Original article

Somatoform Disorders and Personality Traits in Hospitalized Patients with Chronic Back Pain in El Salvador

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Abstract

Introduction. The somatoform symptoms disorder is characterized by multiple psychical symptoms that can't be attributed to another physical or mental health diagnosis or drug abuse, having personality disorders as the most common comorbidity. **Objective.** To determine the frequency of somatoform disorders, it's most important characteristics and different personality traits among patients with chronic back pain. **Methodology.** Cross-sectional descriptive study carried out with patients admitted to the neurosurgery department of the General Hospital of the Salvadoran Social Security Institute. Data collection was carried out using the Screening for Somatoform Symptoms 2 scale and the International Personality Disorder Examination scale. The qualitative variables were analyzed through absolute frequencies. The quantitative variables were analyzed through measures of central tendency and dispersion. The statistical analyzes were carried out using the Statistical Package for the Social Sciences version 26. **Results.** The study included 60 patients, 40 of them women, 31 between 41 and 60 years old. Twenty-eight patients presented eight or more symptoms, excluding low back pain. Forty-five patients reported symptoms for more than one year. Fifty-three patients presented somatoform disorder. The most frequent personality disorders were obsessive-compulsive (31), borderline (21) and paranoid (21). **Conclusion.** Patients with chronic lower back pain who require hospital admission have a high frequency of somatoform disorders, with the main symptom being pain in the legs or arms; furthermore, these patients are characterized by mostly presenting obsessive-compulsive personality traits.

Keywords

Somatoform Disorders, Personality Disorders, Low Back Pain, Borderline Personality Disorder.

Resumen

Introducción. El trastorno somatomorfo se caracteriza por la presentación de múltiples síntomas físicos que no pueden ser atribuidos a otra enfermedad física, mental o al uso de sustancias, teniendo como comorbilidad más prevalente a los trastornos de personalidad. **Objetivo.** Determinar la frecuencia de trastorno somatomorfo, sus características principales y diferentes rasgos de personalidad entre pacientes con lumbalgia crónica. **Metodología.** Estudio descriptivo transversal realizado con pacientes ingresados en el servicio de neurocirugía del Hospital General del Instituto Salvadoreño del Seguro Social. La recolección de datos se realizó a través de la escala *Screening for Somatoform Symptoms 2* y la escala *International Personality Disorder Examination*. Las variables cualitativas fueron analizadas a través de frecuencias absolutas. Las variables cuantitativas fueron analizadas a través de medidas de tendencia central y de dispersión. Los análisis estadísticos fueron realizados en el programa *Statistical Package for the Social Sicience*, versión 26. **Resultados.** Se incluyeron 60 pacientes, 40 de ellos mujeres, 31 entre los 41 y 60 años. Veintiocho pacientes presentaron ocho o más síntomas, excluyéndose dolor lumbar. Cuarenta y cinco pacientes reportaron sintomatología por más de un año. Cincuenta y tres pacientes presentaron trastorno somatomorfo. Los trastornos de personalidad más frecuentes fueron obsesivo-compulsivos (31), límites (21) y paranoides (21). **Conclusión.** Los pacientes con dolor lumbar crónico que requieren ingreso hospitalario presentan una alta frecuencia de trastornos somatomorfos, con dolor en piernas o brazos como síntoma principal; además, estos pacientes se caracterizan por presentar en su mayoría rasgos de personalidad obsesivo-compulsivos.

Palabras clave

Trastornos Somatomorfos, Trastornos de la Personalidad, Dolor de la Región Lumbar, Trastorno de Personalidad Limítrofe.

OPEN ACCESS

Trastornos somatomorfos y rasgos de personalidad en pacientes hospitalizados por lumbalgia crónica en El Salvador

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Introduction

Somatoform disorder is characterized by the persistence of physical symptoms that suggest the presence of a medical illness but are not fully explained by this condition or by the direct effects of another substance or mental illness.[i] It may begin at any stage of life and is seen more frequently in women, with an estimated female-to-male ratio of 10:1. This condition is accompanied by diminished quality of life, inability to perform basic functions, and an increase in associated expenses, primarily for unnecessary medical tests or treatments.[ii]

The comorbidity of somatoform pain disorders is up to six times greater in the population with pain disorders than in the general population, describing a significant relationship with personality disorders, defined as a set of characteristics that deviate from the pattern of normality and that cause dysfunction in one or more specific areas of life.[iii,iv] Up to 50.6 % of patients with somatoform disorder are diagnosed with personality disorders, with this comorbidity even being considered as the most severe of the somatoform disorders.5 Similarly, personality disorders are associated with chronic pain[vi,vii] with a prevalence between 31 and 81 %; when studying low back pain, prevalence is around 60 %, being higher than those observed in acute pain.[viii]

Among disorders most commonly associated with somatoform disorder, histrionic, narcissistic, paranoid, borderline, antisocial, and avoidant personality disorders have been described.[viii] On average, between 20 and 25 % of patients seen in primary care services develop a chronic illness due to somatic symptoms,[i] and only 45 % of them receive an accurate diagnosis and are referred to a specialist, generating a high rate of inter-consultations and a higher frequency of specialized consultations.[ix-xi]

In Europe, the prevalence of somatoform disorders in the general population is estimated to be between 12.9 % and 18.4 % depending on the country and area, and in the USA, between 5 % and 7 %,[xii] making it one of the most common categories of patient concern in the primary healthcare setting.[xiii] In Europe, the ratio of patients with medically unexplained physical symptoms to hospitalization costs is higher in neurology services (1.9 %) than in other services, with only 0.3 % in psychiatry services.[xiv]

At national level, there are still no published studies that determine the prevalence of somatoform disorders in the Salvadoran population. The number of patients with chronic low back pain that are affected by any of the different personality disorders or by a somatoform disorder is unknown. The objective of this study is to determine the frequency of somatoform disorder, its predominant characteristics, and different personality traits among patients with chronic low back pain.

Methodology

A cross-sectional descriptive study conducted between August and October 2021, with patients admitted to the neurosurgery service of the General Hospital of the Salvadoran Social Security Institute, which is a third-level hospital located in the capital of El Salvador; it serves contributors, pensioners, and beneficiaries from all over the country, it has three specialties and 18 subspecialties, has a capacity of 428 beds, and employs a staff of 2180 employees.

The sampling for the selection of the study population was non-probabilistic by convenience since all the patients admitted during the three-month window were included, making a total of 60 patients. To participate, patients had to meet the following criteria: to be 18 years old or older, male or female, and with a diagnosis of chronic low back pain. Patients who did not wish to participate or sign the informed consent form, patients whose disease was the result of a traumatic, infectious, metastatic, or inflammatory spinal lesion, patients whose lesion was the result of non-disc degenerative spinal disease, and patients who could not respond to the screening instruments used in the study because they were in a state of altered consciousness or intellectual deficit, either by filling out or verbally assisted, were excluded.

Data collection used the Screening for Somatoform Symptoms 2 (SOMS-2)[xv] scale and the International Personality Disorder Examination (IPDE)[xvi] scale to determine factors compatible with somatoform disorders and to determine personality traits. Both scales were placed in the same Word document to facilitate data collection. Originally, these scales were intended to be self-administered; however, in some cases, they were administered by the investigators due to the condition of the patients.

For data collection, interviews were conducted from Monday to Friday during the study period. A maximum of two interviews per day were conducted by the researchers and medical students specializing in psychiatry and mental health who were previously trained to apply the instrument. Each interview lasted an average of 45 minutes.

The SOMS-2 scale includes all symptoms of somatoform disorder. This scale consists of 53 items with dichotomous responses; the patient should respond positively only to those items present in the last two years. Items 1 to 35 assess the possible symptoms of somatization disorder; items 36 to 42, the symptoms that may occur during an anxiety crisis, low mood, or in undifferentiated somatoform disorder, and items 43 to 53 assess the inclusion and exclusion criteria of the different subgroups of somatoform disorders. At the end of the scale, 16 additional items are included (items 53 to 68) that inquire about the number of visits to the physician in the last year, the influence of the symptoms on the patient's quality of life, or whether the patient takes medication for his or her complaints.

The concept of somatoform disorder, contemplated in the Diagnostic and Statistical Manual of Mental Disorders version 4 (DSM-4), was used, despite a new conceptualization in the most recent version DSM-5, because the SOMS-2 scale was standardized with DSM-4 criteria and has not been revised or updated for its most recent version.

The symptom of back pain was excluded from the scale since it was taken as a selection criterion and not as a symptom of somatoform disorder. For the diagnosis of somatoform disorder, the cut-off point was taken as the report of four symptoms since this is a factor that increases sensitivity and specificity concerning seven or more symptoms; however, for the report of severity of somatoform disorder, the cut-off point was taken as having presented at least four symptoms, placing patients who reported less than four symptoms in the "not diagnosed" category.

The IPDE scale is an instrument consisting of 77 questions with two possible answers, true or false, which can be corrected using the template supplied with the scale, and allows one to visualize how many answers do not coincide with those expected and presented by the individual for each personality trait. The result is only categorical, as it does not intend to calculate dimensional scores. It is a screening instrument and, therefore, should not be used as a formal psychiatric diagnosis. This scale uses as a cut-off point for each trait, four or more unexpected responses, and assesses paranoid, schizotypal, schizoid, sociopathic, histrionic, borderline, narcissistic, obsessive-compulsive, avoidant, and dependent personality traits.

To quantify the pain level experienced by each patient, a Likert scale for pain was applied consisting of five negative points (0 - 4), one neutral (5), and five positive points (6 - 10), where the patient had to indicate his or her level of pain according to intensity, through an ordered and unidimensional scale.

When found with positive results, they were classified as predominant personality traits; given that the tool is not for diagnosis, a personality disorder diagnosis was not performed.

For the statistical analysis, each person was initially classified by personality trait, taking four or more unexpected responses as a cut-off point. To do this classification, a digital tool was created with C++ programming language, in which the data obtained from the questionnaire were entered, obtaining the classification for each patient. From this classification, 10 variables were created (one for each trait), with the results.

Subsequently, a matrix was created in the statistical analysis program Statistical Package for the Social Sciences version 26, where the data were digitized for analysis. Qualitative variables were analyzed by means of absolute frequencies and quantitative variables were analyzed through measures of central tendency and dispersion. The data were presented in tables and figures, as appropriate to the nature of the results.

Prior to data collection, permission was granted by the hospital management officials and each patient was invited to participate, information of the objective of the study was provided, and expressly clarified that participation was completely voluntary. Each participant read and signed the informed consent form. The data obtained were for the exclusive use of the researchers. The database was anonymized and safeguarded by the researchers. The research protocol was evaluated and approved by the Health Research Ethics Committee of the General Hospital of the Salvadoran Social Security Institute through approval letter 537P218MO21.

Results

Of the total number of patients (60), 40 were women. The average age is 46 years, with a minimum of 18 and a maximum of 78. The age group with the highest number of patients (17 patients) is 41 to 50 years, followed by 51 to 60 years with 14 patients. Figure 1 shows the age distribution according to the sex of the patient.

Table 1 details the symptoms of somatoform disorder distributed by sex. Women reported a higher number of symptoms than men. The most commonly reported symptoms were pain in the legs or arms (39), headaches (36), nausea (34) and dry

mouth (33). In the distribution by sex, the symptoms (excluding back pain) most frequently reported by men were pain in legs or arms (14), nausea (13), and joint pain (13), while by women, they were also pain in legs or arms (25), in addition to headaches (24) and stomach pain (22).

Table 2 shows the symptoms of anxiety crises distributed by sex. It was found that, for both men and women, the most frequently experienced symptoms were unpleasant sensations or numbness or tingling (35), loss of touch or sensation of pain (19), and double vision (15).

Table 3 shows the symptoms excluding somatoform disorder distributed by sex. It is evident that, for the common symptoms between sexes, 12 patients reported amnesia, while only three reported loss of consciousness, and one presented convulsive episodes (described in the instrument as "seizures"). Among menstrual symptoms, the most common were painful menstruation (12 women) and irregular menstruation (10 women). Only five men reported erectile or ejaculatory dysfunction.

Screening for Somatoform Symptoms 2

Within the classification by severity of the disorder, seven patients did not meet diagnostic criteria for the somatoform disorder, nine had mild disorder, 11 had moderate severity, and 33 described severity of the disorder.

According to the SOMS-2 scale, 28 patients had eight or more symptoms, five presented seven symptoms, 14 between four and six symptoms, and three patients had less than four symptoms.

Of the 28 patients with eight or more symptoms, 20 are female; of the patients with seven symptoms, eight are male; of the patients with between four and six symptoms, 11 are female; and of the patients with fewer than four symptoms, two are female and one is male.

The frequency of visits that patients made to the doctor due to their symptoms, data showed that 15 patients made one to two visits, 20 patients made between three and six visits, 15 patients made between six and 12 visits, and 10 patients made more than 12 visits.

According to the time of symptom evolution for somatoform disorder, the most frequent was greater than two years, in 33 patients; followed by the period between one and two years of symptom development which was recorded in 12 patients; nine patients reported symptoms between six months and one year, and finally, six patients reported a symptomatic evolution time of less than six months.

The diagnosis of somatoform disorder had previously been made in 12 patients, who reported four to six symptoms; 14 patients, seven symptoms, and 27 reported eight or more symptoms, while four patients who reported four or more symptoms did not meet enough criteria for the diagnosis of somatoform disorder. Three patients reported

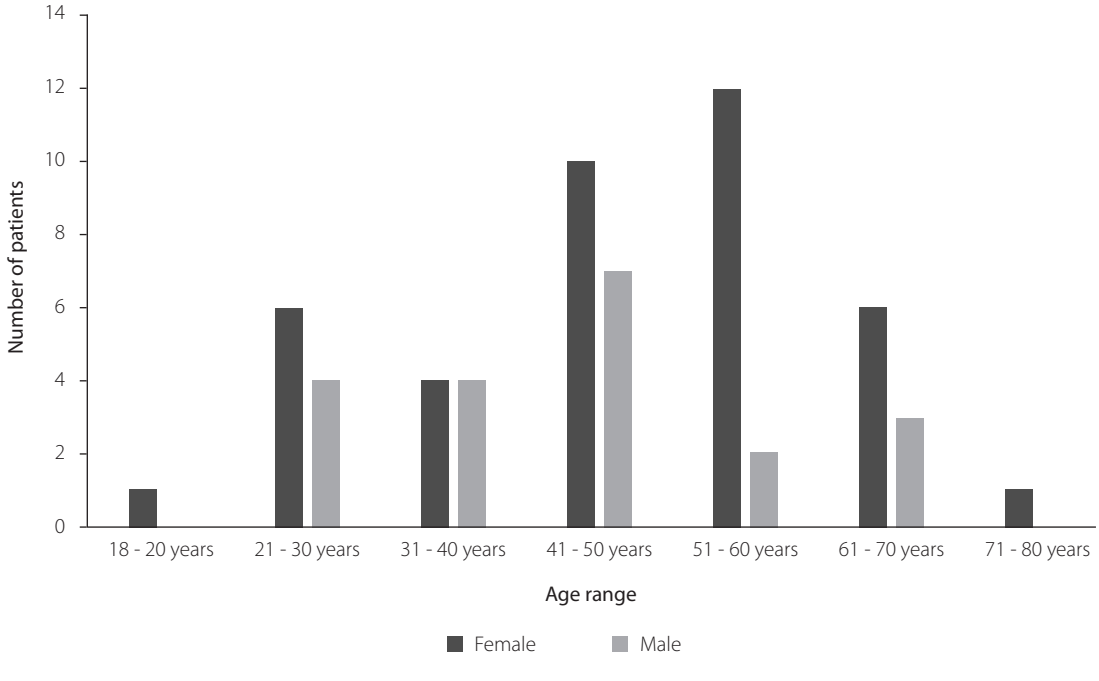

Figure 1. Distribution by age according to sex of patients with chronic low back pain admitted to the neurosurgery service of the General Hospital of the Salvadoran Social Security Institute. August-October 2021

Table 1. Somatoform disorder symptoms distributed by sex of patients with chronic low back pain admitted to the neurosurgery service of the General Hospital of the Salvadoran Social Security Institute, August-October 2021.

Somatoform disorder symptoms	Men	Women	Total
Headache	12	24	36
Stomach pain	6	22	28
Joing pain	13	17	30
Pain in legs or arms	14	25	39
Chest pain	7	11	18
Pain in the anus	4	4	8
Pain during sexual intercourse (coitus)	4	10	14
Pain during urination	4	9	13
Nausea	13	21	34
Swelling or bloating	10	20	30
Discomfort around the heart area	6	13	19
Vomiting	7	11	18
Gastric reflux	9	21	30
Hiccups or burning sensation in the chest or stomach	6	9	15
Food intolerance	2	9	11
Loss of appetite	7	13	20
Bad taste in the mouth, or pasty tongue	12	14	26
Dry mouth	12	21	33
Frequent diarrhea	2	9	11
Fluid discharge from the anus	1	1	2
Frequent urination	5	8	13
Frequent bowel movements	2	7	9
Severe palpitations	10	19	29
Upset stomach or feeling sick to the stomach	10	17	27
Sweating (hot or cold)	7	17	24
Flushing or redness	4	10	14
Shortness of breath (without prior exertion)	7	9	16
Painful breathing or hyperventilation	3	6	9
Excessive tiredness or mild exertion	5	15	20
Skin stains or discoloration	5	7	12
Sexual indifference (loss of libido)	4	12	16
Unpleasant sensations in or around the genitals	4	7	11
Difficulty with coordination or balance	9	13	22
Paralysis or localized weakness	7	11	18

Table 2. Anxiety crisis symptoms distributed by sex of patients with chronic low back pain admitted to the neurosurgery service of the General Hospital of the Salvadoran Social Security Institute, August-October 2021.

Anxiety crisis symptoms	Men	Women	Total
Difficulty swallowing	5	8	13
Aphonia (loss of voice)	4	9	13
Urinary retention	4	5	9
Hallucinations	2	1	3
Loss of touch or sensation of pain	9	10	19
Unpleasant sensation or numbness or tingling	12	23	35
Double vision	5	10	15

four or fewer symptoms, all of whom did not meet the diagnosis of somatoform disorder.

No patient reported mild pain; however, 12 patients had moderate pain, 14 had severe pain, 19 had very severe pain, and 15 patients reported the worst pain imaginable.

The International Personality Disorder Examination

The personality traits more prevalent in the study sample were obsessive-compulsive (31 patients), borderline (21 patients), paranoid (21 patients), avoidant (19 patients) and histrionic (17 patients). It was observed that, of the total number of patients with obsessive-compulsive traits, 20 matched with severe severity of somatoform disorder, 19 with borderline traits, 14 with paranoid traits, 11 with avoidant traits, and 10 with histrionic traits reported characteristics of severe severity of somatoform disorder.

Table 4 shows the number of patients according to pain intensity and personality traits. Ten patients with obsessive-compulsive personality traits presented the worst pain imaginable, and eight paranoid patients also exhibited the worst pain imaginable.

Discussion

The study aimed to establish the number of patients treated for chronic low back pain who suffer from somatoform disorder in the neurosurgery service of the ISSS General Hospital over a period of three months. In addition, the different personality traits that characterize them were also identified.

Table 3. Exclusionary symptoms distributed by sex of patients with chronic low back pain admitted to the neurosurgery service of the General Hospital of the Salvadoran Social Security Institute, August-October 2021.

Excluding symptoms	Men	Women	Total
Blindness	3	4	7
Deafness	3	2	5
Seizures	1	0	1
Amnesia (memory loss)	3	9	12
Loss of consciousness	1	2	3
Painful menstruation	Not applicable	12	12
Irregular menstruation	Not applicable	10	10
Excessive menstrual bleeding	Not applicable	7	7
Continued vomiting during pregnancy	Not applicable	1	1
Unusual or heavy vaginal discharge	Not applicable	1	1
Erectile or ejaculatory dysfunction	5	Not applicable	5

Table 4. Types of personality traits distributed according to the Likert scale score for pain in patients admitted to the neurosurgery service of the General Hospital of the Salvadoran Social Security Institute, August-October 2021

Personality traits	Likert scale score for pain				Total
	Moderate pain	Severe pain	Very severe pain	Worst pain imaginable	
Paranoid	3	3	7	8	21
Schizoid	5	4	2	0	11
Schizotype	3	0	0	1	4
Histrionic	4	3	8	2	17
Antisocial	3	1	0	0	4
Narcissistic	2	2	3	0	7
Borderline	0	4	8	9	21
Obsessive compulsive	4	8	9	10	31
Dependent	1	1	2	3	7
Avoidant	0	6	4	9	19

No patient reported Likert scale scores compatible with the "no pain" and "mild pain" categories, therefore they are not included in the table.

Also it was found that most patients with chronic low back pain presented somatoform disorders at different levels of severity. Similarly, half of them presented obsessive personality traits, while a smaller group presented borderline personality traits or paranoid traits. However, there is no study currently available to compare these results with.

The majority of patients were women and identifying a wide range concerning age distribution, it was found that a higher number of patients were between 41 and 60 years old. These results are comparable with the research carried out by Meucci *et al.*, through a systematic review, which reported up to a 50 % higher prevalence of chronic low back pain in women than in men and a higher prevalence in the age range of 20 to 59 years.[xvii] Similarly, Thomas *et al.* reported that, of a total of 162 participants in the study on chronic low back pain, 57 % were women.[xviii] As an explanation for this distribution by sex, Pak has shown that being a woman, together with other features, is a significant risk factor for chronic pain.[xix]

Similarly, Thompson *et al.* reported that women consult significantly more than men for both physical and mental health causes, concluding that women are more active in both prevention and treatment than men.[xx] Meints *et al.* similarly observed sex differences in more dynamic models of experimental pain, such as temporal summation, more pronounced in women, and diffuse noxious inhibitory controls (DNIC), a form of endogenous pain modulation in which the perception of a painful stimulus is attenuated by a pain stimulus applied at a remote site. Several studies indicate that the DNIC response is more pronounced in men than in women, suggesting better functioning of the endogenous pain inhibitory system among men.[xxi]

Moreover, the majority of patients exhibited personality traits consistent with the somatoform disorder diagnosis, regardless of severity. In addition, when pain intensity was quantified by scoring on a Likert pain scale, it reported that the most frequently described pain intensity by patients was severe pain.These findings are in agreement with Samuelly-Leichtag *et al.* and Henker *et al.*, who proposed that certain aspects of personality, such as catastrophizing, conditioned pain modulation, and gender, contribute to the increased perception of pain intensity in patients with chronic low back pain.[xxii,xxiii]

Regarding personality traits, among the patients in this study, obsessive-compulsive personality traits were found most frequently, followed by paranoid traits, borderline traits, avoidant traits, and histrionic traits. Poloni *et al.* report in their study of patients with somatoform disorder that this is associated with high prevalences of mental disorders, mainly anxiety and personality disorders.[xxiv] They also conclude that a personality disorder in patients with medically unexplained symptoms significantly increases the probability of also having a somatoform disorder.

In 2018, Herzog *et al.* identified that most patients with somatoform disorder reported between two and five medical visits for their symptoms, as well as a long evolution of symptoms, even up to 15 years before their diagnosis.[xiii] The results found in this study agree with the above, evidenced by the fact that one-third of the patients reported having consulted for their symptoms between three and six times, with a lower distribution among the other ranges. Also, it showed that approximately one-third of the patients have suffered from symptoms compatible with somatoform disorder for more than two years.

This study shows that more than half of the patients have at least one anxiety symptom; these results are higher than those obtained by Piontek *et al.*, who found 25 % of patients with anxious characteristics. It may be related to the fact that the study was conducted with hospitalized patients with acute pain.[xxv]

Poloni *et al.* propose that the total number of somatic symptoms reported by patients with somatoform disorder is a predictor of disability,[xxiv] even being considered one of the diseases that leads to the highest percentage of disability worldwide, as well as to increased hospital costs. These findings are consistent with this study, which showed that most patients reported seven or more symptoms of somatoform disorder, resulting in a high degree of physical and mental discomfort, as well as leading to significant disability.

The difficulty of the study was related to the quality of the information provided by the patients, given that it depended on the data they remembered at the time of filling out each scale, which could generate information bias, as well as selection bias, if the number of symptoms or characteristics reported as positive was higher or lower than the actual number.

Given the close relationship between mental pathology and spinal pathology, it would be of great benefit to implement general screening measures for mental health disorders in patients admitted with spinal pathology. Roon-Cassini *et al.* state that timely screening and treatment of post-

traumatic stress disorder and depression can improve institutional outcomes.[xxvi]

Similarly, it is crucial to implement an early psychological assessment evaluation and, if necessary, a psychiatric one in patients with low back pain with scales for depression, anxiety, and somatoform disorder such as those used in this study to be able to analyze patients with low back pain. It would enhance the detection of conditions that merit psychological or psychiatric management and improve the postoperative outcome of patients who undergo surgery.

Further research is recommended to study the somatoform syndrome combined with a specific assessment of personality, with the potential to perform tests with greater sensitivity and specificity, and adequate time for their evaluation and a larger population to identify the prevalence of somatoform and personality disorders, in addition to the factors that contribute to the increase of these health problems in the population.

Conclusions

Patients with chronic low back pain who require hospital admission present a high frequency of somatoform disorders, characterized mainly by leg or arm pain, headaches, and nausea; in addition, these patients present obsessive-compulsive, borderline, and paranoid personality traits. Timely detection of cases can help to take action according to their needs and well-being and to ensure that healthcare professionals are duly trained and equipped to respond.

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