

CHRONIC PAIN AS ONE OF THE FACTORS INFLUENCING THE DEVELOPMENT OF DEPRESSION

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Abstract: The article focuses on the investigation of chronic pain as a contributing factor to the development of depression in individuals experiencing chronic pain. The study discusses chronic pain and depression, exploring the connection between the two. Chronic pain is defined as pain that persists for more than 3 months and consistently manifests. Depression, on the other hand, is characterized by depressive symptoms lasting for a minimum of 2 weeks. To identify the link between chronic pain and depression, individuals with chronic pain were included in the study and the role of chronic pain in contributing to depression was examined. The results indicated that for the majority of patients with chronic pain, this pain plays a significant role in the onset of depression. Tests conducted on patients with chronic pain revealed moderate to high levels of depression. The findings demonstrate that chronic pain indeed plays a substantial role in the development of depression.

Keywords: Chronic pain, depression, pain, symptoms, treatment, psychotherapy, antidepressants.

Introduction

In modern times, there is an increase in the number of patients with chronic pain and the fact that most of these patients are depressed due to this pain is often seen. Chronic pain continues for a long time and harms a person's life. In addition to this pain, the possibility of depression depends on age, gender, psychological, social, etc. It can be different in different patients according to factors. The main factors that distinguish chronic pain from acute pain are its long-term duration and difficulty in

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complying with treatment. Due to the difficulty in treating this pain, it is more complicated to calm it down. Because the situation is like this, there are many cases of chronic pain patients falling into despair, which often creates the basis for the emergence of depression.

Depression is one of the most common diseases. One out of every five people suffers from depression at some point in their life. In the conducted studies, depression is seen in 6 out of 100 women and 3 out of 100 men. Women are twice as likely to be depressed than men or they want help for depression. Men are mostly 55-70 years old, and women are more often 35-45 years old. (Hayriye,2008). The occurrence of depression in chronic pain patients is more common in older age groups, which is approximately 13%. (William et al., 2021). The prevalence of this disease ranges from 2-40% (Michael, 2016).

In the fifth edition of the American Psychiatric Association (DSM-V), according to the Diagnostic Statistical Manual of Mental Disorders, the definition of depression is a depressive episode lasting at least 2 weeks, depressed mood, inability to enjoy life, loss of appetite, weight change, sleep disturbance, anhedonia, such as psychomotor symptoms (anxiety, etc.), decreased energy, low self-esteem and feelings of hopelessness, difficulty concentrating or making decisions, decreased sexual desire, suicidal thoughts, etc. accompanied by other symptoms. The duration of depressive episodes can be 6-9 months or even 2 years. (Herlinda et.al, 2021).

Depression (minimum 2 weeks) is a disease lasting more than 2 weeks (Surah et al, 2014).

Chronic pain is considered a critical factor in the development of depression, which is one of the conditions that will cause stress, and the presence of both conditions increases the severity of both diseases and leads to the worsening of the patient's condition (Sheng et.al, 2017).

According to the International Association for the Study of Pain, pain that lasts longer than normal tissue healing time is chronic pain. The risk factors of this pain include factors such as lifestyle and behaviour, demographics, clinical factors, etc. (Roja et. al, 2022). Chronic pain is recurrent or persistent and lasts for more than 3 months or 6 months. (Treede et al., 2015)

Chronic pain is nociceptive, psychogenic, neuropathic, musculoskeletal, mechanical,



inflammatory, etc. There are many categories and types. (Dydyk and Conermann, 2023). Assessing the duration of pain onset is one of the most important factors for classifying chronic pain (Fillingim et.al, 2016). Patients suffering from chronic pain often complain of more than one pain. For example, a patient with chronic back pain may have fibromyalgia. In addition to the disease, the most observed cases are depression and anxiety disorders. Also, psychiatric disorders are observed in more than 67% of patients with chronic pain (Dydyk and Conermann, 2023).

In addition to the basic biological, psychological, and sociological reasons that play a role in the development of depression, clinic workers and public health authorities need to pay attention to the reasons such as the perspective of people's lives in developing private, individual approaches to each person. While assessing physical health capabilities in biological factors, the results of depression and types of cancer, diabetes, stroke, cystitis, etc. the relationship between other diseases was investigated. It was determined that the presence of head and neck cancer increases the likelihood of depression (Remes et.al, 2021). Epidemiological and functional results, which show a high prevalence of both conditions among people, show that there is a strong two-way relationship between chronic pain and mental disorders (Hooten, 2016). Various methods are used in the treatment of chronic pain and depression. Long-term use of opioids used to treat pain increases the likelihood of depression (Meda et.al, 2022).

If the patient has symptoms of depression and these symptoms harm the patient's daily life, treatment is conditional. Antidepressants, psychotherapy, electroconvulsive therapy, light therapy, etc. are used in the treatment of depression. The treatment helps to restore a stable condition during the acute period of the disease and to prevent the relapse of depression during the period of care. (Hayriye, 2008).

Antidepressants such as SNRIs and SSRIs are often used in the treatment of depression. Other antidepressants used in depression in patients with chronic pain include tricyclic antidepressants such as amitriptyline. Although both depression and pain reduction were found during the use of these antidepressants, they were similar in terms of effectiveness. There are no differences. Even though they were created a long time ago, more research is required in this field (Roughan et. al, 2021). Also, the



results of many studies have indicated that psychotherapy plays an important role in the treatment of chronic pain and depression and has a positive effect on improving the quality of life (Meda et. al, 2022). In addition to the treatment of mental problems, psychotherapy should inform the patient sufficiently about his illness. Research shows that patients become depressed and anxious because they do not have enough information about their illness. (Hayriye, 2008).

Literature review

More than 264 million people in the world suffer from depression, and it is one of the important causes of disability in people's lives. Clinical studies show that chronic pain as a stress condition often causes depression in people suffering from this disease, and up to 85% of chronic pain patients suffer from severe depression. (Bair et al. 2003, Williams, 2003). In chronic pain patients, pain is repeated with intense periods. Even if this pain has a somatic symptom in many cases, it can also have harmful emotional aspects. As we know, pain is a universal experience and is our body's most valuable warning system. In recent studies, chronic pain is no longer just a simple symptom, but a disease in its own right, increasing the interest in the relationship between this disease and changes in the nervous system (Zis et.al, 2017).

Chronic pain develops in connection with nerve damage. As a result of research, it has been determined that the changes in the structure of chromatin caused by the injury cause changes in the structure of genes and neurons. This, in turn, can cause depression and anxiety (Meda et.al, 2022). The molecular mechanisms of monamine neurotransmitters, including serotonin, norepinephrine, and dopamine, related to chronic pain and depression have been studied. According to the classical theory of monamine, depression is caused by a decrease in the availability of monoamine neurotransmitters such as serotonin and norepinephrine in the CNS, which has been confirmed in many studies. And the role of neurotransmitters in its development is many. When examining the shared neuroplastic changes of chronic pain and depression, it is important to pay attention to the dopaminergic system of the



midbrain, because the functions of the forebrain play a large role in the management of chronic pain. As a result of the research and observational evidence, it has been found that chronic pain has a high effect on the activity of dopamine in the limbic region of the midbrain. Changes in this structure play a role in causing depression (Sheng et.al, 2017). Studies conducted with chronic pain patients have shown that certain personality types are predisposed to the disease, although the individual is not completely uniquely defined. Most people with this pain have similar behaviours and thought errors. They express it with concepts such as fear, violence, and tension. Also, chronic pain reduces a person's sense of self-respect. Chronic pain is closely related to all depressive disorders. However, the relationship between these two conditions is still not fully understood. In some approaches, they point out that chronic pain is a potential physical or psychological stress that affects the emotional state of a person. The researches that have been conducted also partially confirm these statements. But the confusing situation here is that depression often appears before physical pain. What is known for certain is that chronic pain increases depression and chronic pain in depression (Tütuncü and Gunay, 2011).

More than 100 million people in the United States suffer from chronic pain syndrome, and 20 million people experience this pain more severely. As a result of research, it has been determined that 5-14% of these patients have attempted suicide during their lifetime, and 20% have not thought about suicide. 16.2% of those who died by suicide committed an overdose of opioids, and 53.6% committed suicide with a firearm (Dydyk and Conermann, 2023).

Out of 42 studies on the prevalence of major depression in patients with chronic pain, 31 are based on patients with chronic pain. As a result of the studies, it was determined that the prevalence of depression in patients with chronic pain is 52% in pain hospitals, 38% in psychiatric clinics, and 56% in orthopaedic clinics, focusing on facial pain. 85% in stomatological clinics, and 13% in gynaecology clinics focusing on chronic pelvic pain in laparoscopy patients (Meda et.al, 2022).

The number of pain symptoms in patients suffering from this pain is closely related to depression, and if it is high, it increases the likelihood of depression. In a one-year observation, it was determined that the frequency of depression was twice as high in patients treated with complaints of



migraine, headache, sinusitis, and back pain. When the composition of pain is 2, the occurrence of depression increases 6 times. In total, in the analysis of 3745 depressed patients, it was shown that those with pain symptoms were mostly young, African-American or Hispanic, and had lower education. Again, in the same study, anxiety characteristics, symptomatic arousal, irritability, stomach intestinal problems etc. manifested themselves concerning pain complaints. (Tutuncu and Gunay, 2011).

According to studies conducted by Magni and others, depression is 3 times more prevalent in patients with chronic pain than in patients without chronic pain (Meda et.al, 2022). 890 adults with heart failure and diabetes were examined by telephone for symptoms of depression and 51% were found to have depression and anhedonia. Then pharmacy records were examined for antidepressant prescriptions in the past 3 months. According to research, 2 out of 9 patients had depression. (Ackermann et. al, 2005).

In the telephone conversations conducted with 5004 chronic pain patients in India, the prevalence of chronic pain was 13%, the most common places where pain was observed were knees, feet, and joints, and it was noted that the presence of these pains harmed their ability to maintain relationships with the people they were close to. (Meda et. al,2022).

We have noted that long-term use of opioids in the treatment of chronic pain increases the risk of depression. Scherrer and his friends used data from 3 American health systems during the cohort study and put forward some ideas. From the data on the health of veterans, it was determined that patients who used opioids for a period of 31-90 days compared to patients who used opioids for 1-30 days. 18% more increase in depression was observed in comparison (Meda et.al, 2022).

As a result of recent studies, it has been determined that in cases where chronic pain and depression appear together, it is recommended that antidepressants should be prescribed as the first line of treatment for depression. Others have recommended non-opioid drugs as the first line of treatment for chronic neuropathic pain. (Roughan et al, 2021).

Numerous approaches show that due to the increase in prescriptions, its harmful use has also increased. Also, in the case of COVID-2019, the increase in social distance and isolation has led to an increase in the number of cases of loneliness and depression. It has been suggested that Pregabalin



increases the effectiveness of opioids and the treatment of chronic pain has been given together with opiates. However, the combination of these two drugs has its downsides. We can mention the occurrence of major depression and respiratory problems. Thus, we can say that, in addition to drug interventions, psychotherapy has a good effect on the treatment. (Meda et al, 2022).

The role of psychosocial factors in the development of depression caused by chronic pain is significant. As a result of a retrospective study involving 27 clinical trials conducted by Eccleston et al., it was determined that children and adolescents with chronic headaches experienced a reduction in pain as a result of psychotherapy treatment. It is one of the types of psychotherapy that plays an important role in behaviour. Cognitive Behavioral Therapy has a great role in eliminating the negative emotional state, depression, and anxiety caused by the severity of pain in patients with chronic pain. It has been shown that this therapy improves the functional status of the patient in situations such as fibromyalgia, increases the quality of life, and also reduces chronic pain. The positive effect on the levels has been proven as a result of research. (Meda et. al,2022).

In a clinical study conducted by Cherkin et al., 342 people aged 20-70 years with chronic low back pain were treated with Cognitive Behavioral Therapy compared to conventional treatment. The results showed that many patients improved, indicating the role of psychotherapy in improving the condition of patients. This is predicted information and this therapy should be used as an auxiliary method in the treatment process. (Meda et.al, 2022).

In the studies conducted with patients with chronic pain, variable symptoms such as childhood neglect and suppressed aggression were found. Nervousness and hostility have been noted to play a role in the development and continuation of pain. The expression pattern of the nerve is one of the topics emphasized in these patients. According to this point of view, the emergence of chronic pain is caused by the patient's desire to suppress feelings of excessive irritability, and anger, and is seen more intensively due to the problem of internalized anger management. (Tutuncu and Gunay, 2011).

Patients evaluated in a psychiatric framework often try to focus on symptom management. Some patients insist on all surgical and medical methods. Instead of living with or dealing with chronic



pain, they place the burden of treatment on the doctor. Also, these people often attract attention from the environment. They exhibit behaviours and show high sensitivity to rejection. The defence mechanism they often use is denial, etc. They try to cover up their mental illness with the use of alcohol, physical complaints, and the use of analgesic drugs. They also deny the depression caused by chronic pain and state that they are not depressed (Tütüncü and Günay, 2011).

The frequent co-occurrence of chronic pain and depression in one study shows the joint risks between the two conditions. The first, in a study of 845 adults, found that people with mild or moderate back and neck pain were more likely to develop depression after 6 to 12 months of follow-up. It has been seen that the probability of survival is 2-2.5 times higher than that of people without spinal pain. On the contrary, depression may play a role in the formation of chronic pain. Patients with chronic pain were 6 times more likely to be depressed than those without pain. Later, pain-free people with depression were 3 times more likely to develop chronic back pain than people without depression. In both cases, an increase in pain severity led to an increase in depression. In both studies, the results showed that chronic back pain and depression were closely related. Here, back pain was a risk factor for depression, and vice versa, depression appeared to be a risk factor for back pain. The study also suggested that the 2-way presence relationship affects the dose between chronic pain and depressive symptom severity. (Hooten, 2016).

The conducted research showed that the use of tobacco products decreased to 19.3% compared to other years. However, the range of smoking in patients undergoing treatment for chronic pain was 24.2% in 2000 and 28.3% in 2010. %. This is an important percentage because cigarette use continues to be the single most preventable cause of death in America. The increase in the percentage of tobacco use may be related to the clinical characteristics of adults with chronic pain. For example, patients who use tobacco with chronic pain have partly high levels of depression and functional disorders have been found to have greater pain severity. In addition, chronic pain increases the likelihood that tobacco users will take higher doses of opioids due to the use of opioid medications. Patients with chronic pain who use tobacco products may experience pain and distress as a coping mechanism. This is one of the reasons



why patients do not stop using tobacco products. As a result, these people may need specially designed interventions to reduce or completely stop tobacco use, which is included in behavioural therapy in the treatment of chronic pain. (Hooten, 2016).

The Global Burden of Disease of the World Health Organization (WHO) has determined as a result of relevant studies that there are significantly more people with chronic diseases and these patients suffer more from depression (Chun-hong et.al., 2020). As a result, depression caused by chronic pain treatment should not be limited only to pharmacological treatment, in addition, psychotherapy and physical exercises should be used. (Meda et al, 2022).

As can be seen, the role of chronic pain in causing depression is important. In this regard, it was considered appropriate to measure depression in patients with chronic pain.

Methodology

Design

The purpose of our research is to determine the relationship between this pain and a factor that causes depression in chronic pain patients. For this purpose, quantitative and qualitative sampling was used. The method of approach in the research is the use of the pattern of emergence and increase of depression in chronic pain patients as the level of pain increases. In addition, we can also determine which type of depression is more prevalent in chronic pain. Studying these relationships can help predict and treat depression caused by chronic pain in a timely and appropriate manner.

Participants

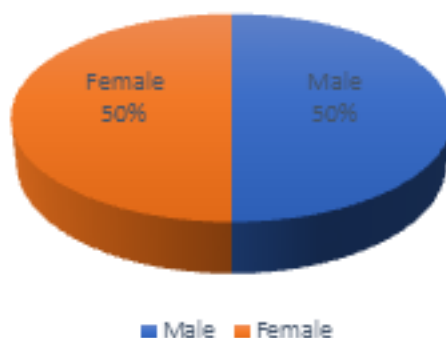
The study was conducted on people with chronic pain. 25 males and 25 females each with chronic pain were involved in the study. A total of 50 people participated in the study. They were informed that Beck's Depression test would be presented to them and consent was obtained from each



of them. After that, the study was carried out. The number of those involved is presented in Table 1:

Table.1

Number of people involved in the study



Instruments

Beck's Depression test was used in the study. Beck's Depression Test, which consists of 21 items, is one of the most important tests for determining depression (Wang et.al.. 2013). The questions in this test are about how a person felt during the last 1 week, including today (sad, bored, pessimistic, good, bad, etc.) and should be answered appropriately.

Data collection

Our approach to the problem under study started with an empirically obtained and validated approach; then permission was requested from the relevant hospital to obtain the data in the study with a documentary presentation sample required by the competent authority. After the agreement, the tools were applied.



Ethical criteria

The research was carried out taking into account ethical aspects. Therefore, the results are directed towards achieving the goals for the benefit of the people participating in the research without any intention to harm under any circumstances. Each person participating in the research is asked to conduct the research following the ethical rules and here voluntarily. Permission to participate has been received.

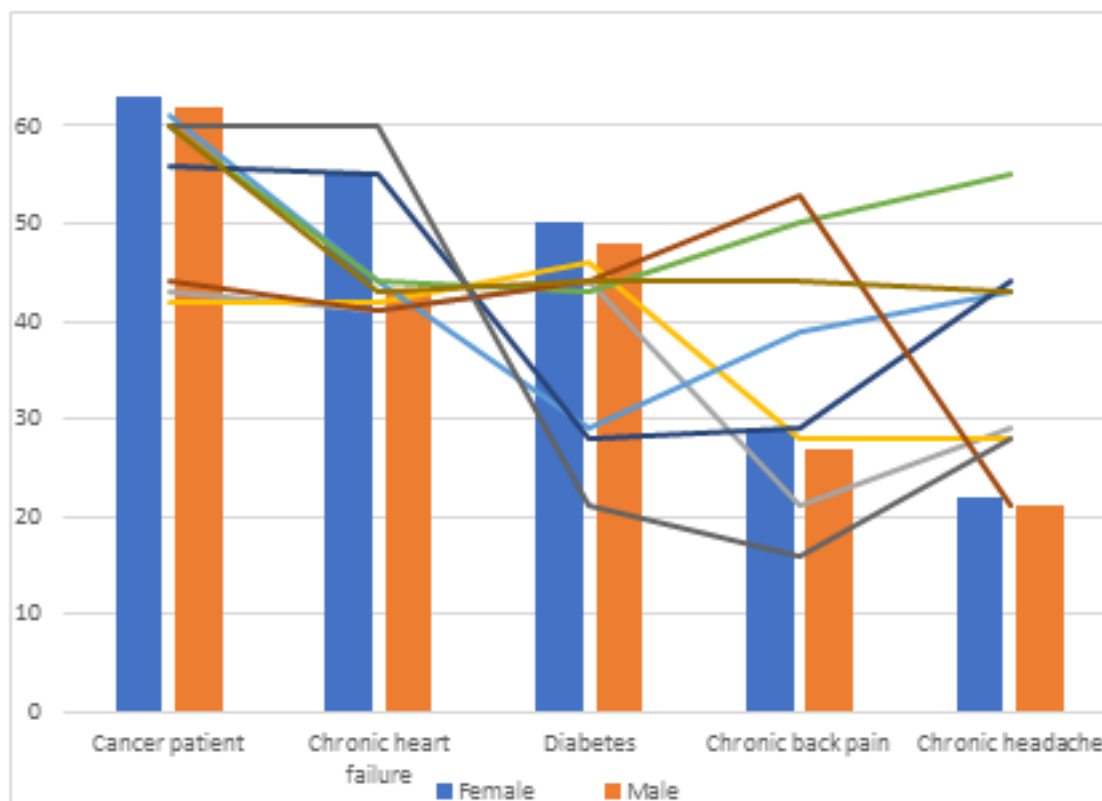
Results

In studies with chronic pain patients, Beck's depression test was applied to men and women. Table 2 shows the differences between men and women according to the type of chronic pain and degree of depression indicators presented:

The degree of depression in women and men according to the type of pain in chronic pain patients



Table 2.



As can be seen from Table 2, the presence of chronic pain is one of the major factors in the occurrence of depression. The occurrence of depression was indeed determined as a result of the test, which was more frequent in patients with chronic pain. Thus, the result of the study shows that chronic pain is one of the factors that play a role in the occurrence of depression, and how much the level of pain is if it is high, the probability of depression is high. The degree of low, medium or high depression is different depending on individual psychological characteristics.

Discussion

Our research showed that the depression rate is high in patients with chronic pain. Various opinions and research results show that there is a relationship between chronic pain and depression.



Limitations and Further Research

Although our study is consistent with several studies, it has several limitations. These limitations include the inclusion of a small number of participants and the limited location. The data are based on the results of a depression test obtained from chronically ill patients. The results obtained in this study may improve the currently available approaches and for future studies, both quantitative and qualitative, it can lead to different ideas according to the sample.

Conclusion

As a result of our research, we confirmed the possibility that this pain in patients with chronic pain causes depression. From this, it can be seen that chronic pain is one of the important risk factors for the development of depression and manifests itself in different ways. Various studies show that depression is manifested not only during chronic pain but also when self-affirmation and self-actualization are not possible in the learning process. At this time, education grades act as a condition for depression (Jabbarov, 2012; Jabbarov, 2017; Jabbarov, 2020).

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