



Psychological implications of coronavirus disease 2019 outbreak in patients with chronic diseases: A systematic review

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Review Article

Abstract

BACKGROUND: During the coronavirus 2019 (Covid-19) pandemic, patients with chronic diseases faced many challenges like greater risk of Covid-19 and delay in treatment which increase the possibility of psychological problems in these individuals. In this regard, the present study was conducted to investigate the psychological consequences of the Covid-19 epidemic in this group of patients.

METHODS: In this systematic review study, published articles on the psychological consequences of the Covid-19 outbreak in 2020 were reviewed. Keywords including Coronavirus 2019 (COVID-19), Psychological Implications, Epidemic, Mental Health, and Chronic diseases were searched in the title and abstract of articles published in reputable international scientific databases and all related English articles were listed and 30 qualified articles were reviewed.

RESULTS: According to the collected data, loneliness increased stress and anxiety, and decreased sleep quality. Moreover, post-traumatic stress, panic attacks, and depressive and anxiety symptoms were the most important psychological consequences of the Covid-19 epidemic for people with chronic diseases. Female gender, old age, longer history of chronic disease, and lack of social support were associated with increased psychological problems. Increased fear and anxiety in caregivers and related health personnel were other results of the study.

CONCLUSION: Many people with chronic illnesses have suffered from psychological problems during the outbreak of COVID-19. Furthermore, the extent of these problems depends on the characteristics of the chronic disease, and individuals' demographic and ecological characteristics, which emphasizes the need for designing individualized programs.

KEYWORDS: COVID-19; Chronic diseases; Mental Health; Psychological Implications

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Introduction

The Coronavirus disease 2019 (Covid-19) first appeared in Wuhan, China, and was registered as an acute respiratory syndrome 2 in the International Classification of Diseases (ICD) of the World Health Organization (WHO). This disease was globally introduced as an all-inclusive disease in March 11, 2020.¹ Coronaviruses include severe acute respiratory syndrome (SARS) in China in 2003, Middle

East Respiratory Syndrome (MERS) in Saudi Arabia in 2012, and Covid-19 in China. However, because Covid-19 has certain symptoms, such as a wide range of distribution and cold-like symptoms, and there is misinformation about the origin of the disease, it is far more dangerous than previous coronaviruses. It has been recognized as the biggest threat to public health in 2020.² The mortality rate of Covid-19 in people with chronic diseases is estimated between 7.2 and 67%, which is affected by age and other chronic diseases.³ Age of over 60 years, smoking, alcohol consumption, obesity, and

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chronic diseases are among the vulnerability factors in Covid-19. Individuals with these factors are more likely to die than other groups in the case of infection with Covid-19.⁴ To control the global spread of the Covid-19 epidemic, measures were taken to quarantine countries nationwide. Under these conditions, people with chronic diseases faced many problems due to sudden separation from others, lack of facilities, and delay in treatment.⁵

Non-communicable diseases are chronic diseases caused by genetic, physiological, and behavioral factors.⁶ Considering that chronic diseases are the cause of 70% of premature deaths in the world, the goal of the Sustainable Plan 2030 is to reduce this mortality rate by one-third in the world.⁷ Mental health plays a facilitating role in the process of various therapies, especially the treatment of people with chronic diseases.⁸ The comorbidity of mental disorders with chronic diseases is very common to the extent that it has been found that depressive disorder can affect the onset, progression, and management of chronic diseases.⁹

During the Covid-19 epidemic, it has come to our attention that people with chronic illnesses appear to need psychological support in addition to physical care. Many of these people experience high degrees of stress because they are told they are vulnerable and need more care. Therefore, if they do not receive timely interventions, they can be expected to develop irreversible depression and anxiety.¹⁰ The implementation of a global quarantine, which causes a great deal of fear and stress among the people, is one of the first actions taken by countries during the outbreak of epidemics. Vulnerable groups, such as those with chronic diseases, are at low risk.¹ In a related study, it was found that people with chronic diseases experienced a great deal of anxiety and stress during the outbreak of MERS after 4 to 6 months.^{11,12} In another study, 11% and 15.1% of patients with chronic renal failure,

respectively, reported symptoms of anxiety and depression during the outbreak of MERS.¹³

Studies over the past year have shown that the outbreak of Covid-19 has had a significant impact on mortality rates in individuals with chronic diseases.¹⁴⁻¹⁶ Moreover, studies have shown that most patients suspected of having cancer do not have adequate access to medical care. There was also a 60% reduction in chemotherapy and 76% immediate referral for early detection in cancer patients.¹⁷

Ziade et al. also found that patients with rheumatoid arthritis had limited physical activity and social communication during the Covid-19 epidemic, which led to depression in 73% of patients.¹⁸ Trindade and Ferreira also found that 37.1% and 50.14% of people with inflammatory bowel disease experienced moderate and severe anxiety during the outbreak of coronavirus, respectively. Furthermore, 40.27% and 10.16% of patients had mild and moderate depression.¹⁹ In addition, studies conducted during the Covid-19 epidemic show a high prevalence of depression and anxiety in people with chronic diseases such as diabetes,^{20,21} migraine,^{22,23} and cardiovascular disease (CVD),²⁴ AIDS,²⁵ cancer,²⁶ rheumatoid arthritis, and osteoarthritis, which had a negative impact on their treatment and recovery.²⁷⁻³⁰ In another studies examined the effects of the incidence of Covid-19 on chronic diseases. Analysis of 72314 samples in China showed that the mortality rate in patients with CVDs, diabetes, acute respiratory syndrome, and hypertension, and in the general population was 10.5%, 7.3%, 6.3%, 6%, and 2.3%.³¹⁻³³ These studies demonstrated the fact that people with chronic diseases have experienced considerable psychological and physical stress during the outbreak of Covid-19. Their weaker immune system, compared to healthy people, increases the risk of Covid-19 infection in them, and if they are infected, they do not respond to existing treatments and the risk of death is very high.³⁴

In addition, the high prevalence of the disease led to delay in the treatment of chronic diseases such as dialysis for people with kidney failure. These interruptions have a negative effect on the outcome of treatment and also cause psychological problems in patients.³⁵

The reduction of Covid-19 restrictions has no impact on the lives of these people and they have to continue observing social distancing and home quarantine.³⁶ In short, as mentioned, people with chronic illnesses also experienced psychological problems in the pre-Covid-19 conditions. It seems that the higher risk of developing Covid-19 on the one hand, and the need to follow more health protocols, such as more social distancing and cessation of their usual treatments, on the other will lead to more psychological problems in these individuals. Thus, the present review study was conducted to investigate the psychological consequences of the outbreak of Covid-19 in patients with chronic diseases.

Methods

The present study was a review of articles indexed in scientific databases such as Google Scholar, PubMed, Scopus, and ScienceDirect. In this study, researchers used the specified keywords to search and extract valid English articles from reliable electronic sources, and describe the data as categorized by examining

the complete texts of these articles.

The term Coronavirus 2019 (COVID-19) was searched in the titles of articles; the terms Psychological Implications, Mental Health, Chronic diseases, Epidemic, and Psychology were also searched and evaluated in the titles and abstracts of the articles. After collecting the articles, irrelevant and duplicate items were removed by the researchers. In the next step, the complete texts of the remaining articles were examined and, after removing the irrelevant items, the results of the selected articles in the final stage were handwritten and examined.

Research articles were purposefully selected based on their relevance to the research goal and having a structured research framework. The quality of the articles was evaluated based on the criteria provided for quantitative (6 criteria), qualitative (11 criteria), quasi-experimental (8 criteria), and experimental (7 criteria) studies; the articles were evaluated on a 2-point scale (0 and 1). The cut-off point was 4 points or less for quantitative articles, 6 points or less for experimental and quasi-experimental studies, and 8 points or less for qualitative studies.³⁷ The data analysis was reviewed using STATA software (version 12; StataCorp LLC, College Station, TX, USA). After the evaluations, 30 selected articles remained in the review (Figure 1).

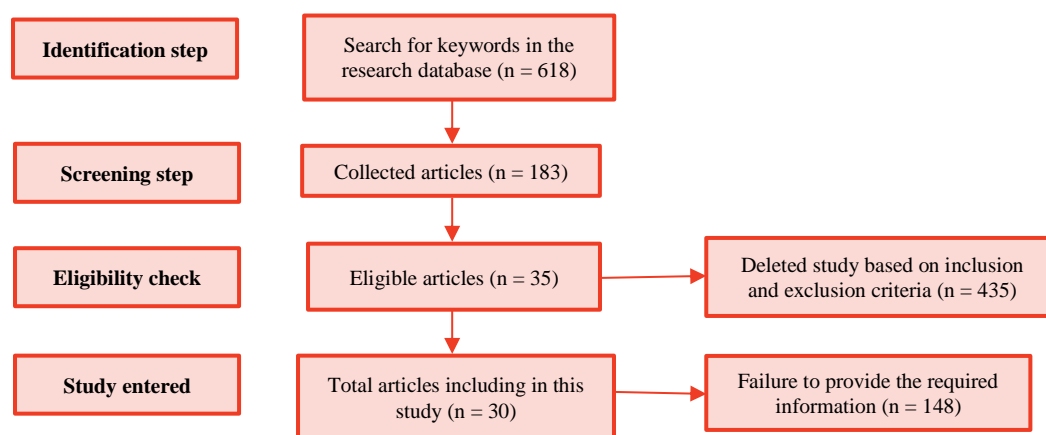


Figure 1. PRISMA checklist for selecting articles

Results

In this study, 30 eligible, English research articles were reviewed. The following are the findings from the reviewed articles on the psychological consequences of the Covid-19 outbreak in patients with chronic diseases (Table 1).^{8,14,15,17,19,20-32,38-49}

Among the 618 articles related to the psychological consequences of the outbreak of Covid-19 in patients with chronic diseases, 30 articles published in 2020 were reviewed and selected and reviewed with a population of 23,870 based on the inclusion and exclusion criteria. Among the 30 articles reviewed, 80.66%, 10%, and 3.34% are quantitative, review, and qualitative studies. In this systematic review, 18 countries and 10 chronic diseases were examined. The studies showed that the fear of developing Covid-19 in hospitals and clinics was the main reason for not seeing a doctor and continuing the treatment process. This created a great deal of fear about the progression of the disease during home quarantine. Consequently, anxiety, depression, fear, despair, and rumination were formed in patients. Moreover, the findings of the reviewed articles indicated the role of the variables of gender, education, marital status, and type and severity of disease in the perception of stress and anxiety caused by Covid-19. Being a woman, old age, a longer history of chronic illness, and lack of social support were all contributing factors in the increase in psychological problems in all studies.

Discussion

The aim of this study was to review the psychological effects of the Covid-19 outbreak in people with chronic diseases. The results of the studies showed the significant role of Covid-19 in increasing the psychological problems of people with chronic diseases, which can be found in the findings of the studies by Lai et al.,¹⁷ Alessi et al.,²¹ Ma et al.,²³

Seyahi et al.,³⁰ Tee et al.,⁴⁰ and Wang et al.⁴⁵

At the start of the Covid-19 epidemic, many media outlets and social networks spread news and messages about the greater vulnerability of people with chronic diseases and the elderly to Covid-19, which caused fear. This caused a great deal of anxiety in these people.⁸⁻²¹ This resulted in these individuals spending a very difficult year with depression, fear, and stress, which led to further lowering of their immune system.⁴⁹

As Covid-19 is an unknown disease and no definitive cure has yet been found for it, patients with or suspected of Covid-19 are often frightened and anxious about the aftermath of this deadly virus.² Moreover, people with chronic diseases are at higher risk for Covid-19 due to their weaker immune systems.⁴

Elderly people with chronic illnesses in particular experience a great deal of anxiety that affects their mental health and may lead to mental and physical disorders.¹⁵ In fact, when anxiety and stress increase beyond their normal range, they damage a person's body to the point that the patient may have a severe heart attack.²⁴

For this reason, it can be said that, in addition to weaker immune system, the high psychological distress experienced by people with chronic diseases during the outbreak of Covid-19 has led to an increase in the mortality rate of these patients worldwide.³² Furthermore, some common symptoms of Covid-19, such as fever, body aches, loss of taste and smell, hypoxia, cough, and dry throat, increase Covid-19 anxiety in patients. All of these symptoms may lead to the formation of psychological distress in people with chronic diseases.²³

In fact, high levels of fatigue and anxiety resulting from quarantine conditions significantly increase the need for extreme care, but due to the unknown Covid-19 and the lack of definitive treatment, there are many impediments to responding to this need, experiences that intensify fear, anxiety, and depression in these individuals.⁴⁵

Table 1. Characteristics of studies on the psychological consequences of the Covid-19 outbreak in patients with chronic diseases

Author	Chronic disease	Objective and sample size	Type of study	Country	The main results
Addis et al. ⁸	Chronic Disease	Objective: To investigate the psychological effects of the Covid-19 pandemic on people with chronic diseases Sample size: 413	Quantitative	Ethiopia	22.8% of these patients had symptoms of depression and anxiety. Age, gender, duration of illness, respiratory symptoms, and social interaction were also involved in the development of psychological disorders.
Saqib et al. ¹⁴	Chronic Disease	Objective: To investigate the challenges of people with chronic diseases during the outbreak of Covid-19 Sample size: 181	Quantitative	Pakistan	Studies have shown a significant role for Covid-19 in the lives of people with chronic diseases. It was also found that 45% of these patients had physical and psychological health problems.
Louvardi et al. ¹⁵	Respiratory, cardiovascular, endocrine, and autoimmune patients	Objective: To compare the mental health of people with chronic diseases and healthy individuals during the outbreak of Covid-19 Sample size: 163 patients with chronic diseases and 943 healthy individuals	Quantitative	Greece	Both groups experienced psychological problems during home quarantine, but people with chronic illnesses showed higher levels of psychological distress than healthy individuals. Among those with chronic illnesses, patients with respiratory problems suffered the most damage.
Lai et al. ¹⁷	Asthma, cardiovascular disease, and diabetes	Objective: To compare the mental health of people with chronic coronary heart disease and healthy individuals Sample size: 395 individuals with chronic disease and 395 healthy individuals	Quantitative	Bangladesh	73.7%, 59%, and 71.6% of people with chronic diseases had stress, anxiety, and depression, respectively. However, 43.3%, 25.6%, and 31.1% of healthy individuals showed symptoms of stress, anxiety, and depression.
Trindade and Ferreira ¹⁹	Inflammatory bowel disease	Objective: Psychological consequences of the coronavirus 2019 epidemic in patients with inflammatory bowel disease Sample size: 124 women	Quantitative	Portugal	18.50%, 37.1%, and 50.14% of patients experienced mild, moderate, and severe anxiety during the coronavirus outbreaks, respectively. In addition, 40.27% and 10.16% of people, respectively, had mild and moderate depression.
Joensen et al. ²⁰	Diabetes	Objective: To investigate the psychological consequences of the coronavirus 2019 epidemic in the lives of diabetic patients Sample size: 2430 patients	Quantitative	Denmark	The findings indicate high concern for patients with diabetes during the coronavirus 2019 epidemic. It was also found that women with diabetes felt more psychological distress. Feelings of loneliness and fear of disease progression were also observed.
Alessi et al. ²¹	Diabetes	Objective: To evaluate the mental health of patients with type 1 and type 2 diabetes during the outbreak of Covid-19 Sample size: 52 type 1 patients and 68 type 2 patients	Quantitative	Brazil	93% of patients had mental health problems. 43% of patients experienced psychological distress, which was higher in patients with type 2 diabetes. In addition, 75.8% and 77.5% of patients with type 1 and type 2 diabetes suffered from eating disorders and poor sleep quality.

Table 1. Characteristics of studies on the psychological consequences of the Covid-19 outbreak in patients with chronic diseases (continue)

Author	Chronic disease	Objective and sample size	Type of study	Country	The main results
Al-Hashel and Ismail ²²	Migraine	Objective: To evaluate patients with migraine during the Covid-19 epidemic Sample size: 1018 (859 women and 733 men) with an average age of 20 to 40 years	Quantitative	Kuwait	Compared to before the corona outbreak, 59.6% of patients reported an increase in migraines and 16% a decrease in migraines. 10.3% also developed migraine during coronary heart disease. People infected with the coronavirus experienced severe headaches. In addition, 78.1% of them experienced sleep disorders and 79.5% experienced depression and anxiety.
Ma et al. ²³	Migraine	Objective: To evaluate the psychological distress of patients with migraine Sample size: 144 individuals with migraines	Quantitative	China	Patients with migraines experience more severe headaches during coronary heart disease, which in turn increases their psychological distress.
Teixeira et al. ²⁴	Cardiovascular disease and diabetes	Objective: To evaluate the psychological effects of Covid-19 Sample size: 1844 participants (1232 healthy individuals, 298 patients with underlying diseases, 229 heart patients, and 71 diabetic patients)	Quantitative	Brazil	All study groups reported high anxiety. However, patients with diabetes and cardiovascular disorders experienced more anxiety, stress, and fear than the other two groups. In addition, people who had little social contact showed disease progression.
Marbaniang et al. ²⁵	AIDS	Objective: To evaluate the level of anxiety of AIDS patients during the Covid-19 pandemic Sample size: 167	Quantitative	India	60% of the participants were women with an average age of 40-50 years. In addition, their monthly income was less than \$200. The prevalence of generalized anxiety disorder was 25%. Most of participants were worried and stressed about getting Covid-19.
Sun et al. ²⁶	AIDS	Objective: To investigate the challenges of caring for AIDS patients and their psychological health Sample size: Note from the field	Review	China	AIDS patients faced two major challenges during the Coronavirus 2019 outbreak. The first was that they found it hard access to medicine and health care. The second was their psychological and social consequences. The results showed that 60.8%, 49.8%, and 38.5% of patients reported symptoms of depression, anxiety, and insomnia during the quarantine.
Kuman Tuncel et al. ²⁷	AIDS	Objective: To investigate the anxiety of AIDS patients during the outbreak of Covid-19 Sample size: 307	Quantitative	Turkey	Many participants believed that the dimensions of the Covid-19 were not yet fully understood. 45% of patients said they would be in poor physical condition if they had coronary heart disease. Most people also experienced high levels of anxiety and stress.
Kosir et al. ²⁸	Cancer	Objective: The effect of the outbreak of Covid-19 on adolescent care and psychological well-being Sample size: 177 people aged 18 to 39 years	Quantitative	England	In the early weeks of home quarantine, one-third of cancer patients experienced severe psychological distress. Furthermore, compared to the past, 60% of them showed excessive anxiety.
Chen et al. ²⁹	Cancer	Objective: To investigate the fear of disease progression and psychological stress in individuals Sample size: 326	Quantitative	China	In addition, 220 and 243 patients showed signs of depression and anxiety. Moreover, 86.5% of cancer patients were afraid of disease progression, and people with lower levels of education showed more stress and anxiety.

Table 1. Characteristics of studies on the psychological consequences of the Covid-19 outbreak in patients with chronic diseases (continue)

Author	Chronic disease	Objective and sample size	Type of study	Country	The main results
Seyahi et al. ³⁰	Rheumatoid Arthritis	Objective: To evaluate the psychological status and changes in care routine Sample size: 771 rheumatic patients and 917 hospital staff	Quantitative	Turkey	About 86% of rheumatic patients did not want to go to the hospital after the outbreak of Corona 2019. 22% of these people stopped their medication. In addition, 20%, 43%, and 28% of these patients had anxiety, depression, and post-traumatic stress, respectively. The treatment staff also had significant depression and anxiety compared to the past.
Brady et al. ³¹	Rheumatoid Arthritis	Objective: To evaluate the psychological well-being and activity level of patients during the coronavirus 2019 epidemic Sample size: 345	Quantitative	England	Light physical activity was associated with a reduction in mental fatigue and greater vitality, and walking was associated with less physical fatigue in people who isolate themselves. These findings highlight the importance of encouraging physical activity for people with rheumatoid arthritis during quarantine for mental health and well-being.
Picchianti Diamanti et al. ³²	Arthritis	Objective: To evaluate the psychological distress of patients with osteoarthritis during coronary artery disease Sample size: 200	Quantitative	Italy	Patients with osteoarthritis experienced higher stress, depression, and anxiety during the Covid-19 epidemic.
Mosli et al. ³⁸	Inflammatory bowel disease	Objective: A cross-sectional study on the psychological effects of Covid-19 Sample size: 1156	Quantitative	Saudi Arabia	36.6% of patients had anxiety and depression. In terms of education, it was also found that patients with bachelor's and master's degrees experienced more psychological disorders.
Swainston et al. ³⁹	Breast Cancer	Objective: The psychological consequences of coronavirus 2019 on the psychological health of breast cancer patients Sample size: 234	Quantitative	England	The results showed the role of anxiety due to COVID-19 in increasing depression and anxiety in women with breast cancer. Patients whose treatment process was prolonged or disrupted by the coronavirus also had more stress and anxiety.
Tee et al. ⁴⁰	Rheumatoid Arthritis	Objective: Psychological status and its related factors in rheumatic patients during the outbreak of Covid-19 Sample size: 512	Quantitative	Philippines	79.6%, 11.11%, and 9.3% of patients reported stress, anxiety, and depression during the coronavirus 2019 outbreak, respectively. Shortness of breath, allergies, and high blood pressure were among the factors associated with increased psychological disorders in patients.
Garutti et al. ⁴¹	Cancer	Objective: Psychological consequences of the outbreak of Covid-19 Sample size: Narrative review	Qualitatively	Italy	In addition to the physical risks of the Corona virus 2019, psychological threats such as loneliness, fear, hopelessness, helplessness, and rumination were observed in outpatients and inpatients.

Table 1. Characteristics of studies on the psychological consequences of the Covid-19 outbreak in patients with chronic diseases (continue)

Author	Chronic disease	Objective and sample size	Type of study	Country	The main results
Cui et al. ⁴²	Breast Cancer	Objective: To evaluate the psychological stress of cancer patients and coronary ward nurses in Wuhan, China Sample size: 207 women with breast cancer and 684 nurses	Quantitative	China	The findings showed high scores of anxiety, post-traumatic stress, insomnia, and mental health of cancer patients and coronary ward nurses. However, nurses who were not at the forefront of the Covid-19 struggle had less stress. In addition, 5.21%, 62.8%, 51.2%, and 35.5% of cancer patients showed symptoms of depression, anxiety, insomnia, and post-traumatic stress.
Gebbia et al. ⁴³	Cancer	Objective: To investigate the needs and fears of cancer patients Sample size: 446	Quantitative	Italy	Cancer patients were more concerned about the progression of their disease. Lifestyle changes and daily activities were also observed. In addition, cancer patients who were treated and underwent chemotherapy for a longer period of time had mental health problems.
Ng et al. ⁴⁴	Cancer	Objective: To investigate the psychological consequences of coronary heart disease in cancer patients and their medical staff Sample size: 624 cancer patients and 408 treatment staff	Quantitative	Singapore	72.8% of patients and 41.6% of the treatment staff had a high level of fear and anxiety. Depression and anxiety were reported to be higher in married people. Cancer patients with mild symptoms of Covid-19 experienced high levels of anxiety and fear.
Wang et al. ⁴⁵	Cancer	Objective: To investigate the mental health problems of cancer patients Sample size: 6213	Quantitative	China	The results showed a prevalence of 23.4%, 17.7%, and 9.3% for depression, anxiety, and post-traumatic stress in cancer patients. Patients with a history of mental disorder, and alcohol and drug addiction experienced greater degrees of anxiety.
Mukona ⁴⁶	Diabetes	Objective: To evaluate depression in diabetic patients during the Covid-19 Epidemic Sample size: Narrative review	Review	Zimbabwe	The difficulties in the management and screening of diabetic patients during the outbreak of coronavirus have increased the risk of depression in these patients.
Dodesini et al. ⁴⁷	Diabetes	Objective: To evaluate the resilience of diabetic pregnant women during the outbreak of Covid-19 Sample size: 14	Quantitative	Italy	Women with diabetes were less resilient during the coronavirus 2019 epidemic than the past. They were also worried about their child's health due to diabetes.
Singhai et al. ⁴⁸	Diabetes	Objective: To investigate the psychological adjustment problems of diabetic patients during the coronavirus 2019 epidemic	Review	India	Studies have paid less attention to the psychological issues of diabetic patients. Overall, the findings indicated poor glycemic control, lack of insulin availability, and failure to receive treatment during coronary heart disease. These factors caused diabetic patients to experience significant stress and anxiety.
Koppert et al. ⁴⁹	Rheumatoid Arthritis	Objective: To compare the psychological effects of Covid-19 in people with and without rheumatoid arthritis Sample size: 239 patients and 1821 healthy individuals	Quantitative	Netherlands	The results showed the high concern of patients with rheumatoid arthritis during the outbreak of coronavirus. Healthy people were less worried and afraid of getting the Corona virus. In addition, patients had poorer psychological well-being.

Psychological distress is described as a condition which disrupts the levels of normal functioning and causes the person to become emotionally disturbed. These conditions are usually characterized by symptoms of stress, anxiety, and depression. Numerous factors such as history of underlying disease, gender, age, low level of education, and chronic diseases can predict psychological distress in turbulent and stressful situations.²¹ In this regard, Joensen et al. in a study examined 2430 patients with diabetes.²⁰ The results showed that feelings of loneliness and fear of disease progression during the outbreak of Covid-19 were very common in women with diabetes.²⁰ In another study, Louvardi et al. examined 163 chronic patients and 943 healthy individuals during the Coronavirus 2019 epidemic.¹⁵ The results showed that both groups had psychological problems during home quarantine, but people with chronic illnesses showed higher psychological distress than healthy people.¹⁵

In other words, the psychological consequences of a pandemic can be more traumatic than the disease itself and should not be lost to other medical services, but rather psychologists should provide services to patients and medical staff and, if necessary, adopt the necessary psychological interventions for vulnerable people, especially those with chronic diseases.^{12,13}

As the number of casualties increased during the spread of Covid-19, strict measures were taken to curb the spread of the disease in different parts of the world. One of the measures taken to control Covid-19 was to establish home quarantine, which can have a variety of consequences, including increased anxiety and stress in people with chronic illnesses.^{18,19}

In fact, the reduction of social communication and the lack of referrals to physicians due to severe limitations reduced the physical and mental health of patients.⁴¹ People

who are under house quarantine may experience feelings of tiredness, loneliness, depression, and anger because they have limited contact with the community and others.¹¹ Moreover, due to the restrictions and the lack of vacancies in hospitals, the treatment sessions of many patients were interrupted; this issue exacerbated the disease and psychological problems of people with chronic diseases.⁴⁸

In this regard, Sun et al., in a review study, examined the challenges of caring for AIDS patients and their mental health.²⁶ They found that during home quarantine, 60.8%, 49.8%, and 38.5% of patients experienced symptoms of depression, anxiety, and insomnia, respectively.²⁶

Seyahi et al. studied 771 rheumatic patients during the Covid-19 epidemic.³⁰ Their findings showed that about 86% of rheumatic patients were reluctant to go to the hospital after the outbreak of Coronavirus 2019, and 22% of these people stopped their medication. In addition, 20%, 43%, and 28% of these patients had anxiety, depression, and post-traumatic stress, respectively.³⁰ In another study, Swainston et al. studied 234 patients with breast cancer.³⁹ Their results indicated the role of anxiety due to covid-19 in increasing depression and anxiety in women with breast cancer. Patients whose treatment process was prolonged or disrupted by Covid-19 had more stress and anxiety.³⁹

In fact, it can be said that the prevalence of Covid-19, as well as strict measures and laws to control it have caused changes in the lifestyle, and social and occupational interactions of people with chronic diseases, which in itself is considered a cause of anxiety.^{25,43} In addition, the fear of being infected with Covid-19 has significantly increased stress and depression among people; thus, it can be expected that the psychological dimensions of people with chronic diseases undergo irreversible changes if they do not receive timely psychological interventions.³⁶

Overall, the results of the studies showed that the risk of coronavirus 2019 is much higher for people with chronic diseases. This issue has caused considerable fear and anxiety in these patients, and for fear of contracting Covid-19, they avoid going to medical centers to pursue their treatment, and this causes a vicious cycle. The families and caregivers of these patients also have many concerns, including how to take care of their loved ones like before without risking their lives. The health personnel associated with these patients are also aware of the greater risk for these patients; on the one hand, they consider it necessary to pursue the treatment of chronic diseases, and on the other hand, they experience a lot of anxiety. More than a year after the outbreak of Covid-19, the world is still witnessing new mutations of this deadly virus. The results of the present review study showed that the Covid-19 epidemic has had significant negative effects on the psychological health of people with chronic diseases. Many patients have experienced severe depression and anxiety during this period, which affects the healing process of many chronic diseases, including respiratory diseases, cancer, diabetes, and kidney failure. The efforts of all countries and global institutions are now more focused on the production of vaccines and drugs to treat this disease, which is certainly a necessary step, but the psychological aspects of this challenge do not seem to have received much attention. Given the importance of psychological aspects in chronic diseases, which have been considered even before the global epidemic, it is necessary to consider the content of the anxieties and fears of patients and their companions, as well as the requirements of different communities. Reducing caregivers' feelings of guilt and fear and providing them with the right information can be among these measures, which in turn can be hoped to lead to better social support for people with chronic

illness. Furthermore, it is necessary to take appropriate measures to improve medical services, and the medicine and living expenses of these people.

Conclusion

According to the results, considering the laboratories and special treatment centers that visit these people specifically and are maximally protected from the virus, as well as providing follow-up treatment solutions help to ensure the treatment of chronic disease in them and reduce their psychological problems during this period (Ethical principles in writing the article are in accordance with the instructions of the National Ethics Committee and the COPE regulations).

Conflict of Interests

Authors have no conflict of interests.

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