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Resilience, depression, and quality of life in elderly individuals with chronic pain followed up in an outpatient clinic in the city of São Paulo, Brazil

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Purpose: In this study, we assessed resilience, depression, and quality of life in a group of elderly individuals with or without chronic pain.

Patients and methods: A cross-sectional study assessing elderly individuals followed up at a geriatrics outpatient clinic and divided into two groups: 54 elderly patients with chronic pain and 54 elderly with no chronic pain.

Results: The sample comprised mainly women (67.6%), with mean age 79.9 years. The mean resilience index in the group with pain was 69.4 and, in the group with no pain, 80.1 (P<0.001). Depression was observed in 35.2% of patients with chronic pain; there was no case of depression in those without chronic pain. Quality of life of the elderly with chronic pain was worse in all the domains assessed: physical, mental, emotional, social, vitality, and pain.

Conclusion: In the study sample, resilience was lower, depression was more frequent, and quality of life was worse in the group of elderly with chronic pain.

Keywords: pain, older, resilience

Introduction

As the population grows older, the prevalence of chronic health problems increases. Among these problems are several diseases and syndromes associated with chronic pain.[1] In Brazil, in the 1960s, there were more than three million people of 60 or more years of age. In 2000, this portion of the population totaled more than 14 million people, almost 9% of the Brazilian population. Estimates by the Brazilian Institute of Geography and Statistics[2] indicate that the elderly will represent 15% of the Brazilian population in 2020, leaping to 18% in 2050, which will correspond to approximately 38 million individuals.[3] Within this context, Brazil will rank sixth among the countries with the largest number of elderly persons.

It is estimated that 20%–50% of elderly patients present with problems associated with pain. This proportion rises to 45%–80% of elderly inpatients. Pain control is inadequate in more than 50% of elderly, and over 25% die without obtaining its control.[4–6] In the aged with cognitive dysfunctions, the diagnosis and treatment of pain may make the problems even worse; in part, this is aggravated by the greater difficulty in evaluating pain.[7–9]

Among the elderly, chronic pain is the major complaint at outpatient clinics, and is the most frequent symptom in medical histories, occurring in 25%–50% of individuals.[10–12] The most frequent pain complaints among the aged are osteoarthritis, especially in the lumbar or cervical region (about 65%); musculoskeletal pain (roughly 40%);

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peripheral neuropathy (usually due to diabetes or postherpetic neuralgia, 35%); and chronic joint pain (15%–25%).[13–15] The consequences of untreated pain can deeply affect the elderly person's quality of life. In addition to the physiological risks associated with untreated pain, other factors can be identified, such as depression[16,17] and cognitive function compromise.[18,19]

Resilience is the capacity of remaining well, recovering, or even prospering in the presence of adversity.[20,21] When considering resilience as a capacity to be developed normally under difficult or risky conditions, and taking into consideration that all people, to a greater or lesser degree, will have to face some of these conditions at some point, resilience and the interaction between the risk factors and protection factors are connected throughout the entire human life, whether in childhood, adolescence, adulthood, or old age.[22]

Resilience refers to the capacity of a system to adapt to (or to recover from) adversity. In this study, we concentrated on an individual aspect of resilience—the psychological aspect, which involves emotional flexibility and the availability of problem resolution strategies.[23,24] In chronic pain, the psychological resources and the forms of dealing with adversity can facilitate adaptation styles, such as the acceptance of pain.[25] Consequently, psychological resilience can protect against the adverse effects of chronic pain on psychological adjustment.[26] However, due to life circumstances and the challenges associated with old age (such as personal loss, loss of social roles, and disease),[27] resilience might operate differently in the elderly, in comparison with younger adults.[28]

The objective of this study was to compare the resilience of elderly Brazilians with and without chronic pain followed up at an outpatient clinic, and to correlate resilience with other important constructs in the elderly population: depression and quality of life.

Materials and methods

This study was approved by the Ethics Committee for Analysis of Research Projects of the Hospital of Clinics of The University of São Paulo Medical School (# 499.917). A cross-sectional design was used. The chosen population comprised aged individuals from a Multidisciplinary Care Group geared toward the elderly and seen at a geriatrics outpatient clinic. Inclusion criteria were as follows: older without impairment cognitive and age over 60 years, and exclusion criteria were as follows: disagree in participating in the study and the sample do not follow up in geriatric clinic. The sample was divided into two groups: 54 elderly participants with chronic pain and 54 participants with no chronic pain. The study was conducted from April to December 2017.

Resilience was evaluated by the Connor-Davidson Resilience scale (CD RISC) developed in 2003, composed of 25 items that assess the capacity of the patient to face adversities and overcome obstacles encountered during their life, with five answer categories (0–4) grouped into four factors. The first factor was Tenacity (eleven items), which reflects the notion of personal competence; the second factor was Adaptability–tolerance (nine items) that has to do with tolerance of the negative effect and strengthening when facing stress. The third factor, Support (three items), reflects a positive acceptance of changes and safe relations. The fourth factor, Intuition (two items), reflects the control and confidence in one's instinct. The scale was translated to and validated for Brazilian Portuguese by Solano et al.[32] The Geriatric Depression Scale, a scale designed by Sheikh and Yesavage,[33] was used to evaluate depression. Quality of life was assessed by the SF-36 (The Medical Outcomes Study 36-item Short-Form Health Survey), translated into Portuguese by Ciconelli et al,[34] which assesses eight domains, such as physical, social, and emotional aspects, as well as functional capacity, mental health, vitality, pain, and general health condition.

Initially, each participant's cognitive state was evaluated by the Mental State instrument (MEEM–Mini Mental) and, if dementia was absent, the patient was invited to participate in the study. If they agreed and signed the written informed consent term, they were included, and the questionnaires were applied while they waited to be seen by the geriatrician. Each instrument was explained to the participants, and the answers from the participants were recorded by the authors (MCM, MSB). At the end of the questionnaire application, the elderly were questioned as to the presence of pain for more than 6 months on the same site, and thus they were allocated to the respective group: with and without chronic pain.

Statistical analysis

The values of the quantifiable variables were described by means and standard deviations, and minimum and maximum values. Even if the sample distribution of the values was asymmetric, the data were presented as means to allow better visualization of the results, since the median often coincided with the value of the first or the third quartile.

Quantitative variables were described as means±SD even when the distribution was asymmetric, to allow better visualization of the results, since the median often coincided with the value of the first or the third quartile. Minimum and maximum values were also presented. Categorical variables were described as absolute frequencies and percentages. For comparisons between groups regarding qualitative variables,

we used chi-squared or Fisher's exact test. For quantitative variables, we used nonparametric Mann–Whitney since neither of the variables was normally distributed. The significance level was set at 5%, and analyses were conducted with the R package (version 3.1.3).

Results

The sample comprised 108 elderly patients, 54 with pain, and 54 without. Seventy-three were women (67.6%) and the mean age was 79.9 years. The pain sites most often reported were knees (24.1%), lumbar region (20.4%), shoulder (11.1%), lower limbs (11.1%), and upper limbs (9.3%). Relationships between resilience, depression, and quality of life in the groups with and without pain, and relationships between resilience, depression, and quality of life among all the participants, were determined (Table 1).

Resilience was 80.1±7.4 in the participants with no chronic pain, and 69.4±13.4 in those with chronic pain ($P<0.001$; Table 2). The factorial structure of the CD RISC scale adapted for Brazil identified four main factors: Tenacity, Adaptability–Tolerance, Support, and Intuition. When analyzing these factors between the groups without and with pain, we observed higher values of Tenacity ($P<0.001$), Adaptability–Tolerance ($P<0.001$), Support ($P=0.009$), and Intuition ($P=0.005$) in the group without pain. In general, we noted less variability in the group without pain.

Depression was significantly more frequent among the elderly with pain ($P<0.001$), and did not occur among those without chronic pain (Table 2). In the group with pain, quality of life was worse in all SF-36 questionnaire domains (Table 3).

We noted an association between resilience and depression; the median resilience was 76 in the group without depression and 63 in the group with depression (Table 4). Lower resilience was observed in the participants with worse quality of life in the following domains: physical aspects, general health condition, pain, and mental health.

Discussion

This study aimed to compare the resilience of elderly people with and without chronic pain. It also analyzed other variables in the sample such as depression and quality of life. A total of 108 elderly individuals were evaluated, and 54 of them had complaints of chronic pain.

Investigations about resilience and chronic pain in the elderly are scarce. Our results showed that lower resilience was associated with chronic pain. When analyzing the four factors that comprise the Brazilian version of the CD RISC (Tenacity, Adaptability–Tolerance, Support, and Intuition), the differences between the two groups (with and without pain) proved consistent, especially in the Tenacity and Adaptability–tolerance factors. This appears to agree with the best psychometric properties found for Tenacity and Adaptability–tolerance facets in the validation study of the Brazilian version of the scale.[29] Being a cross-sectional study, one cannot infer if chronic pain leads to decrease of resilience or lower resilience facilitates the development of chronic pain in older people.

The elderly with pain presented with more depression (35.2% of patients) than those with no chronic pain. Some studies have shown that, among the elderly with persistent pain, the prevalence of depression is estimated as 19%–

Table 1 Characterization of the sample according to gender, marital status, and age in groups of elderly with and without chronic pain

	Group		*P*-value
	Without pain	With pain	
	n=54	n=54	
Gender n (%)			
Female	30 (55.6)	43 (79.6)	0.013[a]
Male	24 (44.4)	11 (20.4)	
Marital status n (%)			
Single	10 (18.5)	16 (29.6)	0.196[b]
Married	20 (37.0)	11 (20.4)	
Widower	22 (40.7)	23 (42.6)	
Divorced	2 (3.7)	4 (7.4)	
Age n (%)			
65–75 years	12 (22.2)	21 (39.6)	0.151[a]
75–80 years	17 (33.3)	14 (26.4)	
More than 80 years	24 (44.4)	18 (34.0)	

Notes: [a]Chi-squared test. [b]Fisher's exact test.

Table 2 Frequency of depression and resilience in the groups of elderly with and without chronic pain

	Group		*P*-value
	Without pain (N=54) (%)	With pain (N=54) (%)	
GDS			
Negative	54 (100.0)	35 (64.8)	<0.001[a]
Positive	0 (0.0)	19 (35.2)	
Resilience			
Mean (SD)	80.1 (7.4)	69.4 (13.4)	<0.0001[b]
Minimum–Maximum	(55.0–92.0)	(24.0–93.0)	

Notes: [a]Chi-squared test. [b]Nonparametric Mann–Whitney test.
Abbreviation: GDS, Geriatric Depression Scale.

Table 3 Distribution of quality of life aspects in the groups with and without pain according to SF-36

SF-36	Group		*P*-value
	Without pain n=54	With pain n=54	
Physical aspects Median (minimum, maximum) (1st quartile, 3rd quartile)	100.0 (0.0; 100.0) (80.0; 100.0)	0.0 (0.0; 100.0) (0.0; 75.0)	<0.001[a]
Social aspects Median (minimum, maximum) (1st quartile, 3rd quartile)	100.0 (50.0; 100.0) (90.0; 100.0)	87.50 (0.0; 100.0) (52.75; 100.0)	0.001[a]
Functional capacity Median (minimum, maximum) (1st quartile, 3rd quartile)	100.0 (0.0; 100.0) (90.0; 100.0)	85.0 (0.0; 100.0) (60.0; 100.0)	0.001[a]
Pain Median (minimum, maximum) (1st quartile, 3rd quartile)	100.0 (54.0; 100.0) (90.0; 100.0)	51.0 (21.0; 100.0) (41.0; 61.75)	<0.001[a]
Emotional Median (minimum, maximum) (1st quartile, 3rd quartile)	100.0 (0.0; 100.0) (90.0; 100.0)	70.0 (0.0; 100.0) (0.0; 100.0)	0.001[a]
Health condition Median (minimum, maximum) (1st quartile, 3rd quartile)	90.0 (37.0; 100.0) (80.0; 97.0)	78.0 (0.0; 100.0) (62.0; 87.0)	<0.001[a]
Mental health Median (minimum, maximum) (1st quartile, 3rd quartile)	90.0 (0.0; 100.0) (80.0; 100.0)	60.0 (0.0; 100. 0) (33.0; 88.0)	<0.001[a]
Vitality Median (minimum, maximum) (1st quartile, 3rd quartile)	90.0 (25.0; 100.0) (80.0; 90.0)	70.0 (0.0; 100.0) (40.0; 85.0)	<0.001[a]

Note: [a]Nonparametric Mann–Whitney test.

Table 4 Relationship between resilience and depression in both groups

	GDS		*P*-value
	Negative	Positive	
Resilience[a]	76.00 (24.00; 93.00)	63.00 (46.00; 84.00)	0.009

Note: [a]Median (1st quartile, 3rd quartile). Comparison by Mann–Whitney test.
Abbreviation: GDS, Geriatric Depression Scale.

28%.[30,31] Authors stated that 25% of elderly with persistent pain are at risk of depression and its consequences.[32,33] In our sample, more than one-third of patients with pain presented depression, and suffered from both depression and chronic pain; however, no depression was identified in any participant without pain, using the GDS questionnaire.

We found that lower resilience was associated with depression. The relationship between low resilience and mood disorders has already been pointed out in some studies.[34,35] Individuals with lower resilience present with greater vulnerability for developing depression and somatization.[36–38] In a population of a Chinese community aged over 60 years, lower levels of resilience were significantly associated with higher levels of depressive symptoms.[39]

Quality of life of the elderly with pain was compromised in the eight domains evaluated. These findings are corroborated by several studies showing that quality of life related to health is lower in patients with chronic pain, compared with healthy individuals[40–44] Some authors suggest that pain is the main cause of deteriorating quality of life.[45]

Regarding the association between resilience and quality of life, this study showed lower resilience in the following domains: physical, general health condition, mental health, and pain. However, there was no difference in functional capacity between the two groups.

This study identified a relationship between lower resilience and religiousness in its organizational aspect, which relates to attendance at religious meetings, such as masses and services. Among the forms of dealing with pain, religiousness and spirituality have proved very important.[45]

Resilience refers to the capacity to deal with and adapt in the face of adversity, and affects several aspects of life. Some authors state that individual and psychological

resilience involves emotional flexibility and the availability of problem-solving strategies; in chronic pain, these resources may facilitate adaptive confrontation, such as acceptance of pain.[23,24] Due to life circumstances and the challenges of advanced age, for instance, death, loss of social roles, and disease,[27] resilience may operate differently in the elderly compared with younger adults.[18] The hypothesis that aging adds to personal resilience, both in people with and without pain, would be plausible; chronic pain, however, could function as a disruptive stressor, an additional overload that would retard instead of increasing resilience. Nevertheless, an alternative explanation would be that the most resilient elderly would have a greater chance of falling into the group of elderly without pain, since they complain less (including of their own pain).

For most authors, resilience seems to play a significant role in confronting chronic pain, and to contribute to the development of internal resources that help a person deal in a positive manner with all adversities. An intervention study could be useful to assess the value of introducing techniques to enhance resilience in this population.

Conclusion

The study concluded that elderly people with chronic pain have lower resilience, more depression, and lower QOL than those without chronic pain.

The findings of the study suggest that resilience may be an important aspect in the process of confronting chronic pain; its evaluation might contribute to an integral approach to the elderly patient with chronic pain.

Acknowledgment

The authors certify that this work is novel.

Disclosure

The present study is a doctoral research at the University of São Paulo in Brazil, and there are no conflicts of interest in this study. This study kept the ethical standards of research with humans required in Brazil (Resolution 466/12). The authors report no conflicts of interest in this work.

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