

Central pain due to stroke: cognitive representation and coping according to gender

Dor central em acidente vascular encefálico: representação cognitiva e enfrentamento conforme o gênero

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ABSTRACT

Objective: To identify and compare perceptions of pain and how it is faced between men and women with central post-stroke pain. **Methods:** The participants were 25 men and 25 women of minimum age 30 years-old and minimum schooling level of four years, presenting central post-stroke pain for at least three months. The instruments used were: Mini-Mental State Examination; structured interview for the Brief Psychiatric Scale; Survey of Sociodemographic and Clinical Data; Visual Analogue Scale (VAS); Ways of Coping with Problems Scale (WCPS) in Scale; Revised Illness Perception Questionnaire (IPQ-R); and Beck Depression Inventory (BDI). **Results:** A significantly greater number of women used the coping strategy "Turn to spiritual and religious activities" in WCPS. They associated their emotional state with the cause of pain in IPQ-R. "Distraction of attention" was the strategy most used by the subjects. **Conclusion:** Women used spiritual and religious activities more as a coping strategy and perceived their emotional state as the cause of pain.

Key words: central pain, gender identity, cognition, stroke.

RESUMO

Objetivo: Identificar e comparar a percepção e o enfrentamento da dor entre homens e mulheres com dor central por acidente vascular cerebral (AVC). **Métodos:** Participaram do estudo 25 homens e 25 mulheres com dor central por AVC há pelo menos três meses, maiores de 30 anos, escolaridade mínima de 4ª série. Os instrumentos utilizados foram: Mini-exame do Estado Mental; Entrevista Estruturada para Escala Psiquiátrica Breve; Inquérito de Dados Sociodemográficos e Clínicos; Escala Visual Analógica (EVA); Escala dos Modos de Enfrentamento de Problemas (EMEP); Questionário de Percepção da Doença Revisado (QPQ-R) e Inventário de Depressão de Beck (IDB). **Resultados:** Um número significativamente maior de mulheres revelou usar a estratégia de enfrentamento "Realizar atividades espirituais e religiosas" na EMEP e associou o estado emocional à causa de suas dores no QPD-R. "Distração da atenção" foi a estratégia mais utilizada pelos sujeitos. **Conclusão:** As mulheres utilizaram mais atividades espirituais e religiosas como estratégia de enfrentamento e perceberam mais o estado emocional como causa da dor.

Palavras-Chave: dor central, identidade de gênero, cognição, acidente vascular cerebral.

Central pain is a regional pain caused by a primary lesion or dysfunction in the central nervous system, usually associated with abnormal sensitivity to temperature and noxious stimulation¹. Changes in temperature, emotional stress, and movement usually increase the pain². Cerebrovascular lesions (strokes or hemorrhages), multiple sclerosis, and spinal cord injuries are the most common causes¹.

This pain is intense, constant and it usually burns. It is a physical and psychological aggravating for most patients. In

consequence, their social lives and work are often very much impaired². Central pain causes many changes in people's lives, and so they have to try different cognitive and behavioral strategies to deal with the pain and its effects³.

The coping process has the aim of dealing with two main functions: to manage or change the problems in the environment to modify the stressful situation (problem-centered coping); and to control the disturbance or discomfort associated with the stressful situation without changing the situation itself (emotion-centered coping)⁴.

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Men and women deal differently with stressful life events⁵. Women with pain use a lot of coping strategies⁶, although men gain greater benefit from the strategy of “focus attention on the pain”⁷.

The literature shows that men and women have different perceptions on the cause of chronic pain. Men perceive pain as something external to them and attribute it to external events, while women attribute the cause of pain to the internal ones⁸.

The aims of this study were to identify and compare the coping strategies used by men and women with central post-stroke pain and also the perceptions that men and women have of central pain.

METHODS

This study was conducted at the Multidisciplinary Pain Center of the Department of Neurology, Hospital das Clínicas, University of São Paulo Medical School, in Brazil.

Fifty subjects (25 men and 25 women), who had been diagnosed with central pain due to ischemic or hemorrhagic stroke for at least three months, participated in the study. The inclusion criteria were that patients should have a minimum age of 30 years-old, a minimum of four years of basic schooling and presence of central post-stroke pain for at least three months. The exclusion criteria were: presence of cognitive or language impairment and of psychotic symptoms.

This study was approved by the Central Research Division of the Institute of Psychology and the Ethics Committee for Research Project Analysis of Hospital das Clínicas, University of São Paulo Medical School.

The instruments used in this study were: Mini-Mental State Examination⁹ validated for Brazil¹⁰, in order to assess the presence of cognitive impairment; Structured Clinical Interview for the Brief Psychiatric Scale¹¹ adapted for the Brazilian population¹², in order to identify psychotic symptoms; Survey of Demographics and Clinical Data; Visual Analogue Scale (VAS)¹³, in order to measure pain intensity; Beck Depression Inventory (BDI)¹⁴ validated for the Brazilian population¹⁵, in order to identify depression symptoms; Ways of Coping with Problems Scale (WCPS)¹⁶ adapted for the Brazilian population¹⁷, composed of 45 items that assess four coping strategies (“Problem-focused coping”, “Emotion-focused coping”, “Search for religious practices and wishful thinking” and “Search for social support”), and an open question about how the subject does to deal with the pain; and Revised Illness Perception Questionnaire (IPQ-R)¹⁸ translated into Portuguese¹⁹, in order to assess perceptions of disease according to five basic components: identity, causes, consequences, evolution, and cure/control. The IPQ-R scale was divided into three fields. The first included the identity component; the second included duration (acute/chronic),

consequences, personal control, treatment control, cyclic duration, illness coherence and emotional representation, and the third one showed aspects of the causes.

After reviewing the subjects’ records in order to ascertain whether any inclusion or exclusion factors were present, and to collect demographic and clinical information that shaped the diagnosis of stroke, individuals who initially fulfilled the criteria were assessed cognitively using the Mini-Mental State Examination and answered the questions of the Structured Clinical Interview for the Brief Psychiatric Rating Scale. Subjects who scored less than 24 points in the Mini-Mental State Examination and showed symptoms of psychotic disorder were excluded from the survey. Subjects who scored more than 24 points in the Mini-Mental State Examination and showed no symptoms of psychotic disorder were eligible to provide answers to other instruments.

After the investigators had explained what the research consisted of and after the patients had signed the informed consent statement, the other research instruments were applied. The patients gave responses in the presence of the researcher. It took approximately 90 minutes to implement these tests.

Firstly, they answered a questionnaire seeking demographic and clinical data, and they quantified the intensity of their pain using the VAS. Following this, they gave responses for the WCPS, and then the IPQ-R and BDI.

Statistical analysis

All the information collected was organized into an electronic database and was analyzed using the tools available in the Statistical Package for the Social Sciences, version 12.0. The Student’s *t*-test was used on quantitative variables and the χ^2 test was used to compare qualitative variables. This study used a significance level of 0.05.

RESULTS

The men’s mean age was 59.6 years-old and the women’s was 53.5 years-old. The mean length of time with pain was 94.7 months among the men and 82.7 months among women. Moreover, 92% of subjects had had ischemic stroke. Table 1 shows the demographic and clinical data.

Table 1 also shows that the percentage of married men was higher (84%) than the one of married women (52%). The statistical analysis showed this difference in men and women’s marital status was significant ($p=0.015$).

The mean VAS score among women was higher (7.1) than that of men (6.0), but without any statistically significant differences ($p=0.133$).

The WCPS assesses the frequencies of the four coping strategies. There was a statistically significant difference between men and women in relation to “Search for religious

practices and wishful thinking”, which the women reported using more frequently (Table 2).

In the open question that is part of the WCPS, the coping strategies mentioned by the subjects were divided into two groups: “Problem-centered coping” (“Seek treatment for pain”, “Pretend not to feel the pain”, “Ignore the pain” or “Accept the disability due to the pain”) and “Emotion-centered coping” (“Distraction of attention”, “Self-assertion of coping”, “Control of emotions”, “Turn to spiritual and religious activities” and “Seek social support”). Table 3 shows the numbers of responses from men and women for each coping strategy.

As shown in Table 3, there was a statistically significant difference between men and women in relation to the coping strategy “Turn to spiritual and religious activities” ($p=0.025$). The women in this study used this strategy more than the men.

The strategy most mentioned by the subjects (16 men and 16 women) was “Distraction of attention”.

In the IPQ-R, there was a statistically significant difference (0.023) between men and women in relation to emotional factors as the cause of pain. A greater number of women (18) than men (10) linked their emotional state to the pain.

Table 1. Distribution of men and women according to demographic and clinical data in numbers and percentages.

Variables	Men (n)	Men (%)	Women (n)	Women (%)	p
Marital status					0.015
Married	21	84	13	52	
Others	4	16	12	48	
Education level					0.088
Primary school	14	56	6	24	
High school	5	20	12	48	
University	6	24	7	28	
Religion					0.823
None	2	8	2	8	
Catholic	14	56	13	52	
Others	9	36	10	40	
Professional activities					0.320
On sick leave due to pain	4	16	5	20	
Retired	15	60	11	44	
Unemployed	1	4	5	20	
Currently working	5	20	4	16	
Occupation before the pain					0.506
Was working	21	84	22	88	
Retired	2	8	0	0	
On sick leave due to pain	1	4	0	0	
Unemployed	1	4	3	12	

The results from the BDI showed that the women’s score (18.5) was higher than the men’s (16.8), but there was no statistically significant difference between the two groups ($p=0.498$).

DISCUSSION

In the demographic and clinical data, there was a statistically significant difference between men and women in relation to marital status, such that more men than women were married. This difference might be explained by the fact that Brazilian men have more chronic disease and die earlier than Brazilian women²⁰.

From analyzing occupational data before and after the pain, it was found that the percentage of subjects who had an occupation before they started to have central pain was 86% and the percentage of subjects who had an occupation at the time of the survey was 18%. Regarding the emotional domain of the BDI, the mean score was 16.8 among the men and 18.5 among the women, thus corresponding to mild symptoms of depression. These results show that central post-stroke pain is a great physical and psychological burden on most patients.

Table 2. Distribution of the two genders regarding means and significance levels (p) of frequencies of using coping strategies, as measured by the Ways of Coping with Problems Scale.

Coping strategies	Men (mean)	Women (mean)	t test p
Problem-centered coping	3.7	3.7	0.661
Emotion-centered coping	2.3	2.2	0.545
Search for religious practices and fantasized thoughts	3.4	4	0.034
Search for social support	2.9	3	0.897

Table 3. Distribution of men and women regarding means and significance levels (p) of frequencies of using coping strategies, as measured by the open question in the Ways of Coping with Problems Scale.

Coping strategies	Male (n)	Female (n)	Fisher test p
Problem-centered			
Seek treatment for pain	10	10	0.613
Pretend not to feel pain	0	3	0.117
Ignore the pain	3	5	0.351
Accept the disability due to pain	1	1	0.500
Emotional-centered			
Distraction of attention	16	16	0.616
Self-assertion of coping	3	1	0.305
Control of emotions	2	2	0.695
Turn to spiritual and religious activities	0	5	0.025
Seek social support	5	6	0.500

Their social life and work are often very much impaired, thus causing great suffering and impaired quality of life².

Strokes cause functional and physical damage that may interfere in coping and pain perception. In this study, the physical and functional repercussions were not measured or controlled for which may have influenced the results.

The intensity of pain among the women was an average of 7.1 on the VAS, while for men it was 6.0. However, there was no statistically significant difference in these findings. This fact contradicts some studies, which showed that women complained more about pain, and they showed greater sensitivity and lower pain tolerance than men²¹⁻²³.

The WCPS showed a statistically significant difference between men and women in relation to the frequency of use of the strategy "Search for religious practices and wishful thinking", which was used more often by women. In the open question, categories of coping were created, and there was a statistically significant difference between men and women who "Turn to spiritual and religious activities". These results proved that women use spiritual and religious activities more

often than men do. Brazilian women are more religious than men; 5.7% of Brazilian women do not have a religious belief *versus* 9% of Brazilian men²⁴.

In the open question of the WCPS, the coping strategy most mentioned by the subjects was "Distraction of attention". In one study, in which the objective was to identify the coping strategies used by subjects with long-term pain, it was found that "Distraction of attention" was one of the most used coping strategies²⁵. Another study showed that the coping strategy of "Distraction of attention" was more effective than "Focus attention on pain"²⁶.

Regarding the cause domain of the IPQ-R, women associated their emotional state with the cause of pain more than men did. Men understand pain as something external to them and attributed it to "external" events, whereas women attributed it to "internal" ones⁸.

The results proved that, among subjects with central pain, women use spiritual and religious activities more as coping strategies. They also associate their emotional state with pain more than men do.

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