derivative works building on this content are distributed under the same license.

IntechOpen

IntechOpen