



ANALYSIS OF PSYCHOLOGICAL IMPACT ON DIABETES PATIENTS IN THE ERA OF PANDEMIC COVID-19: A LITERATURE REVIEW

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ABSTRACT

Introduction: Diabetics have several psychological problems associated with diabetes and its complications, which could be exacerbated during the Covid-19 pandemic. The purpose of this study is to analyze the types of psychological responses, efforts to prevent and overcome psychological impacts, and the results of efforts to deal with the psychological impacts experienced by diabetes in the Covid-19 pandemic era based on empirical studies in the last two years.

Method: Journal search using a database Scopus, Science Direct, Proquest, and PubMed. The framework used to review is PICOS with inclusion criteria, namely English-language journals from 2019 to 2020. The study is divided into three major themes.

Results: Of the ten studies that met the inclusion criteria, it was found that the types of psychological responses experienced by people with diabetes during the Covid-19 pandemic were stress, depression, and anxiety. Efforts to deal with psychological problems include telepsychiatry, telemedicine, telehealth, teleconsultation, self-care, and social support. The results obtained were in the form of low satisfaction levels, lifestyle changes, an increase in glycemic control, low anxiety levels, and high optimism with the Covid-19 situation, and a minimal impact on the psychological status of people with diabetes.

Conclusion: It is important to pay attention to the psychological health of diabetics during the Covid-19 pandemic, and serious resources, planning, and action are needed to tackle this problem.

Keywords: psychological; impact; diabetes; covid-19

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INTRODUCTION

Diabetes is a risk factor for the increasing severity of Covid-19 infection. People with diabetes are already a vulnerable group because they have higher hospitalization and death rates, and this risk increases when they catch Covid-19 (Singhai et al., 2020). Several psychological studies on the effects of natural disasters or epidemics on people with diabetes prove that they are already at risk for psychological problems. People with severe mental health illnesses are more likely to have diabetes than the general population (Hillson, 2020).

Based on data from the Ministry of Health (Kemenkes) on May 1st, 2020, out of 800 cases of death due to Covid-19, 83 cases of Covid-19 deaths were found with diabetes (Sri Anindiati Nursastri, 2020). Previous studies (Hong et al., 2009; Lau et al., 2004; Mak et al., 2010) and recent findings (Liu et al., 2020; Sun et al., 2020) show that epidemics and pandemics of infectious diseases can be a traumatic experience for some people and lead to post-traumatic stress disorder (PTSD) and chronic psychological symptoms.

The Covid-19 pandemic has had a devastating effect on the psychological well-being of people

around the world. Constant anxiety due to unconsciously contracting the virus, stress from being confined indoors, and the inability to meet the closest and dear ones dramatically affect people's psychological health. People with diabetes mellitus tend to have various negative emotions, such as depression and anxiety, which will naturally be exacerbated during an epidemic. Unhealthy emotions, in turn, will affect glycemic control in people with diabetes amid the Covid-19 pandemic (Banerjee, Chakraborty and Pal, 2020).

Psychological illnesses such as depression, anxiety, post-traumatic stress disorder, and problems such as stigmatization, medical mistrust, aggression, and frustration will increase during a pandemic, especially for those with chronic illnesses such as diabetes (Singhai et al., 2020). It is estimated that people with diabetes with chronic disease conditions tend to experience psychological disorders throughout life, and social isolation can interfere with mental health parameters in diabetics. Thus, it is necessary to conduct a literature review study that summarizes the psychological impact and efforts that have been made to prevent and overcome the psychological impact that occurs in people with diabetes in the era of the Covid-19 pandemic.

METHOD

This research was a literature review. The topic in this Literature review is a comprehensive summary of the psychological impact of diabetics in the Covid-19 pandemic era. Search for secondary data sources in the form of journals or articles in English and national and international reputations, which are by the topic to obtain the authenticity of this research. The search was conducted using four databases with high and medium criteria, namely Scopus, Science Direct, Proquest, and Pubmed. Search is limited from 2019 to 2020.

Search for articles or journals using keywords and boolean operators (AND, OR NOT or NOT). The keywords in this literature review are adjusted to the Medical Subject Heading (MeSH) and consist of "psychological", "impact", "diabetes", "Covid-19". The strategy used to find articles is using the PICOS framework. The total number of articles obtained was 302 articles that match these keywords. The assessment was carried out based on the inclusion and exclusion criteria eligibility so that there were 10 (n = 10) articles that could be used in the literature review (Table 1). The article was extracted data in the form of citations, methods, measurements, and results. The method used to critique the articles to be

used the Critical Appraisal Skill Program (CASP) instrument.

RESULTS

This literature study research used ten international journals that have passed the screening period according to predetermined criteria based on the quality analysis of The JBI Critical Appraisal Tools. Based on the literature search results, the study results were divided into three major themes: the types of psychological responses, efforts to prevent and overcome psychological problems, and the results of the intervention handling psychological problems experienced by diabetics in the Covid-19 pandemic era. The research design used to discuss the types of psychological responses used cross-sectional studies and case reports, the research design used to discuss efforts to prevent and overcome psychological problems using a cohort study, and the research design used to discuss the results of the intervention treatment of psychological problems is a case report.

Types of psychological responses based on literature search results include stress, anxiety, and depression (Fernández, Cortazar and Bellido, 2020; Khare and Jindal, 2020; Nachimuthu et al., 2020; Fisher et al., 2020; Bala et al., 2021; Ghosh et al., 2020; Sankar et al., 2020; Singhai et al., 2020; Alshareef et al., 2020). The effort to prevent and overcome psychological problems based on literature search results, among others telepsychiatry (Singhai et al., 2020; Khare and Jindal, 2020; Alshareef et al., 2020; Bala et al., 2021), telemedicine (Fernández, Cortazar and Bellido, 2020), telehealth (Fisher et al., 2020), social support (Sankar et al., 2020; Ghosh et al., 2020), diabetes self-care (Bala et al., 2020), teleconsultation (Ghosh et al., 2020). The result of the intervention treatment of psychological problems based on literature search results, among others not too worried about the Covid-19 situation and very optimistic (Nachimuthu et al., 2020; Bala et al., 2020) minor discomfort and anxiety about exposure to the virus caused by traveling to a health facility (Fisher et al., 2020), there is an increase in glycemic control (Fernández, Cortazar and Bellido, 2020).

Respondents in the study had diabetes undergoing treatment with psychological disorders from various countries, namely the United States, Spain, Saudi Arabia, South India, Central India, North India, and India. Gender characteristics of the respondents were almost the same between men and women, and most of the respondents in the study had an average age of > 15 years. Based on information

about psychological problems experienced, more than 50% of respondents experienced these problems obtained from the impact of the Covid-19 pandemic.

DISCUSSION

Types of Psychological Response

The response is a term used by psychology to name a reaction to excitatory received by senses and manifested in form behavior after stimulation. Behaviorism theory uses the term response paired with excitatory in explaining the process of formation behavior (Wikipedia, 2020).

Stress

The lockdown during the Covid-19 pandemic has affected the supply of insulin injections and a lack of support from diabetes care teams, reduced access to health care, and reduced social support, making people more vulnerable to stress (Singhai et al., 2020). Research conducted by Sankar, et al (2020) shows a significant increase in stress as much as 15.5% ($p = 0.016$) in people with diabetes who have families who work in Covid-19 care centers in South India. This is in line with research by Fisher, et al (2020) in the United States, which showed a substantial increase in stress of 61.8% in people with type 1 diabetes and 51.2% in people with type 2 diabetes compared to before the pandemic. Some of these changes are striking, in contrast to those before the pandemic. This could be linked to a pandemic and uncertainty about what will happen, changes in health care and a dramatic increase in distress, and social isolation.

Stress is a person's reaction both physically and emotionally (mentally / psychologically) when a change in the environment requires a person to adjust (Indonesian Ministry of Health, 2020). The results of Morey, JN, Boggero, IA, Scott, AB, & Segerstrom, SC (2015) stated that stress could impact a person's immune system, where continuous exposure to stress will eventually lead to a disease or worsen previous conditions.

Based on the description above, the psychological impact of stress resulting from the Covid-19 pandemic in people with diabetes can worsen their disease conditions. Thus, people with diabetes must try to avoid stress so that complications do not worsen their condition.

Depression

Research conducted by Bala et al., (2020) in Manipur showed that the feeling of depression experienced by people with diabetes during the Covid-19 pandemic was 14.82% (16 subjects out of

108 study subjects). The lockdown policy during the Covid-19 pandemic has created undue psychological distress with depression among the general population and especially those with chronic illnesses such as people living with diabetes. Some of the main problems faced by people with diabetes during the Covid-19 pandemic are reduced activity, restrictions in food supplies that require people with diabetes to change their eating habits resulting in uncontrolled hyperglycemia, medication problems, and difficulty accessing medical consultations for routine check-ups (Bala et al., 2020).

According to the Indonesian Ministry of Health (2016), depression is a condition with symptoms in the form of prolonged sadness and loss of interest in doing activities, followed by a decrease in the ability to carry out activities. Depression begins with stress and causes symptoms such as; feeling depressed, loss of appetite, irritability and irritable, feeling tired, unable to sleep, and difficulty concentrating.

Depression is commonly found in diabetics and has a significant impact on health-related quality of life. Lifestyle changes during the Covid-19 pandemic and self-limitation to carry out routine activities, such as dietary adjustments, exercise or physical activity, and thinking about the risk of complications that can be suffered, often make people with diabetes depressed. This condition decreases the quality of life of diabetics due to not achieving treatment targets in controlling blood sugar levels, adjusting diet and exercise patterns that impact the risk of diabetes complications.

Anxiety

Research conducted by Fisher et al., (2020) show that increasing social isolation leads to financial and family-related anxiety, and vulnerability to the virus itself. This is in line with the research of Singhai et al., 2020 and Fernández, Cortazar and Bellido, 2020 where two-fifths of participants (40%) are anxious about Covid-19 infection. More than half of the participants with diabetes were anxious about a greater risk for the spread of Covid-19 and about a third were anxious about difficulties in managing their diabetes if they contracted Covid-19. Anxiety is common in people with diabetes and has a major impact on health-related quality of life (Bala et al., 2020). Anxiety regarding the spread of Covid-19 has a significant effect on sleep quality, particularly in women and in the older age group. The level of anxiety is also high in those whose families work in Covid-19 care centers. Anxiety about a new disease can occur and cause a reaction that can disrupt their social life (Sankar et al., 2020).

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Anxiety is a danger sign or expresses unpleasant emotions characterized by worry, feeling tense, concerned, fear such as heart palpitations, cold sweat, dry mouth, high blood pressure, and insomnia (Indonesian Ministry of Health, 2016).

The research results by Bilqis, AM, Yaunin, Y., & Darwin, E. (2018) stated that there is a link between anxiety levels and acute respiratory infections. It also showed that anxiety could lower the immune system so that the body is susceptible to acute respiratory infections. This impact will be detrimental in the current situation because a person will be vulnerable to exposure to the Covid-19 virus if their immune system is weak. Therefore, it can be concluded that people with diabetes need to avoid anxiety conditions, especially during the Covid-19 pandemic.

Efforts to Prevent and Deal with Psychological Problems

Possible interventions to help people with diabetes during Covid-19 related to psychological / mental health could include:

Telepsychiatry

Telepsychiatry could be one potential solution to help people with diabetes during Covid-19, related to psychological/mental health (Singhai et al., 2020). People with diabetes have significant psychiatric comorbidities, and psychological factors affecting diabetes management exacerbated during the Covid-19 pandemic. Therefore, it is essential to innovate in delivering health services through telepsychiatry technology, which includes managing psychological

problems that patients may face and providing comprehensive care (Singhai et al., 2020).

Telepsychiatry is a part of telemedicine that involves various psychiatric-related medical services such as psychiatric evaluation, therapy, patient education, and therapy management. Telepsychiatry can bring services to the patient's residence, help integrate health behavior services and primary care that impact better outcomes.

By conducting therapy or consultations via telepsychiatry, follow government recommendations to implement physical distancing and reduce visits to hospitals to reduce the spread of Covid-19. In addition, through telepsychiatry, people with diabetes can consult a doctor regarding the stress and anxiety experienced during this pandemic to reduce the psychological impact on diabetics. Possible interventions to help people with diabetes during Covid-19 related to psychological/mental health could include:

Telemedicine

The current scenario for the Covid-19 pandemic has presented challenges for the health care system. Most of the outpatient clinics had to adjust their daily activities and were forced to introduce telemedicine. Telemedicine is becoming a valuable way to monitor diabetes patients at home, especially those with Type 1 Diabetes (DT1), using a CGM or FGM system connected to the clinic via the cloud (Fernández, Cortazar and Bellido, 2020).

Telemedicine is the provision of remote health services by health professionals using information and communication technology, including exchange of information on diagnosis, treatment, prevention of disease and injury, research and evaluation, and continuing education of health service providers for the benefit of improving individual and community health (Indonesian Ministry of Health, 2019).

With telemedicine, people with diabetes can carry out regular control, treatment, and consultation without having to visit health care facilities to reduce the risk of being infected with Covid-19, which can reduce the psychological problems experienced by people with diabetes.

Telehealth

The Covid-19 pandemic has had a significant impact on adults with diabetes in their health care. Research conducted by Fisher et al. (2020) shows that approximately four in ten adults with type 1 or 2 diabetes reported all their diabetes health care appointments at that time were canceled or postponed, another 40% reported one or more appointments being maintained but redirected to an

audio or video telehealth appointment from an in-person meeting (Fisher et al., 2020).

The increased use of technology for personal communication is a promising discovery and could pave the way for increased reception of long-distance telehealth services in the future (Sankar et al., 2020). Telehealth can reduce discomfort and anxiety about virus exposure caused by trips to health care facilities (Fisher et al., 2020).

Telehealth is a technology that refers to non-clinical services, wherein telehealth sufferers can take online queues for visits to doctors to read articles about health. Telehealth technology can improve access to health services, improve service quality, reduce medical errors, reduce health costs, and better distribute health information.

With telehealth, people with diabetes can view/monitor their blood glucose which is available in the format available on their cellphone, and at the same time prove that doctors are also actively monitoring their glycemic condition. So that the interaction between patients and technology-based health service providers can be well established and the psychological impact that occurs on people with diabetes during this pandemic can be reduced.

Social Support

The lockdown policy during the Covid-19 pandemic has required people to stay at home with limited mobility, causing disruption of diet and lifestyle for people with diabetes. Research conducted by Ghosh et al., 2020 shows that 87% of people with diabetes are psychologically affected by staying at home. They can overcome this by watching television as much as 53% and engaging in physical activity as much as 16%. This is in line with the study of Sankar et al., 2020 which states that social support for diabetics in the form of watching entertainment on television, doing household chores, and spending much time with family members has helped most people with diabetes reduce stress and anxiety levels (Sankar et al., 2020; Ghosh et al., 2020).

According to Schaffer, social support is assistance received from others that can improve the welfare of the recipient. Social support can be in emotional, information, affection, and positive social interactions given to individuals.

Patients with good social support will feel security and comfort to grow a sense of self-care and increase motivation to manage the disease. This condition will prevent the emergence of psychological problems in people with diabetes. In addition, by taking the time to communicate with family, friends, friends, and coworkers, either via text messages, telephone calls,

or video calls, people with diabetes can share their stress and anxiety. In this way, the psychological pressure can be reduced so that diabetics can be calmer.

Teleconsultation

The emergence of the Covid-19 pandemic requires people to limit themselves from doing activities outside the home. This also applies to diabetics/patients. In a study by Ghos et al., 2020, it was found that 69% of diabetic patients were aware of teleconsultation, and 92% chose to use video consultation as an option in seeking guidance from doctors to conduct health consultations and blood glucose monitoring (Ghosh et al., 2020).

According to Regulation of the Minister of Health number 20 of 2019, teleconsultation is a remote consultation service to help establish a diagnosis and/or provide management advice or advice. This consultation can be carried out in written, voice, and/or video form.

The use of technology in teleconsultation has positive effects, including therapeutic effects, increased efficiency in health services, technical usability, and savings in health costs. This is because it reduces hospital use and improves patient compliance, satisfaction, and quality of life. Thus, teleconsultation can help people with diabetes manage diabetes to deal with stress, depression, and anxiety due to the Covid-19 pandemic.

Diabetes Self Care

Diabetes self-care is an important aspect because most of the daily care performed by diabetics and their families includes various activities, for example, blood glucose control, a healthy diet, a diet low in saturated fat, regular exercise, and pain care. Research conducted by Bala et al., 2020 found that 50% of people with diabetes are physically active, 62% of people with diabetes follow some form of exercise, and 80% of people with diabetes regularly follow the exercises they follow (Bala et al., 2020).

According to the American Diabetes Association (ADA), self-care for people with diabetes is a person's ability to perform self-care to meet their basic needs and maintain their health which is influenced by various factors.

The existence of self-care behavior carried out by people with diabetes aims to control the disease to prevent the disease from getting progressively worse so that the quality of life of diabetics can be maintained. By doing physical activity, the body will produce endorphins which can relieve stress, reduce anxiety, and improve the mood of people with diabetes. So that careful diabetes self-care can

improve the psychological well-being of people with diabetes.

Results from Efforts to Handling Psychological Problems

The change in the media for providing health services has had a significant effect on people with diabetes. Some of the results obtained from the efforts that have been made are based on several studies, namely:

1. Low level of satisfaction with the provision of telehealth health services in diabetics (Fisher et al., 2020). This may occur because of the challenges and obstacles in applying telehealth in nursing, such as cost, human resources, policies, and behavior.
2. Lifestyle changes during the pandemic can help people with diabetes to maintain mental health so that psychological disorders of stress, anxiety, and depression can be controlled (Ghosh et al., 2020).
3. There is increased glycemic control as a result of implementing self-management which involves all the resources around the patient so that the patient will be more confident and improve behavior in managing symptoms, treatments and lifestyle changes (Fernández, Cortazar and Bellido, 2020).
4. There is increased glycemic control resulting from implementing self-management, which involves all the resources around the patient so that the patient will be more confident and improve behavior in managing symptoms, treatments, and lifestyle changes (Bala et al. & Nachimuthu et al., 2020).
5. There is minimal impact on the psychological status of the majority of diabetics in Saudi Arabia (Alshareef et al., 2020).

This study has several limitations. First, respondents in the study had diabetes who generally live in urban areas that may not be the same as rural areas with different cultural, socio-economic backgrounds and easy access to health care facilities. The results of the psychological responses experienced are generally subjective responses. Second, there is a lack of information about changes in the psychological impact of respondents in terms of satisfaction with health services through received information technology and medical communication. Third, the possibility of sample bias cannot be ruled out because the respondents came from a health service center that, before the COVID-19 pandemic, always carried out normal controls and with small sample size. The study findings depend on the honesty of the patient or staff. Fourth, the number of respondents with a history of contact and seeking

health services through medical information and communication technology was small.

Apart from the above limitations, this study provides information about the psychological responses that occurred in diabetics during the COVID-19 pandemic and informs the development of psychological interventions that minimize the psychological impact of stress, depression, and anxiety COVID-19 pandemic, and provide a basis for evaluating prevention efforts, treatment, and controls.

CONCLUSION

Changes that occur during the Covid-19 pandemic will affect psychological health for people with diabetes. The psychological responses experienced during the Covid-19 pandemic can include stress, depression, and anxiety. The principle of crisis intervention that can be carried out during a pandemic is understanding the psychological status induced by the pandemic that occurs and providing psychological interventions using information and communication technology as a basis in the process of providing health services during this pandemic, in the form of telepsychiatry, telemedicine, telehealth, teleconsultation, self-care, and social support. Thus, it is essential to pay attention to the psychological health of diabetics during the Covid-19 pandemic.

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