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Original article

SPECIFICS AND DYNAMICS OF THE MEANING OF CHRONIC PAIN EXPERIENCES TO PATIENTS WITH DEPRESSION

Tatyana Telbizova[1], Ivan Aleksandrov[2]
1) Department of psychiatry and medical psychology, Medical University, Varna, Bulgaria.
2) Department of health care, Sliven Affiliate, Medical University, Varna, Bulgaria.

ABSTRACT:

Depression is a psychological factor that affects not only the pain sensation but also the pain experiences.

Purpose: The aim of the study was to analyze and summarize the specifics and dynamics of chronic pain experiences in patients with depression.

Materials and methods: A sample of 120 patients with chronic pain was studied. Sixty-one patients had clinically manifested depressive episodes, and the other fifty-nine – had no depression. The study was phased. The second stage was performed three months after the first. The patients with depression received antidepressant treatment between the two stages. The sample was evaluated with: 1) quantitative methods: HAM-D-17 for the severity of depression, Spielberger's questionnaire for state and trait anxiety degree and VAS for pain intensity; and 2) qualitative method – content-analysis of the answers to the question "What does pain mean to you?".

Results: The mean age of the sample was 51.90 (SD=11.94). Women predominate (81.7%) over men (18.3%). The group with depression had a high degree of state and trait anxiety and moderate pain intensity. The content-analysis revealed that the experience of pain as punishment was specific for patients with depression. The reduction of the mean value of the severity of depression from moderate to mild in the second stage influenced the dynamics of the pain experiences in the direction of a limitation.

Conclusion: Depression is a factor influencing the meaning of chronic pain experience. The search for depressive symptoms and specific experiences and their intervention is substantial in the management of chronic pain.

Keywords: chronic pain, depression, chronic pain experience, meaning, content-analysis.

INTRODUCTION:

Depression is more common in patients with chronic pain than in the general population [1]. It is part of the interactive complex of biopsychosocial processes that contribute to the development and maintenance of chronic pain and influence the results of pain treatment. The combination of chronic pain with depression increases the risk of developing disability and suicide [2].

Depression affects not only the objective symptoms of pain but also the subjective pain experiences. The experience of pain is defined as "emotional and psychological factors affect the way a person interprets or perceives neurochemically transmitted signals of noxious stimulation, and conversely, perceptions of the noxious stimuli determine that person's emotional and psychological reactions to the physical sensations" [3]. Depression and anxiety are emotional factors that play a major role in forming the experiences of chronic pain [2]. Anxiety symptoms often accompany the depressive episode in chronic pain patients [4].

The meaning of an experience is a product of the consciousness in the interaction between the object (pain) and the subject. It depends on the value that the subject attributes to the object, i.e. what each individual's concept of the experience is [5]. The meaning of the experience is situational, affects the identity and integrity of the person. It is influenced by their past experiences and by other persons' experiences and beliefs [6]. Thus, the essence of the pain is determined by the individual's responses to it, based on the meaning the individual assigns to it in a specific situation.

Most phenomenological studies, regardless of the qualitative approaches used, present results related to the effects of chronic pain on all areas of a person's life. Few studies have assessed the influence of factors such as depression, anxiety, situational factors and memories of pain on the chronic pain experiences [7].

The aim of our study was to analyze and summarize the specific experiences associated with chronic pain and to investigate their dynamics in patients with chronic pain and depression.

MATERIALS AND METHODS:

A randomized study of 120 patients with chronic non-malignant pain of different origins hospitalized at the "St. Marina" University Hospital – Varna was carried out. The design of the study has been approved by the Ethics of Scientific Research Committee at Medical University "Prof. dr. Paraskev Stoyanov" – Varna. The study was phased in two stages. The second stage was carried out three months after the first.

The assessment of the patient's mental state was made according to the criteria of the international classification of diseases tenth revision (ICD – 10) for a depressive epi-

sode. According to the presence of a depressive episode, the sample was divided into two groups - a group without depression (n = 59) and a group with depression (n = 61).

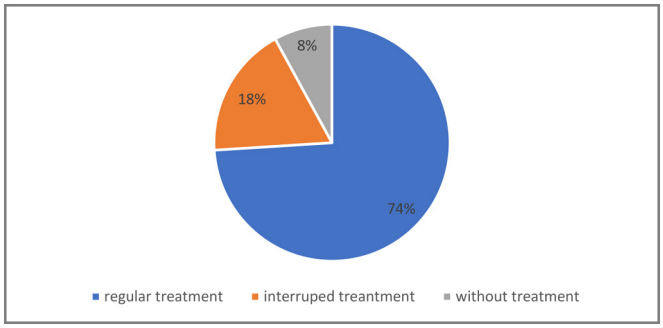
Quantitative methods were used for the evaluation of the severity of depression, the degree of state and trait anxiety, and the pain intensity. All indicators were assessed during the two stages of the study, with the exception of trait anxiety. The latter was only assessed during the first stage of the study as it was considered a constant characteristic. The following scales were selected to assess the patient's condition: 1) Hamilton Depression Rating Scale (HAM-D-17) for assessing the severity of depression; 2) Spielberger's State and Trait Anxiety Inventory (STAI) – scale (S) for state anxiety degree (STAI – form Y1) and scale (Ò) for trait anxiety degree (STAI – form Y2); and 3) Visual Analog Scale (VAS) for assessing the intensity of pain. To analyze the specifics and dynamics of experiences related to the meaning of pain to the patients with chronic pain and depression, content analysis was used as a qualitative method. All participants were asked the question, "What does pain mean for you?" during the two stages of the study. An analysis of the content of the answers written verbatim by the researcher was performed.

RESULTS:

One hundred and twenty patients with chronic pain were studied. The mean age of the participants was 51.90 (M=51.90, SD=11.94), ranging from 24 to 76 years. The sex distribution of the sample was uneven. The share of the women was predominant – 81.7% (n = 98), compared to that of men - 18.3% (n = 22).

The results of the distribution of the group with depression in the first stage according to antidepressant treatment showed that 73.78% (n = 45) of the patients were on maintenance treatment, 18.03% (n = 11) of them had stopped their treatment for some reason and 8.19% (n = 5) – had never taken antidepressants (fig. 1.). All patients received regular maintenance treatment with antidepressants after the first stage of the study.

Fig. 1. Distribution of the group with depression according to the antidepressant treatment – first stage of the study.



The mean values of the studied indicators (severity of depression, degree of state and trait anxiety and pain intensity) for the two stages of the study are presented in table 1 and table 2. Òhe frequency distributions of the scales used are close to the normal.

Table 1. Mean values of the main indicators in groups – first stage of the study.

Group	Without depression (n=59)		With depression (n=61)	
Indicator	Mean	Stand. deviation	Mean	Stand. deviation
Severity of depression	3,5424	1,77455	16,1475	5,86753
State anxiety	36,3559	8,88967	50,1475	13,89944
Trait anxiety	40,1695	7,84583	49,2295	11,39356
Pain intensity	3,8475	1,95478	5,7705	2,73492

Table 2. Mean values of the main indicators in groups – second stage of the study.

Group	Without depression (n=59)		With depression (n=61)	
Indicator	Mean	Stand. deviation	Mean	Stand. deviation
Severity of depression	3,8814	2,82894	13,3607	6,95948
State anxiety	35,4407	8,37334	49,2295	16,03475
Pain intensity	3,1695	2,16678	5,2623	2,58135

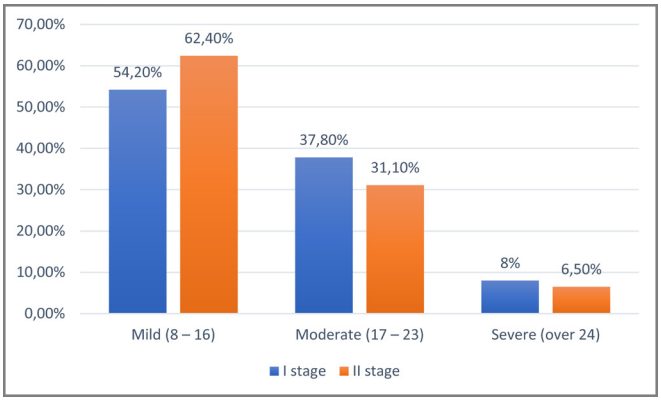
A decrease in the mean values of all indicators in the second stage of the study was reported in the group with depression. Trait anxiety was assessed only during the first stage. The reduction in the mean value of the severity of depression was the most pronounced one as a result of antidepressant treatment between the two stages of the study. The mean value of depression severity in the first stage of the study was close to moderate (M=16.14, SD=5.87), and in the second stage, it decreased to mild (M=13.36, SD=6.956). The group with depression had a

high mean value of trait (M = 49.23, SD = 11.39) and state anxiety (M=50.15, SD=13.90), the latter remaining high in the second stage of the study (M=49.23, SD=16.03). The indicator pain intensity had a moderate mean value for both stages of the study (1-st stage: M=5.77, SD=2.73; 2-d stage: M=5.26, SD=2.58). (table 1, table 2)

The mean values of all indicators showed mild pain intensity, moderate state and trait anxiety degree for both stages of the study in the group without depression. Regarding the mean value of the severity of depression, a slight increase was reported in the second stage of the study (1-st stage: M=3.54, SD=1.77; 2-d stage: M=3.88, SD=2.83). (table 1, table 2)

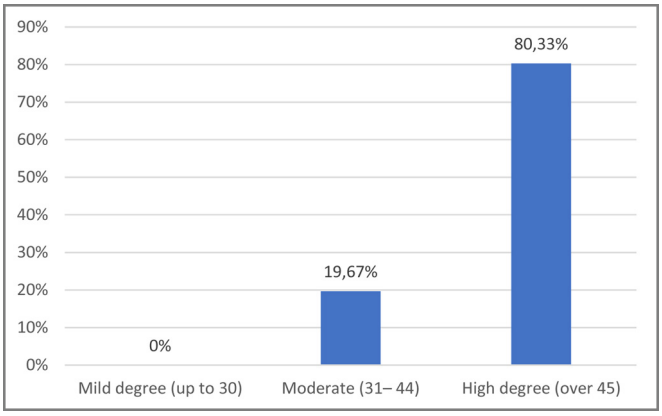
The distribution of the group with depression according to the severity of depression showed that 54.2% of patients had mild depression, 37.8% had moderate depression, and 8% had severe depression in the first stage of the study. A decrease in the severity of depression was reported in the second stage of the study: 62.4% had mild depression, 31.1% had moderate depression, and 6.5% had severe depression. (fig. 2.)

Fig. 2. Distribution of the group with depression according to the severity of depression.



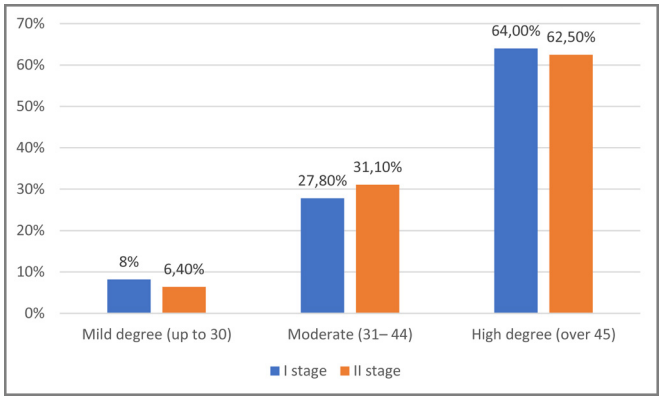
The group with depression was dominated by patients with high trait anxiety. Their share was 80.33%. The remaining 19.67% had moderate trait anxiety. (fig. 3.)

Fig. 3. Distribution of the group with depression according to the trait anxiety degree.



In the first stage of the study, the distribution of the group with depression according to state anxiety showed that 64% of patients had a high degree of state anxiety, 27.8% of patients had a moderate degree of state anxiety, and 8.2% had a mild degree of state anxiety. In the second stage, a decrease in the share of patients with high (62.5%) and mild (6.4%) degree of state anxiety was reported, at the expense of an increase in the share of patients with moderate state anxiety (31.1%). (fig. 4.)

Fig. 4. Distribution of the group with depression according to the state anxiety degree.



A contentanalysis was used to analyze the content of the patient's answers to the question "What does pain mean for you?" during the two stages of the study. The analysis aimed to find the specific meaning of chronic pain experiences for the two groups with chronic pain. What was common to the whole group was the presence of chronic pain, and what was different was depression. Thereby, the comparative analysis of experiences between the two groups allowed for the determination of the specific experiences of chronic pain for the patients with depression. The dynamics of experiences of the group with depression were studied by comparing the frequency and specificity of experiences registered during the first and second stages of the study.

The results were analyzed based on the frequency and specificity of the fixed semantic units. After the initial processing of the data and their subsequent ranking, six categories of experiences were identified for the two groups related to the meaning of chronic pain: pain as a limitation, pain as suffering, pain as a punishment, pain as discomfort, pain as anxiety and pain as a part of life.

Table 3. Content-analysis of the answers to the question "What does pain mean to you?"– first stage of the study.

Group with chronic pain and depression	Group with chronic pain without depression
1. **Pain as a limitation**: 20 • Obstacle: 6 • Hurdle: 1 • Limit: 9	1. **Pain as a limitation**: 27 • Obstacle: 10 • Hurdle: 4 • Limit: 8

• Trap: 2 • Prison: 1 • Stalemate: 1	• Trap: 1 • Dependency: 1 • Control: 1 • Inevitability: 1 • Insuperability: 1
2. **Pain as suffering**: 17 • Suffering: 6 • Desperation:3 • Humiliation: 1 • Difficulty: 1 • Load: 1 • Heaviness: 4 • Burden: 1	2. **Pain as suffering**: 15 • Suffering: 5 • Burden: 2 • Weight: 1 • Severity: 6 • Load: 1
3. **Pain as punishment**: 13 • Punishment: 8 • Punishment from God: 1 • Cruelty: 1 • Torture: 1 • Harassment: 1 • Death: 1	3. **Pain as punishment**: 1 • Torture:1
4. **Pain as discomfort**: 12 • Discomfort: 10 • Unpleasant feeling: 1 • Tormenting sensation: 1	4. **Pain as discomfort**: 13 • Discomfort: 10 • Unpleasant feeling: 3
5. **Pain as anxiety**: 10 • Stress: 1 • Tension: 1 • Fear: 3 • Horror: 1 • Concern: 1 • Uncertainty: 1 • Restlessness: 1 • Nightmare:1	5. **Pain as anxiety**: 9 • Aggression: 2 • Worry: 1 • Fear: 2 • Horror: 1 • Irritant: 1 • Fixes consciousness:1 • Distracted:1
6. **Pain as part of life**: 8 • Part of life: 5 • Lifestyle: 1 • Something normal: 1 • Given: 1	6. **Pain as part of life**: 12 • Part of life: 9 • Daily life: 1 • Friend: 1 • Temporary phenomenon: 1

The following results of the content analysis at the first stage of the study were presented:

• The experience of pain as a limitation was dominant in both groups, but in the group, without depression, it had a greater frequency and a greater range of specific experiences.

• The experience of pain as suffering was second in frequency for both groups. The comparative analysis revealed a greater frequency and more specific experiences in the group with depression.

• The experience of pain as a punishment ranked third in the group with depression. It was registered only once in the group without depression.

• The experience of pain as discomfort and an unpleasant sensation had a comparable frequency in the two groups studied.

• The experience of pain as anxiety had close both groups quantitative accumulations. Groups differ in the specificity of experiences. Identical experiences for both groups of patients are the experience of fear and terror.

• The experience of pain as a part of life had the lowest frequency in the group with depression. (table 1)

Table 4. Content analysis of the answers to the question " What does pain mean to you?" – second stage of the study.

Group with chronic pain and depression	Group with chronic pain without depression
1. **Pain as a limitation**: 25 • Obstacle: 7 • Limit: 7 • Trap: 1 • Prison: 1 • Stalemate: 3 • Insuperability: 5 • Silence:1	1. **Pain as a limitation**: 15 • Obstacle: 4 • Limit: 10 • Control: 1
2. **Pain as suffering**:19 • Suffering: 3 • Intolerance: 1 • Destruction: 1 • Difficulty: 1 • Load: 3 • Weight: 2 • Heaviness: 7 • Burden: 1	2. **Pain as suffering**:17 • Suffering: 4 • Inferiority: 1 • Incompatibility: 1 • Difficulty: 3 • Weight: 1 • Heaviness: 2 • Load: 1 • Burden: 3 • Effort: 1
3. **Pain as punishment**:4 • Punishment: 1 • Ordeal: 1 • Torture: 1 • Hell: 1	3. **Pain as punishment**: 3 • Torture: 2 • Harassment: 1
4. **Pain as an anxiety**: 12 • Tension: 2 • Worry: 1 • Fear/scare: 7 • Uncertainty: 1 • Nightmare:1	4. **Pain as an anxiety**: 9 • Signal: 1 • Worry: 1 • Fear/scare: 3 • Irritant: 1 • Unexpected experience:1 • Threat: 1 • Obscurity: 1

5. **Pain as discomfort**: 9 • Discomfort: 8 • Unpleasant feeling: 1	5. **Pain as discomfort**: 18 • Discomfort: 6 • Uncomfortable feeling: 10 • Malaise: 1 • Inconvenience: 1
6. **Pain as part of life**:8 • Part of life: 2 • Part of everyday life: 2 • Normal for age: 2 • Daily life:2 • Given: 2	6. **Pain as part of life**:8 • Part of life: 2 • Daily life: 6

The following results of the content analysis at the second stage of the study were presented:

• The most common experience in the group with depression was that of pain as a limitation. This category had more specific experiences compared with the group without depression.

• Next in frequency was the experience of pain as suffering, but the number of specific experiences was greater in the group without depression.

• The experience of pain as anxiety was the third in frequency in the group with depression, but the number of specific experiences was greater in the group without depression.

• The experience of pain as a discomfort ranked fourth in the group with depression, although it prevailed in the group without depression.

• The experience of pain as a part of life had the same frequency for both groups, but in the group, without depression, there were more specific experiences.

• The experience of pain as punishment was the rarest in both groups. (table 4)

DISCUSSION:

The distribution of the studied sample with chronic pain by age and sex was uneven. Most of the patients were between 45 and 66 years old, and the share of women was predominant. These data correspond to the literature, according to which the prevalence of chronic pain is highest among the adults after the age of 40 years [8]. Other evidence suggests that women report higher pain severity and higher rates of chronic pain conditions and depression than men [9].

More than half of the patients with depression were on maintenance treatment with antidepressants – 73.78%. Not a small share of them (18.03%) had taken antidepressants in the past due to symptoms of depression. Patients with a first depressive episode were also registered (8.19%) (fig. 1.). These data reveal the need for systematic monitoring of mental status in order to search for symptoms of depression in patients with chronic pain.

All patients with depression received antidepressant treatment between the two stages of the study, which resulted in a reduction in the mean values of all indicators in the second phase of the study. The reduction in the mean value of the severity of depression was the most significant (table 1, table 2). An increase in the share of patients with mild depression and a decrease in the share of patients with moderate and severe depression were also reported (fig.2). The mean value of pain intensity in the group with depression decreased in the second stage but remained within moderate degrees (table 2). A study proves correlations between severity of depression and degree of pain intensity, i.e. the more severe the depression, the more intense the pain [10].

Anxiety symptoms accompanied the depressive episode in the depressed group. The share of patients with moderate and high state anxiety was predominant in both stages of the study (fig. 4.). Tension, anxiety, and bad premonitions of impending danger are more common in patients with chronic pain and depression than without depression [4]. Some authors suggest state anxiety as a predictive factor for chronic pain and pain-related disability [11].

The predominant share of the group with depression was with high trait anxiety (80.33%) (fig. 3.). It is proposed that "the STAI-T be considered a non-specific measure of negative affectivity rather than trait anxiety per se"[12]. Other researchers have associated high trait anxiety with more symptoms of anxiety and more intense pain. They prove an additive rather than synergistic effect between state-trait anxiety and subjective pain intensity [18]. These findings reveal the need for more evidence to support the prognostic role of the high trait anxiety in the manifestation of depression in patients with chronic pain.

To study the specifics of the meaning of chronic pain in patients with depression, content-analysis was used – a qualitative method for information analysis. Most qualitative studies of chronic pain experiences are performed through interpretive phenomenological analysis, through which the researcher seeks, on the basis of detailed descriptions obtained through an interview, to interpret what is said by the subject and thus understand the meaning of the experiences. Less often, content-analysis is used, in which certain units and categories are fixed in the descriptions of experiences, on the basis of which conclusions are made both about their meaning and about the underlying mental phenomena [7,14]. The subject of the analysis is the frequency of appearance in the text of a certain unit (quantitative content-analysis) and its meaning associated with the text (qualitative content-analysis). Semantic units are individual words from the text or word combinations [6,14]. These distinctive aspects of the analysis emphasize its advantages in determining the specific and dominant experiences in the present study.

The definition of the concepts – specific and dominant experiences – complies with the following points in this study:

1. Specific were those experiences that were distinctive and inherent for the studied group. Their specificity was determined by their meaning and by the frequency of occurrence in the responses of the surveyed participants. A specific category of experiences was considered the one that included units (words or phrases) with a similar semantic meaning that occurred significantly more frequently in the answers of the studied group than in the control group,

where they were recorded at single frequencies.

2. The dominant category of experiences encompassed the highest number of semantic units compared to the other categories of experiences in the studied group and in the control group.

The essence of an experience is determined by the personal concept of the answer to the question, "What does the experience mean to me?". The meaning of the pain experience is based on the individual responses to pain in a particular situation [5]. In analyzing the answers to the question "What does pain mean to you?" several categories of experiences were formed, which occur in the two studied groups, but with different frequency and specificity. (table 3, table 4)

During the first stage of the study, the pain was most often experienced as a limitation by both groups of individuals studied. In the group without it occurred much more often and with more specific experiences ("obstacle", "trap", "dependency", "control", "inevitability", "insuperability") (table 3). Pain limits the movements, actions, activity of patients and becomes an obstacle to performing one or another task in their daily lives. Thus, chronic pain makes a person dependent on the help of others. Limitations and dependence are associated with a loss of autonomy and the ability to control life. The limitations due to chronic pain could be considered in several aspects: time, physical and psychological. The time aspects are the result of the limitations associated with setting future life goals, which necessitates a change of priorities. The physical aspects of the chronic pain limitations refer to the physical inability to cope with everyday life, which puts the individual in a limited framework of functioning. The psychological aspects of the chronic pain limitations stem from psychological factors supporting the constant pain, such as the fear of pain exacerbation and the use of ineffective managing strategies [15].

Next in terms of frequency was the experience of pain as suffering, which was more common for the group with depression and occurred with a greater number of specific experiences such as: "suffering", "despair", "humiliation", "difficulty", "burden" (tabl.3). Some authors define suffering as a harrowing experience that has a profound impact on a psychophysiological and existential level. The experience of chronic pain as suffering predetermines significant changes in the perceptions of oneself and of the world [16]. A qualitative study identifies that the loneliness, the sense of not being taken seriously by health care providers and the fear of an uncertain future reinforced the suffering of chronic pain [17].

The experience of pain as discomfort occurred with the same frequency and specificity for both groups (table 3). It is a manifestation of the sensory aspects of pain as an unpleasant sensation. Some authors identify the focus on physical aspects of pain as the most significant challenge in the management of chronic pain [18].

The experience of pain as anxiety had a comparable frequency for both groups. Experiences such as "fear" and "horror" occur in both groups. Experiences of "stress", "tension", "restlessness", and "nightmare" were characteristic of the group with depression, and "irritant", "worry", "aggression", " distracted ", or "fixates the consciousness" were characteristic of the group without depression (table 3). It has been proven that the fear of pain can lead to increased sensitivity to pain and focusing on it (hypervigilance). Therefore, patients who are afraid of pain experience more signals of threat and are less able to ignore pain-related information [19].

Pain as punishment was a specific experience for the group with depression. It was found in only one answer of the studied group without depression (table 3). The concept of pain as punishment is set semantically in the Ancient Greek word "poin" (from which the English word "pain" originates), which means not only pain but also sanction, punishment, redemption [20]. In some patients with chronic pain and depression, the physical pain is perceived as punishment, resulting from a feeling of guilt associated with depression. Patients with chronic pain and depression perceive physical pain as a punishment for past mistakes and sins in life. When patients suffer from depression, they fixate on insignificant and minor mistakes, overestimating them, and giving them the form of thoughts of guilt. Specific experiences in this category are: "punishment ", "cruelty", "torture", "harassment", "trial", "death", "punishment from God". According to G. Engel (1959), pain plays an important role in the psychological development of the individual, taking a key position in regulating the overall mental activity. Pain is involved in the formation of objective relationships and in the building of the concepts of good and evil, reward and punishment, right and wrong. It becomes an effective means of assuaging guilt and thus influences object relationships [21]. M. Bush (1989) considers that unconscious guilt has an extremely vast power on human behavior and plays an important role in psychopathology, manifesting in unexpected and varied forms. Hå associates unconscious guilt with unconscious irrational beliefs about deserved punishment [22]. Adding guilt experience to the depressive symptoms is associated with suicidal ideation [23].

The experience of pain as a part of life occurs in both groups studied. The patient without depression more often experience pain as a "daily routine," a "temporary phenomenon", or "as a friend that reminds you to pay attention to health" (table 3). These are the persons who have accepted the pain in their lives, which predicts an adaptive coping with it and demonstrates an optimistic outlook on life [15].

In the second stage of the study, there was a significant reduction in the mean value of the severity of depression from moderate to mild in the group with depression. The mean values of state anxiety and pain intensity were also reduced, but not significantly. State anxiety remained in the range of high degree, and the intensity of pain – in the range of moderate degree (table 2). The content-analysis showed the dynamics of the meaning of chronic pain experiences in the group with depression. The frequency of pain experiences as a punishment decreased significantly, and the frequency of pain experiences as a limitation increased. The latter was more typical of the group without depression. Thus, improvement of depressive symptoms changed the meaning of chronic pain experiences in the group with depression, resembling those in the group

without depression. The frequency of pain experiences such as suffering, discomfort and anxiety increased slightly (table 4). Therefore, it can be assumed that the severity of depression was a major factor influencing the manifestation of specific experiences of chronic pain.

In the second stage of the study, there was a slight increase in the mean value of the severity of depression in the group without depression (table 2). The frequency of experiences of discomfort, suffering and punishment was increased. The frequency of the pain experiences as a limitation and as part of life was reduced. The meaning of chronic pain experiences resembled those in the group with depression (table 4). It could be assumed that the time spent in pain may predict future depression.

CONCLUSION:

Depression is an affective factor influencing the meaning of pain. It becomes a source of specific experiences in comorbid patients with chronic pain and depression. Pain as a punishment is a specific experience which is associated with guilt and suicidal ideation. The dynamics of chronic pain experiences are influenced by the severity of depression. With the improvement of depression, the experiences of chronic pain lose their specificity. Their frequency and meaning become similar to the experiences of patients without depression. Therefore, the search for symptoms of depression and specific experiences and their intervention are crucial in the management of chronic pain.

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Address for correspondence:
Tatyana Telbizova MD, PhD
Department of psychiatry and medical psychology, Medical University of Varna, UMHAT "St.Marina", Varna,
1, Hr. Smirnenski Blvd., 9000 Varna, Bulgaria.
E-mail: ttelbizova@gmail.com