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RESILIENCE AND COPING-STRATEGY IN BACK CHRONIC PAIN SYNDROME PATIENTS

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Abstract

In the article presented the results of the empirical study of resilience and coping strategies in chronic back pain syndrome (CBPS) patients are given. The problem was investigated depending on the variant of affective arrangement of psychopathological symptomatology: anxiously depressive and sensitively hostile. The analysis of the distribution of the examined by the integral indicator of personal resilience confirmed the established tendency concerning its deficit due to lack of all its components in the index group, compared with the comparison groups. A comparative analysis of the indicators of groups with anxiously depressive and sensitively hostile variant of the affective arrangement of psychopathological symptomatology showed a statistically significant difference with the prevalence of low levels in the anxiously depressive group and almost uniform distribution of the indicators of low and average levels with a prevalence of the average level with a tendency to low in the sensitively hostile examined. The negative relationship of resilience with depression, hostility, stress and unproductive coping strategies has shown that a low level of resilience is associated with a more frequent assessment of CBPS patients the situation as dangerous, as a life-threatening one, and oneself - unable to control it. That is what leads to a stressful situation, passivity and avoidance.

Key words: **chronic back pain syndrome (dorsal pain syndrome, coping strategies, resilience, stress, involvement, control, risk acceptance.**

Problem definition and its relation to important scientific or practical tasks. Pain is not only a symptom of most diseases, but also a complex psychophysiological phenomenon that involves mechanisms of regulation and formation of emotions, motor, humoral and hemodynamic manifestations that form the pain syndrome. The International Pain Study Association (IASP) gave the following definition of pain: "Pain is an unpleasant sensory and emotional experience associated with existing or possible tissue damage or described in terms of such damage" [10]. Currently, chronic pain is considered as an independent disease, which is based on the pathological process in the somatic sphere and primary or secondary dysfunction of the peripheral and central nervous systems [11]. Chronic pain is one of the main symptoms that cause human suffering.

The problem of human resilience against life's difficulties has always attracted and attracts the attention of philosophers, physicians, psychologists. At the moment the theme of life sustainability, overcoming, optimal, constructive living of difficult life periods, chronic diseases is relevant and timely. Chronic pain affects a person's psychological health, provoking stress, neurosis, inadequate, often aggressive, hostile behavior, anxiety and depressive states.

At the danger to life, threat to social or psychological well-being of a person, the problem of his psychological stability in the face of difficulties is becoming urgent. The idea of vitality implies the optimal realization of a person's psychological capabilities in stressful, adverse life situations, "psychological survivability" and "enhanced efficiency" under these situations [4].

One way to deal with stress is through use of coping strategies that are both directly related to it and resilience. Coping represents conscious rational behavior aimed at eliminating a stressful situation. The functions of coping strategy or coping are directly related to the maintenance of external and internal human well-being, physical and mental health and satisfaction with social relations. Coping behavior does not depend only on personality, his thoughts, feelings and actions, but also on the situation itself, which can manifest at the behavioral, emotional and cognitive level [5, p.457].

The objective: to identify the components of resilience and coping strategies that can give an idea of the patients with chronic back pain adaptive capacity to overcome the disease.

Analysis of recent research and publications. Dysfunctional pain (DFP) which has been worrying patients for many years, attracted particular interest in recent years. It is believed that DFB occurs, exacerbates against the effects of cognitive or behavioral factors and is associated with various mental disorders (depression, anxiety, phobias, etc.). Clinical

and epidemiological studies show that 12 - 80% of chronic back pain (CBP) patients which results from musculoskeletal system lesion, suffer as well from depression and anxiety disorders [9].

The concept of resilience is based on the conceptual apparatus of existential humanistic psychology and applied psychology. They consider resilience as some existential courage, which allows a person to be less dependent on situational experiences, overcome constant baseline anxiety, which is actualized at the situation of uncertainty and need to choose.

Resilience is a system of contentions about oneself, the world, behavior that allow a person to withstand and effectively overcome stressful situations. In the same situation a highly resilienced person is less likely to experience stress and better cope with it. “Resilience” includes three relatively separate components: involvement, control, risk-taking. The notion of resilience is analogous to the concept of "courage to be", introduced by P. Tillich [7] within the framework of existentialism - a direction in psychology that proceeds from the uniqueness of a particular person's life. Existential courage implies a willingness to act against ontological anxiety, anxiety of loss of meaning, against feelings of "loneliness" (M. Heidegger). It is resilience that allows a person to endure physical and mental pain, insurmountable anxiety, accompanying choice of the future (unknown) rather than the past (immutability) in the situation of existential dilemma [3].

In A. M. Fominova's work "Personality Resilience" a detailed description of studies of the "hardiness" phenomenon is given. It is considered by the majority "in connection with the problems of stress, adaptation-disadaptation in society, physical, mental and social health " [8]. Scholars insist that in addition to the function of stress prevention, disability and the occurrence of somatic and mental illness, resilience can play a different role: it allows successfully cope with one’s own anxiety and stress, as well as anxiety and stress in other people.

In the works of scientists it was determined that in overcoming difficult life situations, a human uses a large arsenal of coping strategies, which are the most important forms of adaptation processes. The psychological well-being of both the individual and society as a whole depends on the individual preference of the coping strategy.

L. I. Antsiferova points to the important role of the ability to assess the situation, on which an adequate choice of coping strategies depends. The nature of the assessment largely depends on the person's confidence in his own control of the situation and the possibility of its change. The researcher introduces the term "cognitive evaluation", defining it as some kind of

activity of the person, namely "the process of recognizing the peculiarities of the situation, identifying its negative and positive sides, determining the content and meaning of what is happening" [1, p.7]. According to L. I. Antsiferova, how the mechanism of cognitive assessment works in a person depends on the strategies that a person will use in solving a difficult situation. The result of cognitive assessment is a person's conclusion about whether or not he can handle a given situation, whether he can control the course of events, or the situation is beyond the person's control. According to L. I. Antsiferova, if a subject regards the situation as under control, then he is inclined to apply constructive coping strategies for its solution [1].

Scientific substantiation of the research's methodology. Contingent and research methods. For the study of personal resilience and coping strategies during 2016 - 2019, 78 patients with CBPS (index group, IG) and 62 conditionally healthy persons (comparison group, CG) were examined. Psychodiagnostic methods were used. IG was divided into two subgroups, depending on the variant of affective arrangement of psychopathological symptoms - anxiety-depressive (IG1), perculiar to 43 persons (51.1%) and sensitive-hostile (IG2), which is found in 35 persons under examination (44, 9%).

According to the gender structure, IG consisted of 44 women (56.4%) and 34 men (43.6%). The comparison group (CG) consisted of 33 women (53.2%) and 29 men (46.8%).

IG was divided into two subgroups, depending on the variant of affective arrangement of psychopathological symptoms - anxiety-depressive (IG1) was presented by 43 persons (51.1%), of whom 33 were women (76.7%) and 10 (23, 3%) men and sensitive-hostile (IG2), which is found in 35 (44.9%) examined, of whom 11 are women (31.4%) and 24 - men (68.6%).

The criteria for inclusion in IG were:

a) PIC to participate in the study;

b) chronic back pain syndrome (CBPS) within the limits of heading M54.0-9 "dorsalgia" (ICD-10) lasting at least 3 months;

c) age from 20 to 65 years old;

d) absence of other serious somatic diseases;

e) lack of history of mental and behavioral disorders;

e) intensity of pain on visual analogue scale ≥ 4 points; on a digital rating scale ≤ 5 points (mild, moderate, moderate-severe pain); on a functional pain scale ≤ 2 points (allowable pain that does not interfere with activity, and allowable pain that interferes with the implementation of some activities).

Research Methods: Conversation, Interviews, Testing. Coping behavior was studied according to the method of S. Norman, D. F. Endler, D. A. James, M. I. Parker; an adapted version of T. A. Kryukova, which includes a list of predetermined responses to stress situations and aims to identify dominant coping-stress behavioral strategies [2]. This technique allows to explore 5 options for coping: 1. task-oriented, 2. emotion-oriented, 3. avoidance-oriented, 4. distraction scale, 5. social distraction scale.

In order to obtain a true picture of the respondents' individual and psychological characteristics, their resilience was also examined. Personal resilience as a psychological construct, according to the explanation of the authors of the modification and testing for the Russian-speaking sample of test S. Maddi, D. O. Leont'ev and O. I. Rasskazova, is understood as a system of beliefs about oneself, the surrounding world and relationships with It. It contributes to the reduction of internal stress in stressful situations due to the persistent hardy coping and their perception as less significant [3]. The integral indicators of resilience and its components such as involvement, control and risk acceptance have been examined with this methology.

Outline of the main research material with full justification of scientific results obtained. The analysis of the results of the study of personal resilience in CBPS patients and the comparison group revealed significant differences between them, both in its integral indicator and in its individual components (Tables 1-3).

According to the level of "involvement", the respondents were distributed as follows (Table 1). Low intensity was found in 82.1% of IG persons, intensity less than medium was in 17.9% of the persons under examination. There were no average or high indexes.

Table 1

Distribution of the respondents by "involvement" intensity

Amplitude of indexes	IG, n=78		IG1, n =43		IG2, n=35		CG, n=62		P IG1-IG2	p IG-CG
	Abs	%	Abs	%	Abs	%	Abs	%		
Low , <29 points	64	82.1	39	90.7	25	71.4	0	0.0	<0.05	<0.001
Less than average (29-37,9 points)	14	17.9	4	9.3	10	28.6	7	11.3	<0.05	<0.01
Over average (38-45 points)	0	0.0	0	0.0	0	0.0	40	64.5	-	<0.001
High (>45 points)	0	0.0	0	0.0	0	0.0	15	24.5	-	<0.05

In CG, the distribution was as follows: 11.3% of the total number of respondents in this group found intensity below average, 64.5% -above average, and 24.2% showed a high level of involvement.

Comparative analysis of IG and CG revealed significant differences at the level “below average” ($p < 0.01$) and at “high level” ($p < 0.05$). Statistically significant difference was also found at a low level ($p < 0.001$) and at a level “above the average” ($p < 0.001$).

The analysis and comparison of indicators of the two subgroups, depending on the variant of affective arrangement of psychopathological symptoms - anxiety-depressive (IG1) and sensitive-hostile (IG2). According to the level of "involvement", the respondents were divided as follows. Low intensity was found in 90.7% of IG1 and 71.4% of IG2; the level below the average was determined in 9.3% of the examined IG1 and in 28.6% of IG2. The difference found was statistically significant at both levels ($p < 0.05$). Subjects with levels above average and high were not found in both subgroups.

This component of personal resilience is defined as the belief that being involved in what is happening gives a person the maximum chance to find something worthy, interesting and important for the individual. The person with the developed component of involvement gets pleasure from own activity. In contrast, the lack of such conviction generates a sense of harassment, a sense of being "out of" life. In other words, involvement characterizes the effectiveness of human interaction with the outside world, is the basis of motivation for self-realization and underlies the ability of the individual to feel his own importance and allows actively engage in solving life's problems, despite the presence of stressful factors.

Thus, the absence of high and average values of “involment” with a tendency to its high values in IG persons caused their unwillingness and inability to self-fulfillment in any acceptable way, lack of sense of personal importance, inability to cope adequately with any life difficulties and construct adequate relations with others. This gave them the false notion that they were "out of real life" and caused discomfort.

The distribution of examined by the level of expression of "control" (Table 2) showed that in IG alow level dominated (79.5%). The level “below the average” was found in 17.9%, and “above the average” - in 2.6% of this group persons. High level is not defined.

In CG, the distribution was as follows. The examined with the level above-average (64.5%) predominate. No low level was detected. The level below the average was found in 9.7%, high - in 21% of the examined.

Table 2

Distribution of the subjects by the level of "control"

Amplitude of indexes	IG, n=78		IG1, n =43		IG2, n=35		CG, n=62		p IG1-IG2	p IG-CG
	Abs	%	Abs	%	Abs	%	Abs	%		
Low , <20 points	62	79.5	43	100	19	54.3	0	0.0	<0.001	<0.001
Less than average (20-29 points)	14	17.9	0	0.0	14	40	6	9.7	<0.05	<0.05
Over average(29-37 points)	2	2.6	0	0.0	2	5.0	43	69.3	-	<0.001
High (>37 points)	0	0.0	0	0.0	0	0.0	13	21	-	<0.05

Comparative analysis of IG and CG revealed significant differences at all levels. Statistically significant difference was set at a “low level” ($p < 0.001$) and a level “above the average” ($p < 0.001$). Significant difference was also found in the level “below the mean” ($p < 0.05$) and “high level” ($p < 0.05$).

The distribution of the investigated by the level of “control” expression showed the tendency of low indicators of resilience components in 100% of persons with anxiety-depressive symptoms (IG1).

The distribution of the subjects with sensory-hostile symptoms (IG2) showed predominance of low (54.3%) and below-average levels. Such persons account for 40% of the total. In 5.7% of the examined in this group a level above the average was revealed.

The difference found was statistically significant at low ($p < 0.001$) and below average ($p < 0.05$) level. High-level subjects were not found in both subgroups.

Control is the belief that the struggle allows one to influence the outcome of what is happening, even if that influence is not absolute and success is not guaranteed. A person with a highly developed component of control feels that he is choosing his own activity, his own way. The opposite of this - low rates - is a sense of ones helplessness. That is, it can be stated that the high expressiveness of the control component provides motivation for finding ways to influence stressful changes.

Analyzing the results of the “control” study, it can be stated that IG persons experienced its loss over their own lives. They are characterized by a state of helplessness and passivity, they do not have the personal resources for behavioral response, adequate to the

existing stress load, chronic pain. It should be noted that the subjects with sensory-hostile symptomatology (IG2) have a more developed control component, although it almost does not go beyond the level “below average”.

A similar tendency persisted in the distribution of the subjects according to the intensity of the third component of personal resilience - "risk acceptance" (Table 3).

Its low intensity was registered in 60.3% of IG persons. The level “below the average” was found in 35.9% of the respondents, “above the average”- in 3.8% of the total number of the examined in this group.

In CG, the distribution was as follows: 11.3% of this group persons found “below average”, 71% “higher than average”, and 17.7% had high levels on the "risk taking" scale. No low level was detected.

Significance of discrepancies between IG and CG - p <0,01 - at low level and level “above average”; p <0,05 - below average and p <0,01 - at high level.

Table 3

Distribution of the persons under study by the level of “risk taking”

Amplitude of indexes	IG, n=78		IG1, n =43		IG2, n=35		CG, n=62		p IG1-IG2	p IG-CG
	Abs	%	Abs	%	Abs	%	Abs	%		
Low , <9 points	47	60.3	43	100	4	11.4	0	0.0	<0.001	<0.001
Less than average (9-14 points)	28	35.9	0	0.0	28	80	7	11.3	<0.05	<0.05
Over average (14-18 points)	3	3.8	0	0.0	3	8.6	44	71	-	<0.001
High (>18 points)	0	0.0	0	0.0	0	0.0	11	17.7	-	<0.01

According to the level of “risk taking”, IG1 and IG2 persons were distributed as follows. Its low intensity was found in 100% of IG1 and 11.4% of IG2 examined; the level below the average was determined in 80% and above the average in 8.6% of the examined in IG2. The difference found between the subgroups was statistically significant at a low level (p <0.001) and the level below mean (p <0.05). High-level subjects were not found in both subgroups.

Risk-taking is a person's conviction that everything that happens to him or her contributes to his or her development at the expense of knowledge that a person will gain from experience: both positive and negative. A person who views life as a way of gaining experience is prepared to act in the absence of reliable guarantees of success, at his own risk, believing that the desire for simple comfort and safety impairs the life of the individual. That is, the basis of risk taking is the idea of development through the active acquisition of knowledge from experience and their subsequent use.

The role of “risk-taking” is to ensure the process of building adequate relationships between an individual and society, the ability to be open to the environment and perceive life events as a personal challenge that can be managed, and treat of life's difficulties as a chance to develop and gain new experience.

Based on the fact that IG persons were characterized by very low levels of “risk taking”, it could be concluded that they were unable to take responsibility for their own actions and life in general, act independently, and lost faith in their own forces. This led to the formation of "learned (acquired) helplessness" in them. This term was introduced by M. Seligman and means a person’s condition when he/she does not attempt to improve his/her condition (does not try to avoid negative drivers or get positive), although such an opportunity exists.

It is important that such a condition, characteristic for the examined of IG both subgroups, is accompanied by deformation of the motivational, cognitive and emotional life spheres. The manifestations of violations are as follows: in the motivational sphere - the inability to act, interfere with the real situation; in the cognitive realm - the inability to acquire skills that could be effective in similar situations; in the psycho-emotional sphere - irritability, hostility, aggression, anxiety, depression.

The analysis of the results of the examined distribution by the integral indicator of personal resilience confirmed the established tendency for its deficiency due to lack of all its components in IG persons, compared with the examined from CG (Table 4).

A significant lack of resilience was observed in 75.6% of IG persons. There were no such indexes ($p<0.001$) in CG; a lower than average level was detected in 24.4% of IG persons, and there were none of them in CG ($p <0.05$); the level of above average in IG examined is not detected. In CG the level higher than average was observed in 75.8% of persons under examination ($p <0.001$). High level was also not detected in IG persons, and 24.2% ($p <0.05$) was observed in CG.

Table 4

The distribution of subjects by the integral assessment of the expression of personal vitality

Amplitude of indexes	IG, n=78		IG1, n =43		IG2, n=35		CG, n=62		p IG1-IG2	p IG-CG
	Abs	%	Abs	%	Abs	%	Abs	%		
Low , <62 points	59	75.6	43	100	16	45.7	0	0.0	<0.001	<0.001
Less than average (62-81 points)	19	24.4	0	0.0	19	54.3	0	0.0	-	<0.05
Over average (82-100 points)	0	0.0	0	0.0	0	0.0	47	75.8	-	<0.001
High (>100 points)	0	0.0	0	0.0	0	0.0	15	24.5	-	<0.05

According to the integral estimation of personal resilience expressiveness, the examined from IG1 and IG2 were distributed as follows. Low levels were found in 100% of IG1 and 45.7% of IG2 subjects. The level below the average was determined in 54.3% of IG2 examined. The difference found between the subgroups was statistically significant at a low level ($p < 0.001$) and below average level ($p < 0.05$). Subjects with higher than average and high levels were not found in both subgroups.

Analysis of coping strategies used by the persons under exanimation and their study showed significant differences in their distribution among the representatives of different groups (Table 5).

Avoidance strategy that reflects the tendency to move away from a problem situation as a leading one was used by 39.7% of IG examined. Emotional-oriented strategies - emotional response to a problem situation - also prevailed among them. The number of such persons is 36% of all examined in this group. The reaction of social distraction is much less (11.5%) expressed in patients with CBP, which indicates that they try to share their problems and difficulties with their friends, relatives, family and seek compassion and understanding from others. Behavioral distraction and task-oriented coping are selected by 6.4% of this group examined.

Table 5

Structure of coping behavior mechanisms (S. Norman, D. F. Endler, D. A. James, M. I. Parker test)

Variant of coping behavior/strategy	IG, n=78		IG1, n =43		IG2, n=35		CG, n=62		p IG1-IG2	P IG-CG
	Abs	%	Abs	%	Abs	%	Abs	%		
Decision oriented	5	6.4	1	2.3	4	11.4	27	43.6	-	<0.05
Emotions oriented	28	36.0	12	27.9	16	45.7	5	8.1	<0.05	<0.05
Avoidance oriented	31	39.7	24	55.8	7	20.0	1	1.6	<0.05	<0.05
Subscale of distraction	5	6.4	0	0.0	5	14.3	19	30.6	<0.01	<0.01
Social distraction subscale	9	11.5	6	14.0	3	8.6	10	16.1	-	-

The choice of coping strategies by CG persons was different from that of IG. CG respondents chose task-oriented coping (43.6%). The dominant coping strategies are also distraction (30.6%) and social distraction (16.1%) from the problems. To a much lesser extent, CG responded emotionally reacted in the problem situation (8.1%) and avoided it (1.6%).

The difference in the choice of coping strategies in IG and CG groups is pronounced and statistically significant ($p < 0.05$ and $p < 0.01$ on the distraction scale), except for the social distraction scale, where no statistically significant difference was found.

A comparative analysis of the coping strategies used by IG1 and IG2 examined also found statistically significant differences. In IG1 group 55.8% of respondents choose avoidance and 27.9% - emotion-oriented copings. 14% of this group respondents try to seek compassion and understanding from others; 2.3% try adequately solve their problems.

In IG2 group, copings distribution is different compared to IG1 respondents: the behavior styles are predominant, emotions oriented - in 45.7% ($p < 0.05$), avoidance oriented - in 20% ($p < 0.05$). Distraction was characteristic of 14.3% ($p < 0.01$). Coping behavior of social distraction is chosen by 8.6% of the respondents in this group, and 11.4% of them are characterized by efforts to solve their problems constructively. On these scales, no statistically significant difference with IG1 values was detected.

Conclusions and prospects for further research. Analysis and generalization of the results of personal resilience study allowed us to conclude the following. High level of

personal resilience was peculiar to semi healthy IG individuals. This was reflected in their surviving of own actions and surrounding events as interesting and optimistic ("involvement"), as a result of their own choice and initiative ("control") and as an important incentive to learn new experiences ("risk taking").

It was the individuals of this group who gave adequate assessment of crisis and stressful situations that appeared in their lives, adequately assessed their physical and mental state, demonstrated lack of negative emotions, tensions, tolerance for frustration, optimism, high self-esteem and confidence.

Comparative analysis showed that IG persons exhibit significantly lower personal resilience. A significant number of IG respondents were characterized by low and average with tendency toward low values of resilience in general and its individual components, too. Lack of these characteristics had a negative pathogenetic influence on psychological maladaptation formation.

The maximum deficit of personal resilience was observed in IG1 individuals, which imprinted on the distortion of their personal space and vital activity. They were distinguished by exaggerating the negative assessment of the disease to any events around them, as uncontrolled, inevitable and unfavorable; they noted a state of psycho-emotional stress, physiological stress, high anxiety, lack of sense of personal importance, inability to tolerate pain and lack of attempts to adequately solve life's difficulties.

In IG2 examined the distribution at low and below average levels occurred almost evenly, with a slight predominance of average with tendency to low. They were characterized by emotional lability and tendency for negative and aggressive affect, fixed on traumatic and negative experiences, and were in a state of permanent dissatisfaction with themselves, which forced them to look for ways to reduce basal anxiety and restore basic sense of security through hostile behavior. Such constellation of personal characteristics of IG examined led to the formation of negative outlook and loss of sense of meaningfulness of life, which further disadapted them.

The negative link between resilience and depression, hostility, stress, and unproductive coping strategies has shown that low levels of resilience are associated with a more frequent assessment of patients with CBP as unsafe, life-threatening, and uncontrolable. This leads to a stressful situation, passivity in its avoidance.

The style of coping with stress behavior in combination with personal resources and resilience can be considered as a personality adaptive potential. Characteristics of coping

strategies can give an idea of a patient's adaptive capacity to overcome the disease, as well as serve as psychological prognostic markers of disease favorable or unfavorable course.

The results obtained give the basis for further research of the social and psychological sphere, identification psychocorrection targets and development on this basis of target-oriented specific measures of psychocorrection and psychological support of CBPS patients.

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