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The role of stressful traumatic events, personality traits and psychiatric disorders in the formation of chronic pain syndromes

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ABSTRACT

BACKGROUND: Chronic pain syndrome is a highly prevalent condition that negatively affects the ability to work and quality of life, as well as worsening the prognosis of the disease and increasing the risk of early death. One of the most important scientific and practical medical tasks is the identification of risk factors for the transition of acute pain to chronic pain, which in the future will allow to develop mechanisms for preventing the development of chronic pain. It has been established that various psychological and psychopathological factors, in particular, personality traits and mental disorders, psychotraumatic events, make a significant contribution to the perpetuation of pain, but these data require clarification.

AIM: To determine the contribution of stressful events, personality profile and comorbid psychiatric disorders to the formation of chronic pain syndromes.

MATERIALS AND METHODS: The study included 105 patients aged 18 to 70 years with unexplained somatic or neurological pain syndrome that existed for more than 6 months and served as a reason for hospitalization. All patients underwent clinical-anamnestic and psychometric examination, statistical processing of the results was performed using SPSS Statistics v22.

RESULTS: In the course of the study, 4 groups of patients with psychiatric disorders comorbid with chronic pain were formed: 1 — chronic pain within the framework of prolonged reaction to stress\exhaustion disorder, 42 observations (12 men, 30 women); 2 — chronic pain within the framework of prolonged masked depressive episodes, 41 observations (6 men, 35 women); 3 — chronic pain as part of hypochondriacal spectrum disorders (limited hypochondria), 15 observations (8 men, 7 women); 4 — chronic pain as part of constitutional anomalies with a tendency to experience pain (pain prone personality), 7 observations (5 men, 2 women).

CONCLUSION: A significant association of chronic pain syndromes with stressful events has been established.

Keywords: chronic pain; psychic trauma; anxiety disorder; depression; hypochondria.

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Роль психотравмирующих событий, личностных особенностей и психических расстройств в формировании хронических болевых синдромов

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АННОТАЦИЯ

Обоснование. Хронический болевой синдром — распространённое состояние, негативно влияющее на трудоспособность и качество жизни, а также ухудшающее прогноз заболевания и увеличивающее риск ранней смерти. Одна из важнейших научно-практических медицинских задач — идентификация факторов риска перехода острой боли в хроническую, что в перспективе позволит разработать механизмы превенции развития хронической боли. Установлено, что существенный вклад в хронификацию боли вносят различные психологические и психопатологические факторы, в частности личностные особенности и психические расстройства, перенесённые психотравмирующие события, однако эти данные требуют уточнения.

Цель. Установить вклад в формирование хронических болевых синдромов психотравмирующих событий, личностного профиля и коморбидных психических расстройств

Материалы и методы. В исследовании приняли участие 105 пациентов в возрасте от 18 до 70 лет с необъяснимым соматически или неврологически болевым синдромом, существовавшим более 6 мес и ставшим основанием для госпитализации. Всем пациентам проводили клинико-анамнестическое и психометрическое обследование. Статистическая обработка результатов выполнена с помощью SPSS Statistics v22.

Результаты. В ходе исследования были сформированы 4 группы пациентов с психическими расстройствами, коморбидными хронической боли: первая — хронические боли в рамках затяжной реакции на стресс/расстройства истощения (exhaustion disorder), 42 наблюдения (12 мужчин, 30 женщин); вторая — хронические боли в рамках затяжных маскированных депрессивных эпизодов, 41 наблюдение (6 мужчин, 35 женщин); третья — хронические боли в рамках расстройств ипохондрического спектра (ограниченная ипохондрия), 15 наблюдений (8 мужчин, 7 женщин); четвёртая — хронические боли в рамках конституциональных аномалий со склонностью к переживанию боли (уязвимые к боли, pain prone personality), 7 наблюдений (5 мужчин, 2 женщины).

Вывод. Установлена существенная ассоциация хронических болевых синдромов с перенесёнными психотравмирующими событиями.

Ключевые слова: хроническая боль; психотравма; тревожное расстройство; депрессия; ипохондрия.

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Хроник авырту синдромнарын формалаштыруда психотравматик вакыйгаларның, шәхес үзенчәлекләренең һәм психик тайпылышларның роле

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АННОТАЦИЯ

Нигезләмә. Хроник авырту синдромы — эшкә сәләтлелеккә һәм тормыш сыйфатына тискәре йогынты ясый, вакытыннан алда үлемгә китерә торган киң таралган халәт. Иң мөһим фәнни-гамәли медицина бурычларының берсе-кискен авыртуның хроник авыртуга күчү куркынычы факторларын идентификацияләү. Бу киләчәктә хроник авыртуның үсешен үзгәртү механизмнарын булдырырга мөмкинлек бирәчәк. Авыртуны хронификацияләүгә төрле психологик һәм психопатологик факторлар, аерым алганда, психотравматик вакыйгалар кичергән шәхес үзенчәлекләре һәм психик тайпылышлар зур өлеш кертә, әмма бу мәгълүматлар әлегә төгәлләүне таләп итә.

Максат. Психотравматик вакыйгаларның хроник авырту синдромнарын, шәхес профилен һәм коморбид психик тайпылышларны формалаштыруга керткән өлешен билгеләү.

Материалы һәм ысуллар. Тикшеренүдә ачык аңлашылмаган соматик яки неврологик авырту синдромлы 18 яшьтән 70 яшькә кадәрге 105 пациент катнашкан. Әлеге халәт аларда 6 айдан артык күзәтелеп, хастаханәгә яту өчен нигез булып торган. Барлык пациентларга клиник-анамнестик һәм психометрик тикшерү үткәрелгән. Нәтиҗәләрне статистик эшкәртү SPSS Statistics v22 ярдәмендә башкарылган.

Нәтиҗәләр. Тикшеренү пациентларны 4 төркемгә туплап алып барыла: беренчесе — стресс/арыганлык тайпылышларына карата озакка сузылган реакция кысаларындагы хроник авыртулар (exhaustion disorder), 42 күзәтү (12 ир-ат, 30 хатын-кыз); икенчесе — озакка сузылган маскировкаланган депрессия эпизодлары кысаларындагы хроник авыртулар, 41 күзәтү (6 ир-ат, 35 хатын-кыз); өченчесе — гипохондрия спектры бозылулары кысаларындагы хроник авыртулар (чикле гипохондрия), 15 күзәтү (8 ир-ат, 7 хатын-кыз); дүртенчесе — авыртуны эчтән кичерүчән, конституция аномалияләре кысаларындагы хроник авыртулар (авыртуга бирешә торган, йомшак, pain prone personality), 7 күзәтү (5 ир-ат, 2 хатын-кыз).

Йомгак. Хроник авырту синдромнарының психотравматик вакыйгалар белән сизелерлек җитди ассоциациясе ачыклана.

Төп төшенчәләр: хроник авырту; психотравма; борчылу; депрессия; гипохондрия.

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BACKGROUND

Chronic pain is one of the most significant issues of modern medicine [1, 2]. Numerous recent publications have emphasized the high prevalence of chronic pain syndromes, their negative impact on working capacity and quality of life, as well as the significant economic burden associated with the chronicity of pain [3–6].

Large-scale cross-sectional studies have demonstrated that approximately 10% of the population in developed countries suffers from chronic pain, and the annual expenditure associated with the care of these patients amount to more than 500 billion dollars [7]. Furthermore, chronic pain is associated with a significant deterioration in the general prognosis, including a higher risk of early death [8].

Currently, there are clear trends toward identifying common pathogenic mechanisms and clinical features of chronic pain of various origins. Morphological studies have demonstrated that regardless of the cause of chronic pain (e.g., migraine and fibromyalgia), it is characterized by similar structural changes in the brain, including a decrease in the gray matter density and changes in the cortical representation of sensory zones [9]. Clinically, the commonality of chronic pain syndromes of various origins is emphasized by their similar therapeutic approaches, in particular the effectiveness of such classes of drugs as antidepressants and normothymic drugs, as well as the effectiveness of psychotherapy [10].

The accumulation of such data resulted in chronic pain being included as a separate category in the International Classification of Diseases, 11th revision. Chronic pain is divided into primary pain (occurring independently) and secondary pain (associated with cancer or postoperative genesis) [11].

An important scientific and practical medical task regarding chronic pain is the identification of risk factors for the transition of acute pain to chronic pain. This could aid in the development of approaches for the prevention of chronic pain. Studies have revealed a wide range of psychological and psychopathological factors associated with the chronification of pain. The risk of developing chronic pain is significantly higher in patients with alexithymia [12], certain personality traits [13], mental disorders such as anxiety and depressive disorders [14, 15], history of traumatic events [16], and high levels of social stress [17]. However, the assessment of the specific weight of individual factors is ambiguous. Furthermore, it is impossible to identify integrative studies among the available literature that comprehensively approach the interaction of personality factors, mental disorders, and history of traumatic events [18]. Thus, in this study, we aimed to establish the contribution of psychotraumatic events, personality profiles, and comorbid mental disorders in the development of chronic pain syndromes.

MATERIALS AND METHODS

This study was conducted at the A.Ya. Kozhevnikov Clinic of Nervous Diseases from 2019 to 2022. The following were the inclusion criteria: signed informed consent, age of 18–70 years, and an unexplained somatic or neurological pain syndrome that has been present for at least 6 months and is the main reason for hospitalization. The following were the exclusion criteria: a severe somatic, neurological, or psychiatric condition that prevented a comprehensive psychopathological examination or the identification of a well-explained somatic or neurological cause for the chronic pain syndrome.

During the study, a form developed specifically for this study was used when assessing each individual. The form included questions regarding sociodemographic parameters, personality traits, nature of stressful events experienced by the patient, and diagnostic features of the pain syndrome. To assess the contribution of psychotraumatic events in the development of chronic pain syndromes, a previously tested approach was used on the basis of the author's questionnaire [18].

For psychometric verification of the clinical data obtained, a battery of psychometric methods was used, including the Hamilton rating scale for anxiety (HAM-A), Hamilton rating scale for depression (HAM-D), visual analogue scale (VAS) for pain, short form-36 health survey questionnaire (SF-36), and the structured clinical interview for DSM-III axis II (SCID-II).

All statistical analyses were performed using SPSS Statistics (version 22). The normality of data distribution was assessed using the Kolmogorov–Smirnov test. The data are presented as means and standard deviations or medians and interquartile ranges. Differences between the normally distributed data were assessed using the Student's *t*-test and Bonferroni correction. The statistical significance in the study was set at $p < 0.05$.

The study was approved by the Ethics Committee of Sechenov University (No. 14–19; dated 10/09/2019).

RESULTS

a total of 105 patients were finally included in the study. The main sociodemographic characteristics of the study participants are included in Table 1.

The most common psychotraumatic event that preceded the development of chronic pain syndrome was the loss of a loved one (*n*=26, 24.7%), followed closely by illness[1] and stress at work (Fig. 1). Only a small proportion of patients were unable to identify the psychotraumatic event that, in their opinion, preceded the development of chronic pain syndrome (*n*=7, 6.6%).

[1] In accordance with the research methodology, this category included patients in whom it was not possible to determine a reliable cause-and-effect relationship between the disease/surgery and the development of chronic pain syndrome.

Table 1. Sociodemographic data of the study participants

Parameter	Number of patients (*n*=105)
Age, years	45.2±9.8
Sex:	
• Male	31 (29.5%)
• Female	74 (70.5%)
Education level:	
• Secondary and secondary vocational	37 (35%)
• Incomplete higher education	8 (7.6%)
• Completed higher education	56 (53.3%)
• Two or more academic degrees	4 (0.9%)
Employment status:	
• Working	41 (39%)
• Studying	2 (1.9%)
• Not working without disability registration	28 (26.6%)
• Disabled	17 (16%)
• Retired	17 (16%)
Family status:	
• Married (including civil)	59 (56.2%)
• Widowed	16 (15%)
• Divorced	10 (9.5%)
• Never married	20 (19%)
Income level:	
• Low	20 (19%)
• Average	67 (63.8%)
• High	18 (17%)

A detailed psychopathological and clinical analysis of the study participants revealed that the structure of comorbid mental disorders was heterogeneous, which enabled the identification of four main groups. The psychometric differences between the groups are presented in Table 2.

Group 1

Group 1 included patients with chronic pain due to a prolonged reaction to a stress/exhaustion disorder (total, *n*=42; 12 men and 30 women). In all the patients in this group, pain manifested after a prolonged psychotraumatic situation or a situation causing prolonged emotional and physical stress. These situations may include a long-term illness of a close relative, prolonged and high emotional and intellectual stress at work, and an illness requiring long-term treatment and rehabilitation. In some patients, the long duration and severity of the psychotraumatic situation were comparable to those in patients with neurotic depressions recent studies [19, 20]. The average duration of the psychotraumatic situation in our study was 30.2±4.5 months. In all the patients, chronic pain manifested against the persistence of the current psychotraumatic situation.

The clinical presentation of the discussed mental disorders was characterized by rapid fatigue, a feeling of helplessness, mild depression, transient sleep and appetite disorders. Numerous physical symptoms were also observed, including pain and somatoform disorders such as heart rhythm instability, abdominal discomfort, dizziness, and itchy skin. However, the severity of symptoms was insufficient to establish a definitive diagnosis of a depressive episode or anxiety disorder. This was because none of the patients had vital disorders, persistent ideas of guilt, anhedonia, or other signs of an endogenous pathology.

The clinical data of Group 1 correlate with the obtained psychometric data. The indicators of depression and anxiety remained relatively unexpressed, with patients scoring 7.3±4.6 points on the HAM-A scale (possible anxiety disorder) and 11.4±3.7 points on the HAM-D scale (mild depressive disorder).

The chronic pain symptoms in Group 1 patients were a natural continuation and complication of the pre-existing pains. The vast majority (*n*=38, 90.5%) of the patients enrolled in the study had experienced episodic tension headaches and non-specific musculoskeletal pain. Due to stress, significant chronification of the pain occurred, and it acquired a persistent daily nature. Primary occurrence of chronic pain was rare. The pain was described relatively simply by the patients as a feeling of pressure, burning, and muscle spasm. The severity of pain was relatively mild, which was confirmed by the average VAS score of 4.2±1.7 points (borderline between mild and moderate pain).

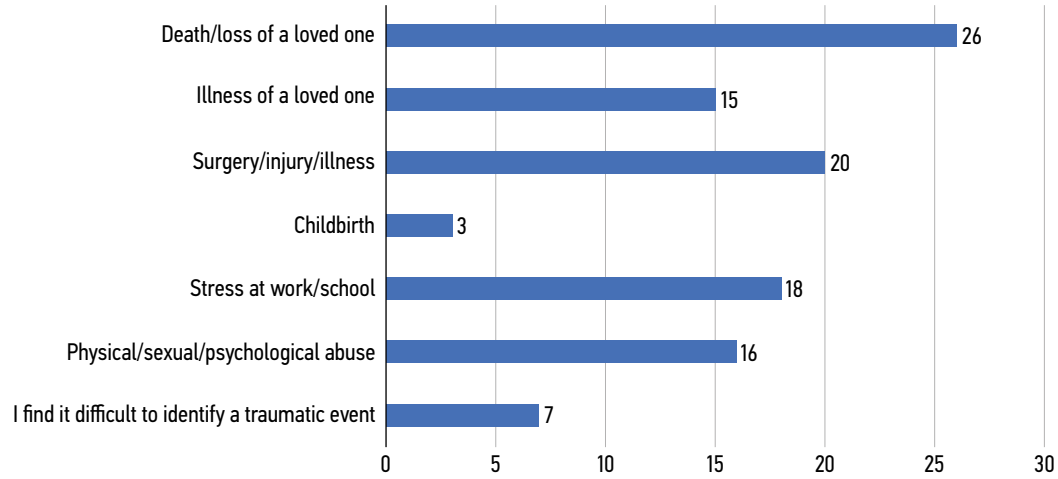

Fig. 1. Distribution of the nature of psychotraumatic events that preceded the formation of chronic pain syndrome.

Table 2. Psychometric parameters of each study group

Parameter	Group 1 (*n*=42)	Group 2 (*n*=41)	Group 3 (*n*=15)	Group 4 (*n*=7)
HAM-A	7.3±4.6	19.5±7.8	14.3±4.2	8.5±2.1
HAM-D	11.4±3.7	21.8±6.2	5.1±2.2	6.2±3.2
VAS	4.2±1.7	5.2±2.1	8.7±2.1	8.3±2.7
SCID-II (number of patients with diagnosed personality disorder):				
• Avoidant	13 (30.9%)	5 (12.2%)	0 (0%)	1 (14.3%)
• Dependent	9 (21.4%)	6 (14.6%)	0 (0%)	0 (0%)
• Obsessive-compulsive	7 (16.6%)	2 (4.8%)	2 (13.3%)	0 (0%)
• Passive-aggressive	2 (4.7%)	4 (9.7%)	0 (0%)	0 (0%)
• Depressive	4 (9.5%)	6 (15%)	0 (0%)	1 (14.3%)
• Paranoid	0 (0%)	5 (12.2%)	8 (53.3%)	0 (0%)
• Schizotypal	0 (0%)	1 (2.4%)	4 (26.6%)	4 (57.1%)
• Schizoid	0 (0%)	2 (4.8%)	1 (6.6%)	3 (42.8%)
• Histrionic	11 (26.1%)	17 (41.4%)	1 (6.6%)	4 (57.1%)
• Narcissistic	3 (7.1%)	2 (4.8%)	2 (13.3%)	0 (0%)
• Borderline	1 (2%)	3 (7.3%)	0 (0%)	0 (0%)
• Dissocial	0 (0%)	1 (2.4%)	3 (20%)	0 (0%)

The personality profile of the Group 1 patients was characterized by the reliable accumulation of patients who were anxious, dependent, and histrionic. Analysis of the somatoperceptual accentuation of the patients in Group 1 revealed a complete absence of somatotonics and a significant number of patients with a neuropathic constitution (*n*=27, 64%). Thus, a neuropathic constitution can be considered a mediator of the impact of chronic stress on the physical state.

Group 2

Group 2 included patients with chronic pain within a protracted concealed depressive episode (total, *n*=41; 6 men and 35 women). Compared to Group 1, patients in Group 2 noted a simultaneous, mainly acutely, development of chronic pain and affective symptoms after an obvious and pronounced psychoemotional stress, such as the death of a close relative, sudden dismissal from work, or robbery on the street. On an average, the interval between the moment of mental trauma and the manifestation of pain symptoms was less than one month, which differs from the dynamics in patients with exhaustion disorder. Only in two patients (4.8%), autochthonous manifestation of depressive symptoms and pain was observed. However, despite extensive questioning, the triggers for the development of mental illnesses could not be identified.

The clinical structure of the group's conditions correlate to the affective pathology that developed. Behind the facade of pain symptoms, most patients exhibited depressive symptom complexes such as persistent depression, anhedonia, and typical depressive denotation. Approximately 49% of the patients (*n*=20) exhibited a phenomenon of regular daily rhythm and persistent deterioration in well-being in the morning hours. The depressive episodes were characterized by the predominance of melancholy (*n*=11, 27%) and anxious depressive states (*n*=17, 41%). The average duration of a depressive episode at the time of inclusion in the study was 8.4±2.3 months.

Analysis of the anamnestic data revealed that most of the patients (*n*=29, 71%) in Group 2 had previously experienced persistent depressive moods and were diagnosed to have recurrent depressive disorder. In the remaining patients (*n*=12, 29%), the presenting depressive episode was the first. Manifestations of pain in patients with bipolar spectrum disorders were not noted. The personality profile in this study is consistent with the previously described clinical features of depressive disorders observed in neurological practice [21].

In Group 2, the clinical data are consistent with the obtained psychometric data. The scores of both the HAM-D (21.8±6.2 points, severe depressive disorder) and HAM-A (19.5±7.8 points, moderate anxiety) scales were the maximum and were significantly higher than those in the other groups (p <0.01 for all comparisons).

The typical characteristics of the pain in Group 2 were persistent, daily, dull, pressing pain in the chest or head in addition to episodic acute attacks of piercing and burning pain. The pain usually intensified in the morning and afternoon. All patients with localized pain in the head (*n*=27, 66%) exhibited a tendency to develop general symptoms with cognitive impairment in the depressive episode. The patients complained of a feeling of "unclearness" and "heaviness" in the head, difficulty concentrating, and increased algic phenomena when performing mental work. The presence of transient pain syndromes in Group 2 patients was less typical. Only 14 patients (34%) reported episodic pain. The total VAS score in Group 2 was 5.2±2.1 points, which correlates with the moderate pain symptoms.

The personality profile of the patients in Group 2 was characterized by a predominance of affective personality

disorders, with both pure hyperthymic (*n*=7, 17%) and hysterohyperthymic (*n*=17, 41%) personalities, as well as constitutionally depressive disorders (*n*=6, 15%). The clinically identified personality profile correlated well with the SCID-II results, with the exception of the hyperthymic disorder, which was absent. The hyperthymic disorder was classified as narcissistic personality in two patients and dissocial personality in one patient. The personality disorder in the remaining patients with clinical hyperthymic disorders was not psychometrically determined. The somatoperceptual profile in Group 2 was not specific. Both neuropaths (*n*=7, 17%) and somatotonics (*n*=9, 22%) were identified.

Group 3

Group 3 included patients with chronic pain with hypochondriasis spectrum disorders (limited hypochondria) (total, *n*=15; 8 men and 7 women). The pain in this group differed significantly from that of Groups 1 and 2 in terms of its dynamics and association with psychological trauma. Although all the patients in Group 3 associated their pain syndromes with one or another form of psychological trauma, its true role remains debatable. Patients reported that the pain bothered them for a long time after the psychological trauma had occurred (average duration, 76.4±32.4 months). However, the regression of the severity and persistence of symptoms, which may be expected several years after a single stress event, was not observed in any patient.

The most typical forms of psychological trauma in Group 3 were illness or surgery, childbirth, and severe acute stress at work or in the family. In all patients, the pain symptoms developed acutely, within hours or days after the psychological trauma. Subsequently, there was no significant change in the severity of pain. Thus, the relationship between chronic pain and psychological trauma in Group 3 remained questionable.

Clinically, these patients exhibited overvalued ideas of a hypochondriacal nature, with a persistent fixation on the existing pain symptoms and an obsession with eliminating them at any cost. Hypothymia was not detected in this group. Furthermore, most patients noted an increased level of vigor and activity, which did not reach a manic state.

The psychometric profile of Group 3 patients was characterized by the absence of depressive symptoms (5.1±2.2 points on the HAM-D scale) and the presence of pronounced anxiety symptoms (14.3±4.2 points on the HAM-A scale). Nonetheless, clinically, the HAM-A score in this group did not reflect the pure anxiety symptoms. However, it did reflect the overvalued coverage of the patients in question.

The characteristics of pain in this group were consistent with the earlier descriptions of limited hypochondria [22]. Patients complained of persistent, monomorphic, and severe pain localized to limited areas of the body such as the head, chest, or pelvic organs. Most patients described the pain as "unbearable" and "extremely intense", which correlated with the VAS score of the group (8.7±2.1 points, severe pain).

The personality profile of Group 3 was characterized by the accumulation of patients with a cluster A personality according to DSM-IV. The patients primarily exhibited a paranoid personality disorder (*n*=8, 53.3%) and less often exhibited schizotypal personality disorder (*n*=4, 26.6%). The clinical manifestation in this group correlated with the SCID-II results. Furthermore, there was a distinct association between Group 3 and somatoperceptual accentuation of the somatotonia type (*n*=13, 87%). The presence of pain syndromes before the development of the current condition was uncommon in this group. Furthermore, patients reported consistently good health, love of physical activity, and good tolerance of physical ill-being [23].

Group 4

Group 4 included patients with chronic pain in whom constitutional anomalies with a tendency to experience pain (vulnerable to pain and pain prone personality) were observed (*n*=7; 5 men and 2 women). Compared to the other groups, Group 4 exhibited the least association with psychotraumatic events. Furthermore, five patients (71%) could not remember any significant psychological trauma that preceded the development of the chronic pain syndrome. In two patients, an extremely conditional impact of a psychotraumatic event was identified. In one patient, the pain initially appeared after a difficult childbirth, and in the other patient, the pain developed following a blow to the head without any signs of a traumatic brain injury. Compared to Groups 1, 2, and 4, Group 4 exhibited the longest duration of chronic pain and a typical long-term persistence of algic phenomena (average duration, 140.3±45.6 months).

Clinically, the patients in Group 4 reported abundant migratory pain sensations that did not have any medical explanation. Furthermore, unlike in the other groups, the patients in Group 4 rarely exhibited any other psychopathological symptoms and sought medical help multiple times. Additionally, they continued to function at a rather high level than patients in the other groups, and they did not require medications to improve their own emotional state. The severity of anxiety and depression was quite low in this group (HAM-A, 8.5±2.1 points, possible anxiety disorder; HAM-D, 6.2±3.2 points, no depression).

The pain symptoms in Group 4 exhibited the highest degree of heteronomia. The patients complained of persistent and difficult-to-describe pain sensations, such as the feeling of a tightening corkscrew in the pelvic area, a distending pressure in the head and eyes, and a migrating cooling burn in the chest and abdominal cavities. The VAS score demonstrated an extremely high pain intensity (8.3±2.7 points, severe pain), which contradicted with the clinically good adaptation of patients.

The personality profile of Group 4 was characterized by the predominance of patients with schizoid, hysteroschizoid and schizotypal disorders, which were consistent with the VAS

Table 3. Role of psychotraumatic events in the development of chronic pain syndromes

Group	Exhaustion disorder	Masked depressive phases	Limited hypochondria	Constitutionally pain-prone patients
Role of psychotraumatic event	The main cause of the development of mental disorder	A significant trigger for the manifestation or relapse of the depressive phase	Conditional challenge	Absent or conditional challenge
Temporary association between psychotrauma and chronic pain	Develops due to long-term psychotrauma	Acute onset after psychotrauma	Acute onset after psychotrauma	Absent in most patients
Typical psychotrauma event	Illness of a loved one or stress at work	Death of a loved one or dismissal	Illness, surgery, or stress at work	Conditional somatic harm

scores. Furthermore, all the patients in this group exhibited somatoperceptual accentuation of the proprioceptive diathesis type. They experienced various heteronomous bodily sensations throughout their lives, which were both algic and non-algic in nature. Thus, the patients in Group 4 may be constitutionally susceptible to the development of pain symptoms (pain prone personality) [13].

DISCUSSION

The present study is the first attempt at an integrative analysis of the role of psychotraumatic events, personality traits, and mental disorders in the development of chronic pain syndromes. The profile of psychotraumatic events in our study was generally comparable to that of patients who completed an online survey in a recently published pilot study [18].

In the current study, the impact of psychotraumatic events was not uniform, and it greatly depended on the personality traits, somatoperceptual accentuation, and psychopathological symptoms of the patient. Table 3 summarizes the role of psychotraumatic events in the different study groups. The identified groups form a continuum of sorts, and the role and significance of psychotraumatic events decreases as the group order increases.

The groups of patients in whom a psychotrauma significantly contributed to the development of chronic pain syndromes were significantly more numerous. Thus, the study's results demonstrate the need to work on psychotraumatic events to prevent chronic pain syndrome.

CONCLUSIONS

The study results demonstrate a significant association between chronic pain syndromes and a history of a psychotraumatic event. However, the contribution of psychotraumatic events appears to be inhomogeneous and is largely determined by the structure of comorbid mental disorders. The psychopathological heterogeneity identified in this study enables the construction of a continuum of pain syndromes, with stress-provoked conditions at one end and autochthonous manifestations at the other end. However, disorders manifesting due to a psychotrauma were significantly more common than those not induced by a psychotrauma. This indicates the possibility of the a relationship between chronic stress and mental disorders.

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