

OCCURRENCE OF SPINAL COLUMN PAIN AND ITS RELATION TO THE QUALITY OF LIFE OF MANICURES AND PEDICURES

Ocorrência de dor na coluna vertebral e sua relação com a qualidade de vida de manicures e pedicures

Ocurrencia de dolor de espalda y su relación con la calidad de vida de manicuras y pedicura

Original Article

ABSTRACT

Objective: To analyze the occurrence of spine column pain in manicures/pedicures and verify its relationship with quality of life. **Methods:** A quantitative and descriptive cross-sectional research conducted from February to June 2010 with 30 professionals aged between 18 and 45 years and with at least one year of work experience. After selection, two questionnaires were applied: the SF-36 and another developed by the researchers with questions related to occupation (working hours and length of service), occurrence of pain and its characteristics (location, type, frequency and intensity). **Results:** Of the 30 participants, 76.7% (n=23) reported pain, with 63.3% (n=19) occurrence in the lumbar spine and 46.7% (n=14) occurrence of chronic type (lasting more than 6 months). A total of 36.7% (n=11) of interviewees reported daily pain with an average intensity of 6.1 ± 2.24 . Age and length of service rates were higher in the group of people who felt pain (34.2 ± 6.80 and 12.3 ± 6.39 years respectively). Regarding the quality of life in the group of people who did not feel pain, the domains "functional capacity", "pain" and "general health status" had higher scores when compared to the group of people who felt pain ($p < 0.05$). **Conclusion:** It was detected a high occurrence of spinal column pain among manicures / pedicures, especially in the lumbar spine, leading to functional limitations, and a consequent change in quality of life.

Descriptors: Pain; Quality of life; Spine.

RESUMO

Objetivo: Analisar em manicures e pedicures a ocorrência de dor na coluna vertebral e verificar sua relação com a qualidade de vida. **Métodos:** Realizou-se, no período de fevereiro a junho de 2010, uma pesquisa quantitativa, do tipo transversal e descritiva, envolvendo 30 profissionais entre 18 e 45 anos com, no mínimo, um ano de profissão. Após seleção, aplicaram-se dois questionários: o SF-36 e outro, elaborado pelas pesquisadoras, com questões referentes à atividade ocupacional (jornada e tempo de serviço), presença de dor e suas características (local, tipo, frequência e intensidade). **Resultados:** Das 30 participantes, 76,7% (n=23) relataram dor; sendo 63,3% (n=19) na coluna lombar e 46,7% (n=14) do tipo crônica (com duração há mais de 6 meses). Relatou-se frequência de dor diária em 36,7% (n=11), com média de intensidade de $6,1 \pm 2,24$. A idade e o tempo de serviço apresentaram-se maior no grupo com dor; com $34,2 \pm 6,80$ e $12,3 \pm 6,39$ anos, respectivamente. Na qualidade de vida do grupo sem dor, os domínios "capacidade funcional", "dor" e "estado geral de saúde" obtiveram maiores pontuações em relação ao grupo com dor ($p < 0,05$). **Conclusão:** Detectou-se elevada presença de dor na coluna vertebral das manicures e pedicures avaliadas, principalmente na região lombar; levando a limitações funcionais e, conseqüentemente, ao comprometimento na qualidade de vida.

Descritores: Dor; Qualidade de vida; Coluna Vertebral.

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Received: 10/10/2012
Revised: 04/15/2013
Accepted: 05/02/2013

RESUMEN

Objetivo: Analizar la ocurrencia de dolor de espalda en manicuras y pedicuras y verificar su relación con la calidad de vida. **Métodos:** Una investigación cualitativa se realizó en el período entre febrero y junio de 2010, del tipo trasversal y descriptiva involucrando 30 profesionales entre los 18 y 45 años con un mínimo de un año de profesión. Después de la selección fueron aplicados dos cuestionarios: el SF-36 y otro elaborado por las investigadoras con preguntas sobre la actividad ocupacional (jornada y tiempo de servicio), presencia de dolor y sus características (local, tipo, frecuencia e intensidad). **Resultados:** De las 30 participantes, el 76,7% (n=23) relataron dolor, siendo el 63,3% (n=19) en la lumbar y el 46,7% (n=14) del tipo crónica (con duración de más de seis meses). Se relató la frecuencia de dolor diaria en el 36,7% (n=11) con media de intensidad de $6,1 \pm 2,24$. La edad y el tiempo de servicio se presentaron mayores en el grupo con dolor con $34,2 \pm 6,80$ e $12,3 \pm 6,39$ años, respectivamente. Respecto la calidad de vida del grupo sin dolor, los dominios "capacidad funcional", "dolor" y "estado general de salud" obtuvieron mayores puntuaciones en relación al grupo con dolor ($p < 0,05$). **Conclusión:** Se detectó elevada presencia de dolor de espalda de las manicuras y pedicuras evaluadas, principalmente en la lumbar, llevando a limitaciones funcionales y, en consecuencia, al comprometimiento de la calidad de vida.

Descriptor: Dolor; Calidad de Vida; Columna Vertebral

INTRODUCTION

Over the last decades, work has demanded a lot from people, both physically and psychologically, exposing workers to high levels of tension and inadequate postures for long periods of time, resulting in complications that affect mainly the spinal column. These working conditions are the cause to the occurrence or aggravation of injuries in the musculoskeletal system, which results in pain⁽¹⁾.

Nowadays, musculoskeletal pain is one of the main problems faced by western countries⁽²⁾ concerning public health. According to the paradigm adopted, pain can be classified as, acute, chronic, recurrent, nociceptive, neuropathic, etc. The intensity reported by the individual is subjective, as it varies according to their previous painful experiences and other factors such as, ethnicity, gender, age and others, and it can be classified as mild, moderate, intense and unbearable⁽³⁾.

Most of individuals spend a great deal of their working time seated. Although this position seems inoffensive, it is the one that hurts the spinal column the most⁽⁴⁾. This position is the most harmful because the pressure on the L3 intervertebral disc is considerably lower standing than sitting. In association with anterior trunk inclination the pressure on the disc increases due to the straightening of the

lumbar curvature and the contraction of the spinal column posterior muscles, acting against the trunk's gravity force⁽⁵⁾.

Muscle weakness and lack of vitality cause the individual to choose a rest position in order to conserve energy and this can result in complications such as musculoskeletal pain because the posture adopted is not the most adequate, but a more "comfortable" one⁽⁶⁾.

Even though manicures can make their working hours more flexible, they are not free from work-related musculoskeletal disorders, because in general, their work is long and often done in uncomfortable positions⁽⁷⁾.

This posture is characterized by a seated position, with flexion of the trunk, hips and knees, upper limbs in slight abduction, internal rotation of the shoulder, elbow and cervical flexion, which may represent the cause of most injuries suffered by professionals that sustain this posture during work. Since there is no attention given to this, further studies are needed to define the impact of these disorders^(3,7).

No matter what the cause is, musculoskeletal disorders have been afflicting a great deal of the population and affecting people's quality of life, which is related to well-being or satisfaction, being determined mainly by the state of health that the individuals find themselves in and by how they see the impact of such disorders upon their lives⁽⁸⁾.

Knowing that the work activity is a factor that triggers various complications, this study aimed to analyze in manicures and pedicures the occurrence of pain in the spine and to assess its relationship with quality of life.

METHODS

This is a quantitative, cross-sectional and descriptive study conducted from February to June 2010 with women aged 18-45 years working as manicures or pedicures.

In all, 30 manicures were selected, through non-probability sampling and according to their convenience, from the main five beauty salons located in the Coco neighborhood, city of Fortaleza, for having a large concentration of beauty salons.

To be included in this study, the professionals had to be working as manicures or pedicures for at least one year, they also had to have a minimum workload of 8 hours/day, a body mass index within the normal range ($18.5 - 24.9 \text{ kg/m}^2$) and to consent to participate in the study by signing an Informed Consent Statement.

Subsequently, two questionnaires were administered: one developed by the researchers, containing data on labor activity (working hours and time in the profession) and pain characteristics (location, type, frequency, location and intensity), and the quality of life questionnaire SF -36 (Medical Outcomes Study 36 - Item Short-Form Health Survey).

For the assessment of pain intensity, it was used the visual analog scale (VAS), which consists of a 10 cm horizontal line, in which the far left is labeled “no pain” (0) and the far right, “severe pain” (10). The VAS is a simple and reliable tool to evaluate pain, both in research and clinical situations⁽⁹⁾. Pain was classified acute or chronic, the latter in case it had been present for more than 6 months⁽¹⁰⁾.

The SF-36 is a generic instrument for assessing quality of life, validated in Brazil, easy to administer and understand in multidimensional ways. It consists of 36 items encompassing 8 dimensions: physical functioning, physical aspects, pain, general state of health, vitality, social and emotional aspects and mental health. For the calculation of the questionnaire, each question is given a score, which is later transformed into a scale ranging from 0 to 100, with 0 (zero) the worst state of health and 100 (one hundred), the best⁽¹¹⁾.

To calculate the overall average for each domain, it was used the formula in which the value selected by the participant was subtracted from the lower limit of the dimension analyzed, divided by the ratio of the variation, and the result was multiplied by 100⁽¹²⁾.

The questionnaires were administered in the workplace, by previously trained researchers, providing greater homogenization and avoiding any other interpretation than that desired by the instruments.

The results were presented in percentages for the variables “characteristics of pain” and averages \pm standard deviations for the variables “pain intensity”, “quality of life” and data on labor activity. The Statistical Package for Social Sciences (SPSSTM) version 16.0 was used.

We used the *t* test for the analysis of averages, after the administration of the KS normality (Kolmogorov-Smirnov) test, and the Fisher’s test for categorical variables, with statistical significance when $p \leq 0.05$.

The research followed the ethical aspects defined by Resolution 196/96 of the National Health Council⁽¹³⁾, which regulates researches with human beings. It was approved by the Research Ethics Committee of the University of Fortaleza (*Universidade de Fortaleza – UNIFOR*) under number 367/08.

RESULTS

The research assessed 30 manicures / pedicures between 18 and 45 years of age, with an average age of 32.76 ± 7.24 years. It assessed the working hours, which ranged between 8 and 12 hours, with an average of 9.83 ± 1.23 hours / day. The years of service had an average of 10.8 ± 6.79 years, ranging from 8 to 12 years.

After analyzing the presence of pain, the sample was divided into two groups: one with people that reported pain ($n=23$) and the other one with those that showed no symptoms ($n=7$). From this division, other data were analyzed according to these groups.

The age and years of service had significant difference ($p=0.03$ and $p=0.02$, respectively) and were higher in the group that reported pain. Longer working hours showed no significant difference. However, one can observe that the group that did not report pain works more hours per day (10.28h) than the other group (9.69h) (Table I).

Out of the 23 participants, 63.3% ($n=19$) reported the lumbar spine as the most affected place, 36.7% ($n=11$) the cervical, and 20% ($n=6$), the dorsal. Other locations were mentioned too, but in a smaller scale, such as the hands, shoulders and legs, with 13.3% ($n=4$), 10% ($n=3$) and 3.3% ($n=1$), respectively.

The majority of this population ($n=14$) reported pain in more than one location. By investigating the characteristics, 46.7% ($n=14$) had chronic pain and 30.6% ($n=9$), acute.

Table I - Analysis of age and labor activity for the presence of pain in manicures / pedicures, Fortaleza-CE.

Variables	Presence of Pain	n	Average \pm SD	p
Idade	Yes	23	34.2 ± 6.80	0.03
	No	7	27.8 ± 6.86	
Jornada de trabalho	Yes	23	9.6 ± 1.01	0.27
	No	7	10.2 ± 1.79	
Tempo de serviço	Yes	23	12.3 ± 6.39	0.02
	No	7	5.7 ± 5.82	

DP: desvio padrão.

Table II - Analysis of the characteristics of pain in manicures/pedicures, Fortaleza-CE.

Pain Characteristics	n	Percentage
Frequency: Daily	11	36.7%
Weekly	4	13.3%
Weekends	4	13.3%
Heavy Workload	1	3.3%
Rarely	1	3.3%
Painless	9	30.0%
Type of Pain: Acute	9	30.0%
Chronic	14	46.7%
Painless	7	23.3%
Number of locations: 01	9	30.0%
02	7	23.3%
03	7	23.3%
Painless	7	23.3%

Tabela III – Analysis of pain intensity in relation to the type of pain presented by manicures / pedicures, Fortaleza-CE.

Variables	Type of Pain	n	Average ± SD	p
Pain Intensity	Acute	9	4.7 ± 0.59	0.01
	Chronic	14	7.0 ± 0.55	

SD: standard deviation.

Tabela IV - Analysis of quality of life in relation to the presence / absence of pain in manicures / pedicures, Fortaleza-CE.

Domains	Presence of Pain	n	Average ± SD	p
Functional Capacity	Yes	23	78.6 ± 4.32	0.03
	No	7	96.4 ± 2.36	
Physical Aspect Limitation	Yes	23	61.0 ± 6.33	0.13
	No	7	82.1 ± 14.13	
Pain	Yes	23	55.9 ± 4.55	0.00
	No	7	94.4 ± 5.57	
General State of Health	Yes	23	54.8 ± 1.74	0.04
	No	7	62.2 ± 2.94	
Vitality	Yes	23	71.9 ± 2.87	0.41
	No	7	77.1 ± 6.53	
Social Aspect	Yes	23	82.6 ± 4.82	0.81
	No	7	80.3 ± 7.64	
Emotional Aspect	Yes	23	150.7 ± 8.34	0.67
	No	7	142.8 ± 18.84	
Mental Health	Yes	23	76.5 ± 2.46	0.47
	No	7	80.0 ± 3.02	

SD: standard deviation.

Daily pain appeared in 36.7% (n=11) of the study population (Table II).

The pain intensity verified by VAS ranged from 3 to 10, with an average of 6.17. When related to the type of pain (chronic/acute), it was found that chronic pain showed greater intensity ($p=0.01$) (Table III).

The investigation of the quality of life in the two groups revealed that the domains “functional capacity”, “physical aspects”, “pain”, “general state of health”, “vitality” and “mental health” presented higher figures in the group without pain, except for the areas of “social aspects” and “emotional aspects”. However, only the functional capacity, pain and general state of health were significantly different compared to the group without pain ($p=0.03$, $p=0.00$ and $p=0.04$, respectively) (Table IV).

DISCUSSION

After the application of questionnaires, it was observed that 76.7% of the participants complained of pain in the spinal region. These findings corroborate the literature, and it is believed that the frequency of painful syndromes resulting from the deterioration of vertebral structures is linked to inadequate sitting postures⁽¹⁴⁾.

Thus, the increased occurrence of pain and musculoskeletal disorders is directly related to the labor market, which makes the individual spend long periods of time in one position, performing repetitive movements which expose them to possible injuries, taking them away from work and decreasing productivity^(1,2).

Individuals working for over 6 months in the same occupation are about three times more likely to develop painful symptoms in more than one region of the body⁽¹⁵⁾. In fact, data from the present study confirmed that the length of employment, along with age, is related to the emergence of pain in the population of manicures and pedicures.

There is a relationship between work overload (repetition, time and posture) and the presence of lesions. There is evidence that a combination of these risk factors increases the likelihood of the emergence or the worsening of occupational injuries⁽¹⁶⁾.

Considering the lifestyle of manicures/pedicures and their working conditions, it can be observed that numerous variables, such as inadequate postures, length of service and high workload may be collaborating to the development of musculoskeletal pain in the spinal column^(7,17).

The occurrence of lumbar and cervical pain is really high compared to other regions, in agreement with a previous study carried out with 17 manicures, which showed that acute and chronic musculoskeletal disorders are more prevalent in the lumbar region, followed by cervical⁽¹⁸⁾.

According to statistical data, lumbar pains reach epidemic levels in the general population, being present in around 70% of the population from industrialized countries⁽¹⁹⁾. The data obtained in this study showed that over 50% of the study population reported the lumbar spine as the most affected by daily pain and 46.7% have been living with it for more than 6 months. This finding is worrisome, given that lumbar pain can be caused by an imbalance between the effort required by the job and the individual's functional capacity⁽²⁰⁾.

Cervicalgia was the condition which occurred less frequently in the current research, being less likely to cause the individual to become unable to work. It differs from the shoulder impingement syndrome, which is described by the presence of a local pain, with decreased levels of cervical and shoulder mobility^(21,22).

The presence of pain undermines leisure, sleep, appetite, sexual and professional activity, resulting in stress and can cause depression and decrease quality of life⁽²²⁾. Thus, it can be confirmed that the respondents with pain also showed a lower level of quality of life as to the domains “physical functioning”, “pain” and “general state of health” than the respondents without pain.

In general, women know what they need and what would be best for their life and health. However, it was observed that, despite the quest for improving quality of life, persistent and painful physical problems such as lumbar pain, may become a factor that hinders a better and more productive⁽²³⁾ life.

It is understood that backaches are not considered a serious disease and, therefore, women live with it, putting them in a situation of chronicity and thus limiting their working conditions⁽²⁴⁾.

It is no use to settle the complaint of pain in the back through medication and therapies to make women return to their activities. It is necessary to review the educational, socio-cultural, economic and environmental contexts, in addition to knowing the factors that affect them, positively or negatively, and if possible, try to change situations that prevent the improvement of quality of life.

Thus, the data obtained suggest the development of a program of prevention and control of occupational pain in the spinal column, specifically developed for the studied population.

CONCLUSION

The results obtained in this study showed a high frequency of musculoskeletal pain in the spine of the manicures and pedicures assessed. Pain possibly related to

the permanence in one position during the workday. This occurrence interferes with the quality of life of workers, since significant changes were observed in the professionals that reported pain.

REFERENCES

1. Oliveira AGS, Bakke HA, Alencar JF. Riscos biomecânicos posturais em trabalhadores de uma serraria. *Fisioter Pesqui.* 2009;16(1):28-33.
2. Maciel ACC, Fernandes MB, Medeiros LS. Prevalência e fatores associados à sintomatologia dolorosa entre profissionais da indústria têxtil. *Rev Bras Epidemiol.* 2006; 9(1):94-102.
3. Rocha Junior R, Pereira JS. Contribuição da osteopatia sobre a flexibilidade da coluna lombar e intensidade da dor em pacientes adultos jovens com lombalgia aguda. *Ter Man.* 2010;8(35):50-54.
4. Silva CR, Silva MAC, Silva SR, Souza JCC, Santos SD. Ergonomia: um estudo sobre sua influência na produtividade. *Rev Gestão USP.* 2009;16(4):61-75.
5. Braccialli PML, Vilarta R. Aspectos a serem considerados na elaboração de programas de prevenção e orientação de problemas posturais. *Rev Paul Educ Fís.* 2000;4(2):159-71.
6. Vitta A, Canonici AA, Conti MHS, Simeão SFAP. Prevalência e fatores associados à dor musculoesquelética em profissionais de atividades sedentárias. *Fisioter Mov.* 2012;25(2):273-80.
7. Machado DC, Santos MMA, Bachiega JC, Corrêa JCF, Mesquita-Ferrari RA, Fernandes KPS, Bussadori SK. Avaliação do desconforto postural em manicures. *Conscientia Saúde.* 2010;9(3):375-380.
8. Matos SPA, Machado CCA. Influência das variáveis biopsicossociais na qualidade de vida em asmáticos. *Psicol Teor Pesqui.* 2007;23(2):139-148.
9. Soares JC, Weber P, Trevisan ME, Trevisan CM, Rossi AG. Correlation between head posture, pain and disability index neck in women with complaints of neck pain. *Fisioter Pesqui.* 2012;19(1):68-72.
10. Kreling MCGD, Cruz D de ALM da, Pimenta CA de M. Prevalência de dor crônica em adultos. *Rev Bras Enferm.* 2006;59(4):509-13.
11. Vitorino MFD, Martins MLF, Souza CA, Galdino D, Prado FG. Utilização do SF-36 em ensaios clínicos envolvendo pacientes fibromiálgicos: determinação de critérios mínimos de melhora clínica. *Rev Neurociênc.* 2004;12(3):147-150.
12. Monteiro CM, Benatti MCC, Rodrigues RCM. Acidente do trabalho e qualidade de vida relacionada à saúde: um estudo em três hospitais. *Rev. Latino-Am Enferm.* 2009;17(1):100-7.
13. Brasil. Resolução CNS nº 196, de 10 de outubro de 1996. Aprova diretrizes e normas regulamentadoras de pesquisa envolvendo seres humanos. *Diário Oficial da União.* Brasília, n. 201, p. 21082, 16 out. 1996.
14. Benito VAG, Corrêa AK, Santos LA. Análise ergonômica das posturas que envolvem a coluna vertebral no trabalho da equipe de enfermagem. *Texto Contexto Enferm.* 2004;13(1):115-23.
15. Maciel ACC, Fernandes MB, Medeiros LS. Prevalência e fatores associados à sintomatologia dolorosa entre profissionais da indústria têxtil. *Rev Bras Epidemiol.* 2006;9(1):94-102.
16. Baldan C. Avaliação dos aspectos pessoais ocupacionais e psicossociais, e sua relação no surgimento e ou agravamento de lesões músculos esqueléticas em um setor de trabalho. *Fisioter Mov.* 2002;14(2):37-42.
17. Souza AVR, Cardoso JP, Rocha SV, Amorim CR, Carneiro LRV, Vilela ABA. Nível de atividade física e lombalgia entre funcionários de uma instituição de ensino superior no nordeste do Brasil. *Rev Bras Promoç Saúde.* 2011;24(3):199-206.
18. Brito PM, Costa CLK, Medeiros Neto CF, Guedes DT, Másculo FS, Córdia GCM, *et al.* Análise da relação entre a postura de trabalho e a incidência de dores na coluna vertebral. In: *Anais do 23th Encontro Nacional de Engenharia de Produção*; 21-24 Out. 2003; Ouro Preto: ABEPRO; 2003. p. 1-5.
19. Silva MC, Fassa ACG, Valle NCJ. Dor lombar crônica em uma população adulta do Sul do Brasil: prevalência e fatores associados. *CAD Saúde Pública.* 2004;20(2):377-85.
20. Mascarenhas CHM, Santos LS. Avaliação da dor e da capacidade funcional em indivíduos com lombalgia crônica. *J Health Sci Inst.* 2011;29(3):205-8.
21. Sepúlveda AT. Cervicalgia y cervicobraquialgia em el adulto mayor. *Rev Chil Reumatol.* 2004;20(2):81-3.
22. Servelhere KR, Fernandes YB, Ramina R, Borges G. Aplicação da escala SF-36 em pacientes operados de tumores da base do crânio. *Arq Bras Neurocir.* 2011;30(2):69-75.
23. Capela C, Marques AP, Assumpção A, Sauer JF, Cavalcante AB, Chalot SD. Associação da qualidade de vida com dor, ansiedade e depressão. *Fisioter Pesqui.* 2009;16(3):263-8.

24. Arcanjo NG, Silva MR, Nations KM. Saber popular sobre dores nas costas em mulheres nordestinas. *Ciênc Saúde Coletiva*. 2007;12(2):389-97.

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