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Resilience profile of patients with chronic pain

Perfil de resiliência em pacientes com dor crônica

Perfil de resiliencia en pacientes con dolor crónico

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Abstract

The aim of this study was to identify resilience profiles of patients with chronic pain. Using latent class analysis in a sample of 414 patients with chronic musculoskeletal pain, three profiles were identified: primary resilience (40%), consisting of individuals 40 years or younger with high education, who seek medical care, are not working, and without symptoms of psychological stress; secondary resilience (30%), consisting of women over 54 years of age with low schooling, who seek medical care, are not working, and with low likelihood of symptoms of psychological stress; tertiary resilience (29%), women with medium schooling, 40 to 54 years old, working, who do not seek medical care, and with a high likelihood of symptoms of psychological stress. The three profiles display different paths of resilience in chronic pain that are relevant to clinical practice, highlighting the importance of multidisciplinary care for patients with chronic pain.

Chronic Pain; Psychological Resilience; Life Quality

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Introduction

Chronic pain is pain that persists in continuous or recurrent form due to chronic disease processes. It has a heavy social impact and is frequently associated with other chronic diseases, placing a burden on health systems and the economy. It is a specific health problem, with clear characteristics of symptoms, incapacity, and mental health problems that are largely independent of the underlying disease or injury [1].

The prevalence of chronic pain in the general population varies according to the study, from 10.1% to 80% [2,3]. The differences are due mainly to the criterion used to classify chronic pain (< 3 months versus > 6 months), as well as the study population (adults, elderly, war veterans).

Despite advances in the understanding of pain, its prevalence is still high, and it sometimes goes unrecognized or is poorly assessed, underestimated, undertreated, or inadequately treated [4]. This may be related to the biomedical model's incapacity to deal with all the psychosocial, socio-demographic, behavioral, and sometimes even pathophysiological processes that trigger pain. This emphasizes the biopsychosocial focus, in which the subject's biological, psychological, and social characteristics become important for understanding chronic pain. Specifically, in this article we aim to investigate the interrelations between these variables from the perspective of resilience.

Resilience can be defined as one's capacity to adapt to stressful circumstances, and is associated with decreased perception of the stress. Higher levels of resilience are associated with higher levels of acceptance of pain and adaptation to it, regardless of its duration. Resilience prevents emotional stress and is associated with lower levels of depression and anxiety [5].

One major difficulty is the operationalization of scientific findings in clinical practice. Trivedi et al. [6] developed the concept of resilience as a construct with three levels, which they called primary, secondary, and tertiary resilience. The objective of this conceptualization is its application to clinical practice in patients with chronic diseases, acknowledging that resilience can change over time, which would allow monitoring the levels with specific responses.

The aim of the current article is to draw a resilience profile of patients with chronic pain, combining the strategy of using a specific instrument [7] with the concept of resilience as a three-level construct [6]. The idea is to reflect the individual's life history and social context so that at least part of the enormous range of interactions can be contemplated. We use latent class analysis (LCA) for this purpose, as a person-oriented approach [8]. The focus of LCA is to study individuals based on the patterns of relevant individual characteristics [9], observing the profiles of those displaying similar patterns. This allows identifying more general processes underlying the profiles, which are assembled based on the probability of belonging (conditional probability) to the latent classes furnished by the modeling.

Methodology

Sample

The current study complied with *Resolution n. 196/9*6 of the Brazilian National Research Council, which deals with the guidelines and regulatory standards for research in human subjects, and was approved by the Institutional Review Board of the institution where the research took place (case review n. 1005-55, Research and Graduate Studies Group, Porto Alegre University Hospital). After obtaining authorization for use of the principal investigator's database, the study was approved by the Institutional Review Board of the Sergio Arouca National School of Public Health, Oswaldo Cruz Foundation (CEP/ENSP/Fiocruz, CAAE: 24131413,0,0000,5240).

The data collection methodology has been described by Caumo et al. [10]. The sample was recruited in a tertiary clinic for chronic pain (patients referred from primary care units), in addition to volunteers recruited through newspaper ads. The inclusion criterion was diagnosis of musculoskeletal pain by physicians with clinical experience in pain management. The diagnosis was established using the standard protocol for each type of pain. The clinical criteria for defining patients with myofascial pain syndrome were regional pain, normal neurological examination, presence of trigger points, or painful points that cause pain irradiating to the affected muscle when pressed or stimulated, taut bands in the

muscle tissue, tender points, and pain described as "dull", "tender", or "deep". The diagnosis of chronic tension headache was based on the criteria of the International Headache Society, and the diagnosis of fibromyalgia was based on the American College of Rheumatology criteria.

The exclusion criteria were inability to understand the native language, illiteracy, or impossibility of appearing at the hospital for the assessments.

Study instrument and variables

The initial classification of individuals according to level of resilience used the version of the *Profile of Chronic Pain: Screen* (PCP:S) translated to Portuguese and adapted to Brazil. The original version of the PCP:S consists of 15 items distributed across three dimensions [11]: severity – intensity or aversion to pain (four items; score from 0 to 30); interference – impact of pain on pleasant activities, relationships, responsibilities, personal goals, self-care, and cognition (six items; score from 0 to 36); emotional stress – feelings related to pain, such as sadness, strain, anger, pleasure, withdrawal (five items; score from 0 to 25). The translated version adapted to the Brazilian population [10] showed the same dimensional structure as the original study.

For classification of individuals as resilient versus non-resilient, the study used a similar procedure to that described by Karoly & Ruehlman [7]. Thus, individuals were classified as resilient when they obtained high scores on the severity scale (score above the sample's mean on the scale) in combination with a low score on the interference and emotional stress scales (score below the sample's mean on the scale). Non-resilient individuals were classified according to high scores on the interference, severity, and emotional stress scales (score above the sample's mean on the scale). The others were classified as "others". The necessary adjustments were made since the current study's sample was small when compared to that used by Karoly & Ruehlman [7].

In this study, the variables used to construct the profile via LCA are: age (≤ 30 years, 31-40, 41-59, ≥ 60), sex (male, female), schooling (low: 0-5 years, average: 6-10, high: ≥ 11), working despite the pain (yes, no), specific medical treatment for chronic pain (yes, no), resilience (resilient, non-resilient, other). In addition, to explore the model's validity we used the variable related to diagnosis of chronic pain (myofascial pain syndrome, chronic tensional headache, fibromyalgia).

Statistical modeling

LCA is a finite mixture model [8,12,13,14,15], the application of which is adequate when postulating that a population consists of two or more underlying latent subgroups, defined by the intersection of numerous individual characteristics, i.e., when postulating the existence of an unobserved underlying categorical variable (construct) that divides the population into mutually exclusive and exhaustive latent classes [8,16]. The categories' pertinence to the classes is unknown, but can be deduced through a set of measurements (items, variables), generally categorical.

LCA allows classifying cases with categorical indicators, similar to factor analysis with continuous variables. However, the first type of analysis includes the probability that a group of individuals with particular characteristics belong to a latent class that is exclusively dependent on the data [8,16].

Two parameters are essential for understanding LCA: the probability of belonging to a given latent class (prevalence of latent classes) and the probability of the category's response within each class (conditional probabilities), which can be used to obtain the expected proportion in each cell in the contingency table [8]. If the model fits the data well, the expected proportion of cells coincides with the observed proportion [8]. The latent classes can be defined (named, interpreted) by the combination of conditional probabilities, which in turn characterize the individuals belonging to the latent class in question.

The modeling for choosing the number of latent classes considered the following criteria:

- Pearson's χ^2 goodness of fit and log-likelihood ratio chi-square (G^2): the model is considered adequate when it minimizes the values for χ^2 and G^2 without an excessive number of parameters [17,18]; in this case, we obtain $p > 0.05$, i.e., it is not necessary to include more latent classes in the model.
- Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC): the best models show the lowest BIC and/or AIC values [16]. BIC is more appropriate for latent classes, since it is simple

and considers the sample size in its calculation [16,19,20,21]. We also have Consistent AIC (CAIC) and Sample-size Adjusted BIC (SSBIC or adjBIC), which follow the same logic as the other criteria, with sample-size adjusted BIC preferred for small samples [21].

- Entropy: this is a measure of dispersion (or concentration) of a probability mass function [17,18]. In practice, entropy seeks to assess whether the separation of classes proposed by the modeling displays acceptable quality, i.e., whether the individuals' classification in classes is satisfactory. The current study adopts the measure of relative entropy [22], which varies from 0 to 1, where 0 is the worst situation and 1 is the best: the closer to 1, the clearer the definition of classes [23].
- Residuals analysis: this analysis is essential for assessing the assumption of local independence. The most common method consists of comparing the observed frequency of variables with the expected frequency according to LCA. The bivariate residuals are observed for each comparison pair; thus, a 2X2 table presents four residuals to be evaluated. This study uses the normalized residual, and results greater than $|1.96|$ are considered significant, indicating violation of the local independence assumption [24,25]. It should be noted that there is no golden rule concerning the acceptable number of residuals; however, to add more than four residuals can make the model unwieldy [26].

Having determined the best latent class model, we next endeavored to verify the model's quality. Thus, we compared the latent classes as a function of the score obtained on the PCP:S dimensions, using one-way ANOVA with post-hoc Bonferroni test. To assess external validity, we used the maximum log-likelihood test (G^2, similar to χ^2), comparing the distribution of individuals according to diagnosis of chronic pain with the classification predicted by the latent class modeling.

Modeling used the poLCA package [17,18] for R software. Significance was set at 5%.

Results

The study sample included 414 patients recruited at the Pain and Palliative Care Clinic of the University Hospital in Porto Alegre, Rio Grande do Sul, Brazil. Of these, 347 were women with chronic musculoskeletal pain, with a mean of 11.03 years of schooling (standard deviaton – SD = 5.43) and mean age 50.23 years (SD = 17.10).

Of all the patients, 65.9% were seeking medical care and 69.8% were not working because of the pain (Table 1). The method for classification of resilience resulted in a total of 11.6% of resilient individuals, 33.1% non-resilient, and 55.3% not classified either as resilient or non-resilient, thus classified as "others". This "others" category was removed from the original study by Karoly & Ruehlman [7], and consisted of individuals with the following characteristics on the PCP:S scale: low severity (mean 18.20) and intermediate emotional stress (mean 11.97) and interference (mean 16.87). Still, in all the dimensions it is the category with the widest variability of data, with SD of 5.47, 6.42, and 8.63, respectively (Table 1).

Means in the sample were 21.60 on the severity dimension (standadrd error – SE = 0.28), 14.76 on emotional stress (SE = 0.35), 21.05 on interference (SE = 0.48), and 57.41 on the total scale (SE = 0.97).

Table 2 shows the goodness of fit for the latent class models, from one to five classes. The fit generally decreased as the number of classes increased, but BIC and CAIC found their optimal point with the three latent classes model (BIC = 3,619.69; CAIC = 3,648.69). Although the other fits point to the model's adequacy with four or five latent classes, we found that the addition of a fourth or fifth latent class made it redundant, with the additional classes failing to add explanatory power to the model from the theoretical point of view, also reflecting the observed p-value (0.143). There is thus evidence that after the third latent class, it is no longer necessary to add more classes. Given the above, the study adopted the model with three latent classes, with prevalence rates and conditional probabilities shown in Table 3.

The class nomenclature was that proposed by Trivedi et al. [6] and relates to the predominant category of resilience in the latent class. Thus, class 1 was called primary resilience, and with a prevalence of 40% it has the highest probability of consisting of individuals up to 40 years of age, with 13 years of schooling or more, who seek medical care, not working, and classified as "others" on the PCP:S scale. As for gender, males showed a higher probability of belonging to this class than to others.

Table1

Socio-demographic characteristics of the sample and mean score on *Profile of Chronic Pain: Screen* (PCP:S).

Variables	n	%	Severity Mean (SE)	Emotional stress Mean (SE)	Interference Mean (SE)	Total Mean (SE)
Diagnosis						
Myofascial pain syndrome	345	83.3	21.35 (0.32)	14.66 (0.39)	20.61 (0.53)	56.62 (1.08)
Fibromyalgia	19	4.6	23.74 (0.87)	21.11 (1.44)	28.37 (1.98)	73.21 (3.85)
Chronic tension headache	50	12.1	22.52 (0.70)	13.02 (0.87)	21.34 (1.18)	56.88 (2.35)
Gender						
Male	67	16.2	18.84 (0.82)	10.99 (0.92)	15.69 (1.22)	45.51 (2.59)
Female	346	83.8	22.14 (0.29)	15.48 (0.37)	22.07 (0.50)	59.69 (1.00)
Age (years)						
≤ 40	129	31.2	19.27 (0.52)	12.91 (0.64)	19.00 (0.82)	51.18 (1.74)
41-54	127	30.7	23.03 (0.44)	16.10 (0.64)	24.19 (0.86)	63.32 (1.66)
> 54	158	38.2	22.32 (0.46)	15.20 (0.55)	20.18 (0.75)	57.71 (1.53)
Schooling (years)						
≤ 8	140	33.8	23.31 (0.48)	15.61 (0.62)	21.11 (0.82)	60.03 (1.66)
9-12	110	26.6	22.05 (0.52)	16.22 (0.65)	22.46 (0.91)	60.74 (1.84)
≥ 13	164	39.6	19.81 (0.44)	13.06 (0.56)	20.04 (0.76)	52.91 (1.52)
Medical care						
Yes	273	65.9	20.89 (0.33)	12.87 (0.38)	17.97 (0.45)	51.73 (0.94)
No	141	34.1	22.98 (0.52)	18.43 (0.63)	27.04 (0.89)	68.45 (1.87)
Working despite the pain						
No	289	69.8	20.17 (0.35)	12.17 (0.38)	16.87 (0.46)	49.20 (0.98)
Yes	125	30.2	24.94 (0.33)	20.77 (0.46)	30.76 (0.52)	76.46 (1.04)
Resilience (PCP:S)						
Resilient	48	11.6	24.67 (0.32)	8.67 (0.60)	14.39 (0.72)	47.73 (1.06)
Non-resilient	137	33.1	26.19 (0.22)	21.61 (0.27)	30.42 (0.36)	78.22 (0.63)
Others	229	55.3	18.20 (0.36)	11.97 (0.42)	16.87 (0.57)	47.04 (1.10)

SE: standard error of the mean.

Class 2 was called secondary resilience, and with a prevalence of 30% it has a higher probability of consisting of women over 54 years of age, with up to eight years of schooling, who seek medical care, are not working, and classified as "resilient" on the PCP:S scale.

Class 3 was called tertiary resilience, and with a prevalence of 29% it has a higher probability of consisting of women 41 to 54 years of age, with nine to 12 years of schooling, who do not seek medical care, are working, and were classified as "non-resilient" on the PCP:S scale.

As shown in Table 4, the results show that the resilience profiles based on latent classes is able to discriminate between individuals. Thus, individuals classified with primary resilience displayed lower scores on all the dimensions of PCP:S, followed by those with secondary resilience and tertiary resilience, with significant differences between all the dimensions in the post-hoc Bonferroni test (p-value < 0.05).

Importantly, LCA is a finite mixture model, meaning that the classes consist of a combination of variables, and that we can find men and women in the same class, for example. What characterizes a class is that the category shows higher probability in this class than in the others.

Residuals analysis to assess local independence did not indicate any significant residual (greater than 1.96). The data thus meet the assumption of local independence.

Table 5 shows the results of the external validity test. The null hypothesis is that the distribution of individuals in the categories is independent. Comparison of latent classes and the classification of the diagnosis of chronic pain proved significant (G^2 = 16.060; p-value = 0.003): individuals with fibromyalgia belong predominantly to the tertiary resilience profile (63.2%). Meanwhile, individuals

Table 2

Goodness of fit according to number of classes.

Parameters	Number of classes				
	1	2	3	4	5
Number of parameters	9	19	29	39	49
Fit	-1,995.07	-1,771.35	-1,722.47	-1,708.75	-1,697.23
AIC	4,008.14	3,580.69	3,502.94	3,495.47	3,492.45
BIC	4,044.37	3,657.19	3,619.69	3,652.48	3,689.72
CAIC	4,053.37	3,676.19	3,648.69	3,691.48	3,738.72
Adjusted BIC	4,015.81	3,596.89	3,527.66	3,528.72	3,534.23
G^2	706.40	258.96	161.20	133.74	110.720
χ^2	1,096.02	335.33	206.62	160.00	138.92
Degrees of residual freedom	206	196	186	176	166
p-value	< 0.001	< 0.001	0.143	0.801	0.938
Relative entropy	-	0.98	0.83	0.85	0.83

AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; CAIC: Consistent AIC.

Table 3

Conditional probabilities and prevalence of classes.

Variables	Class 1 p (SE)	Classe 2 p (SE)	Classe 3 p (SE)
Gender			
Male	0.23 (0.04)	0.12 (0.03)	0.12 (0.03)
Female	0.77 (0.04)	0.88 (0.03)	0.88 (0.03)
Age (years)			
≤ 40	0.61 (0.06)	0.00 (0.00)	0.23 (0.04)
41-54	0.25 (0.04)	0.26 (0.05)	0.44 (0.05)
> 54	0.14 (0.05)	0.74 (0.05)	0.33 (0.04)
Schooling (years)			
≤ 8	0.08 (0.03)	0.65 (0.07)	0.36 (0.05)
9-12	0.27 (0.04)	0.17 (0.05)	0.36 (0.05)
≥ 13	0.65 (0.04)	0.18 (0.06)	0.28 (0.04)
Medical care			
Yes	0.88 (0.03)	0.96 (0.03)	0.05 (0.02)
No	0.12 (0.03)	0.04 (0.03)	0.95 (0.02)
Working			
No	0.99 (0.01)	0.99 (0.02)	0.00 (0.01)
Yes	0.01 (0.01)	0.01 (0.02)	1.00 (0.01)
Resilience (PCP:S)			
Resilient	0.12 (0.03)	0.21 (0.04)	0.02 (0.01)
Non-Resilient	0.05 (0.02)	0.31 (0.05)	0.73 (0.04)
Others	0.83 (0.04)	0.48 (0.06)	0.25 (0.04)
Estimated proportion of latent class	0.40 (0.04)	0.31 (0.04)	0.29 (0.02)
Prevalence of latent class (post hoc)	0.40	0.30	0.29

P: conditional probability; PCP:S: *Profile of Chronic Pain: Screen*; SE: standard error.

with chronic tension headache appear predominantly in the secondary resilience profile (46%) and those with myofascial pain syndrome belong predominantly to the primary resilience profile (42.6%), as evidence of the latent classes' external validity.

Discussion

This article identifies and describes a set of variables and its interrelationship with resilience in individuals with chronic pain, using LCA. It also assesses the validity of latent classes, observing the pattern found with an external validator, and in this case the results pointed to the validity of the existence of three latent classes of resilience: primary, secondary, and tertiary.

Primary resilience reflects individuals with low-grade pain, while also apparently reflecting different patterns of resilience. This difference could indicate both a hereditary and environmental effect, and the findings are thus consistent with the work of Boardman et al. [27]. The authors investigated the inheritance of psychological resilience in adults (monozygotic twins) older than 25 years in the United States and found that men and women display the same degree of inheritance in relation to positive affect; still, after controlling for other psychological effects, the inheritance of resilience appears to be greater in men. Meanwhile, when compared to women, men appear to derive additional benefits in the environmental domain, which can allow other manifestations of resilience, independently of gender [27]. The explanations for this environmental domain, according to the three authors, are based on the social role developed by women (housework and family), making them less resistant to stressful factors involving friends and family (divorce and domestic and relationship problems), since stressful events in life in general are similar for women and men [27]. This would also support the age issue, since the primary resilience class includes male individuals that are younger than the women in the secondary resilience class, which could explain the development of distinct resilience paths in the two groups.

The secondary resilience class consisted predominantly of women more than 54 years old, with low schooling, not working, but who seek medical care. With 30% prevalence, the main difference between this class and tertiary resilience were schooling, age, the search for medical care, and work. The difference in relation to primary resilience was gender, age, and schooling.

The result of latent classes as a function of age bracket is similar to the study by Gooding et al. [28], in which the level of overall resilience and sub-dimensions of emotional regulation and problem-solving were greater in the elderly than in the young. Meanwhile, resilience related to social support was greater in the young than in the elderly.

In the current study, not working was a factor related to primary and secondary resilience, and individuals with this profile also belonged to a higher age bracket. In this case, not working could be a way of anticipating retirement, which is often a worker's goal in the sense of a definitive vacation, since in Brazil, despite all the dissent, pensioners' basic rights are still safeguarded. This is important, because studies that use the "work" variable, like Giuntoli et al. [29], evaluated individuals that lost their jobs, in whom they identified high prevalence of depression when assessing mental health and resilience during the recession in Bradford, England. The authors further highlight that men were more reluctant to seek emotional support than women. Meanwhile, young males reported alcohol and drug abuse to deal with the stress. Even acknowledging their stress and depression, many participants refused to seek medical help due to the stigma of mental illness. In the study by Wright et al. [30], no differences were found according to gender in the variables related to resilience.

In Karoly & Ruehlman [7], which used PCP:S to classify individuals with chronic pain in two groups (resilient and non-resilient), the resilient group had more schooling, while the non-resilient group was significantly more prone to receiving treatment for their pain when compared to resilient individuals (78% of the non-resilient group sought medical treatment, compared to 60% of the resilient group). The authors' findings differ from those of the current article, but this difference should be observed with caution. First, in the study by Karoly & Ruehlman [7], although non-resilient individuals sought more medical care, 60% of resilient individuals did likewise. Second, in relation to work,

Table 4

Comparison of latent classes according to *Profile of Chronic Pain: Screen* (PCP:S).

PCP:S	Latent classes			F	p-value
	Primary resilience Mean (SE)	Secondary resilience Mean (SE)	Tertiary resilience Mean (SE)		
Severity	17.98 (0.44)	23.07 (0.45)	24.98 (0.34)	78.161	< 0.001
Emotional stress	10.91 (0.47)	14.25 (0.57)	20.53 (0.51)	89.726	< 0.001
Interference	15.69 (0.59)	18.71 (0.72)	30.74 (0.53)	158.631	< 0.001
Total	44.58 (1.21)	56.04 (1.45)	76.24 (1.09)	160.509	< 0.001

F: Anova's test result; SE: standard error of the mean.

Table 5

External validity of latent classes.

Diagnosis	Latent classes			G^2	p-value
	Primary resilience n (%)	Secondary resilience n (%)	Tertiary resilience n (%)		
Myofascial pain syndrome	147 (42.6)	99 (28.7)	99 (28.7)	16.060	0.003
Fibromyalgia	3 (15.8)	4 (21.1)	12 (63.2)		
Chronic tension headache	16 (32.0)	23 (46.0)	11 (22.0)		

G^2: log-likelihood ratio chi-square test.

we are apparently seeing cultural differences in the way work and retirement are viewed in the two countries; thus, as found in our study, persons with low schooling are submitted to more physically demanding work than those with more schooling, so it is understandable for them to view retirement as a "prize", "vacation", or "second life" [31].

Further, the search for medical care at a specialized center for chronic pain allows individuals to receive adequate therapy for their condition, which can result in the patient's enhanced perception of the pain. Thus, individuals with low schooling may develop a feeling of trust in the physician, an essential condition for successful treatment. The perception of well-being and emotional welfare are factors that help maintain mental health [32,33]. Thus, the perception that one is receiving adequate treatment for a problem has a protective side for an individual's health.

In the analysis of external validity, individuals with fibromyalgia were predominantly classified with tertiary resilience. This appears to relate to the severity of the disease, characterized by diffuse pain in various parts of the body, concurrent presence of myofascial pain, and (although controversial) greater comorbidity and other physical symptoms, such as fatigue and sleep and mood disorders [34]. One can infer from this severity the difficulty in seeking psychological rebalance and state of resilience (reinforced by the fact that individuals with fibromyalgia obtained higher scores in the dimensions of severity, interference, and emotional stress).

Resilience is a complex construct, and it is not possible to establish a universal resilient trait [35,36]; it is subject to cultural, environmental, and genetic variations, generating multiple and sometimes unexpected paths [37]. However, the current study's findings corroborate the position of Trivedi et al. [6] and the implications for clinical practice, allowing better patient follow-up. Thus, individuals with the primary resilience profile would only require the usual care and follow-up to guarantee equilibrium and well-being. Individuals with secondary resilience profile may need support and reinforcement

in their coping resources, but can largely recover their equilibrium on their own, without ruling out specialized follow-up in their recovery path. The individuals that require the most attention are those with the tertiary resilience profile, since they may need multidisciplinary professional intervention to avoid greater deterioration of their health and well-being.

Conclusions

LCA largely proved useful for developing resilience profiles; in addition, the use of a specific instrument for resilience in chronic pain (PCP:S) contributed to this article's findings. The complexity of the phenomenon in question, resilience, requires a detailed study of biopsychosocial aspects; in this case, socio-demographic variables act as a proxy for these aspects and allow constructing a solid base for understanding resilience. The specific instrument (PCP:S) allows orienting the process of identifying resilience groups.

The current findings' clinical relevance merit special attention, since the resilience profiles reflect different patient needs in terms of clinical follow-up. Again, harm to the individual's mental health increases when moving from primary resilience to the secondary level and finally to the tertiary level.

However, some limitations should be highlighted. Generalization of the results is mainly limited by the fact that the sample consists of individuals from a tertiary care clinic (a specialized service). Another limitation results from lack of identification of the type of pain (neuropathic versus nociceptive), which could shed more light on this phenomenon. One more limitation is lack of inclusion of other pain conditions besides fibromyalgia, myofascial pain syndrome, and chronic tension headache; adding them might have led to the formation of different latent class profiles than those found in the current study.

Finally, since the resilience construct is heavily related to the individual's life history, the article's conclusions should be interpreted with caution since they are not based on longitudinal data. Subsequent studies should thus attempt to reveal individuals' life histories, seeking latent class models for longitudinal data.

Contributors

I. Souza, A. G. G. Vasconcelos, W. Caumo and A. F. Baptista paticipated in the conception and project, data analysis and interpretation, writing and relevant critical revision of the intellectual content of the article, approval of the final version for publication and; are responsible for all aspects of the research and for guaranteeing the accuracy and integrity of all parts of the work.

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Resumo

O objetivo deste estudo foi identificar perfis de resiliência em paciente com dor crônica. Utilizando a Análise de Classes Latentes, em uma amostra de 414 pacientes com dor crônica musculoesquelética, foram identificados três perfis: resiliência primária (40%), composto por indivíduos de até 40 anos, que têm alta escolaridade, buscam os cuidados médicos, não trabalham e não apresentam sintomas de estresse psicológico; resiliência secundária (30%), composto por mulheres com mais de 54 anos, que têm baixo nível de escolaridade, buscam cuidados médicos, não trabalham e apresentam baixa probabilidade de experimentar sintomas de estresse psicológico; resiliência terciária (29%), composto por mulheres com médio nível de escolaridade, idade entre 40 e 54 anos, que trabalham, não buscam cuidados médicos e têm alta probabilidade de experimentar sintomas de estresse psicológico. Os três perfis revelam caminhos distintos de resiliência na dor crônica com relevância para prática clínica, destacando a atuação multidisciplinar nos cuidados ao paciente com dor crônica.

Dor Crônica; Resiliência Psicológica; Qualidade de Vida

Resumen

El objetivo de este estudio fue identificar perfiles de resiliencia en pacientes con dolor crónico. Utilizando el análisis de clases latentes, en una muestra de 414 pacientes con dolor crónico musculoesquelético, fueron identificados tres perfiles: resiliencia primaria (40%), compuesto por individuos de hasta 40 años, que tienen una alta escolaridad, buscan cuidados médicos, no trabajan y no presentan síntomas de estrés psicológico; resiliencia secundaria (30%), compuesto por mujeres con más de 54 años, que tienen bajo nivel de escolaridad, buscan cuidados médicos, no trabajan y presentan baja probabilidad de experimentar síntomas de estrés psicológico; resiliencia terciaria (29%), compuesto por mujeres con medio nivel de escolaridad, edad entre 40 y 54 años, que trabajan, no buscan cuidados médicos y tienen una alta probabilidad de experimentar síntomas de estrés psicológi-co. Los tres perfiles revelan caminos distintos de resiliencia en el dolor crónico, con relevancia para la práctica clínica, destacando la actuación multidisciplinaria en los cuidados al paciente con dolor crónico.

Dolor Crónico; Resiliencia Psicológica; Calidad de Vida

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