

Psychological and Socio-Economical Problems on Diabetic, Cardiac and Obesity Patients During COVID-19 Pandemic Period

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Abstract: This paper represents an overview on psychological and socioeconomically problems on diabetic, cardiac and obesity patients during covid-19 pandemic period.

Keywords: Anxiety, Depression, Distress, Financial, Food, Longiness, Medication, Stress, Transportation.

1. Introduction

The common factor of disasters or epidemics is major disruption. During the COVID-19 pandemic people have been confined to home, unable to visit relatives, working differently or not at all, some supplies have been disrupted, health care arrangements have changed or paused, international travel has virtually ceased. People with diabetes have been worrying about getting the right food, insulin and other supplies, accessing their usual diabetes services, cessation of care at home, for example foot care. They may not have sought medical help when needed. An elderly acquaintance cancelled an important hospital appointment because he was convinced he would catch the coronavirus from hospital staff. Others don't want to trouble the busy NHS.

COVID-19 lockdown has put forth undue psychological distress with anxiety and depression amongst general population as a whole and particularly those afflicted with chronic diseases like people living with diabetes. An online survey found that almost one-fourth of the studied general Indian public had moderate to extreme depression. People with diabetes have multiple psychosocial issues, which coupled with the psychological stressors of a pandemic, social distancing, lockdown, and quarantine creates an unsettling situation

The prevalence of various mental disorders in people with DM is between 20% and 55%, depending on clinical and socio-demographic variables. Therefore, the interplay of COVID-19, DM, and mental health issues create a complex situation for people with DM leading to difficulties in psychologically adapting to the present situation. 'Diabetes distress' (DD) refers to negative emotions such as feeling hopeless, angry, or frustrated that arise from living with DM. Though it is not a psychiatric condition in itself, it can result in reduced self-care and engagement with healthcare professionals, lack of compliance with treatment and suboptimal glycemic control.

Another concept labelled 'psychological insulin resistance' incorporates the fears and concerns toward insulin therapy, commonly seen in both the youth and middle-age people with DM. Psychological illnesses such as depression, anxiety, post-traumatic stress disorder as well as issues such as stigmatization, medical mistrust, aggression, and frustration increases in pandemics as has been observed in SARS of 2003, Ebola of 2014 and in particular amongst those with chronic diseases such as DM, AIDS, and tuberculosis. Chronic stress and psychiatric disorders such as depression and anxiety can cause sustained activation of the HPA axis, leading to hypercortisolaemia which may cause central obesity and metabolic syndrome which in turn can increase the risk for type 2 diabetes as much as threefold.

An important link between emotions and heart is provided by the hypothalamic-pituitary-adrenal (HPA) axis and the stress hormone cortisol. The HPA axis discharges the hormones into the blood for preparing the body to react to various threats. The mechanism controls the levels of the hormones, depending on the threat levels to cortisol can result in hypercortisolemia, impairment of platelet function, elevated heart rate, and reduced heart rate variability and is thus detrimental to the heart and the entire cardiovascular system and may contribute to cardiovascular diseases (CVDs).

Cortisol also slows down growth hormone and gonadal axes leading to increased visceral fat causing dyslipidemia, hypercortisolism, and hyperinsulinism, increasing the risk for CVDs and other disorders. Stress can accelerate the atherosclerotic process leading to arterial occlusion, plaque rupture and thrombosis resulting in myocardial infarction (MI), or cerebral stroke. Depression causes sympathetic hyperactivity, increased platelet reactivity, pro-inflammatory processes, and an elevation of interleukin 6, which is a primary pro-inflammatory cytokine. A pro-inflammatory condition can accelerate atherosclerosis and lead to increased cardiovascular events. There are also other factors linking depression with CVDs. Depression can result in non-adherence with medical treatments, higher rates of smoking without cessation, and greater risk for obesity because of a sedentary lifestyle. (SL lim, 2020) Anxiety can contribute to a chain reaction in the body, most likely mediated by the

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sympathetic nervous system and culminating in the sensitization of cardiac sympathetic nerves. Constant anxiety can predispose an individual to cardiac rhythm changes and risk for coronary artery spasm. Individuals whose sympathetic nervous system response to stress is exaggerated and prolonged are at a higher risk for atherosclerosis and subsequent coronary artery diseases (CADs).

Socially isolated people may have a different mood state or disturbing complex emotional experience which could result in dejection or demoralization and physical problems. It is related to health risk behaviors such as reduced physical activity, reduced sleep quality, smoking, and poor mental health which could all eventually cause physical illness. Social support can offer a protective effect against progression of CVDs and death by facilitating greater adherence to medical therapies and lifestyle modifications and reducing negative emotional interferences. Social support also provides protection from various stressors, disengages people from risky behaviors such as excessive consumption of nicotine, alcohol, or narcotic drugs, and reinforces healthy behaviors and better mental health. People who are exposed to societal discrimination have negative cardiovascular health outcomes such as alterations in blood pressure, heart rate/heart rate variability, and changes in the body levels of CVD biomarkers. Those who are unemployed or have job insecurity have multiple health problems such as autoimmune disorders, certain types of cancers, metabolic syndrome (including abdominal obesity, dyslipidemia, high blood pressure, insulin resistance, and prothrombotic state), and increased cardiovascular morbidity and mortality

Moreover, long-term financial problems owing to unemployment directly affect cardiovascular health by limiting access to good quality food, increased negative habits such as smoking, lower physical activity, and indirectly through psychological pathways: higher prevalence of depression, anxiety, exhaustion, or hostility. These increase the risk for coronary heart diseases (CHDs) and poor prognosis, by bringing about acute or chronic physiological changes

Obesity is associated with reduced economic and social opportunities and quality of life, and it is a determinant of several intermediate risk factors associated with increased mortality and lower life expectancy. The most severe form of obesity, morbid obesity, is a multifactorial and complex metabolic disease that is defined by a body mass index (BMI) of more than 40 kg/m², or more than 35 kg/m² with comorbidities. As a result of various lifestyle changes, the prevalence of morbid obesity has been rising across the world. In particular, general obesity is a risk factor for cardiovascular disease, type 2 diabetes, orthopedic problems, and some oncologic diseases; it is also associated with psychosocial comorbidities, underachievement in school and/or work, unstable or poor relationships, lower self-esteem, excessive

focus on body image or body shape, and poor quality of life. It is often comorbid with several psychiatric disorders, including major depressive disorder and dysthymic disorder, anxiety disorders (social phobia or generalized anxiety disorder), eating disorders (binge eating disorder, but also pervasively disordered eating behavior with alternating restricting and binge eating), personality disorders (histrionic, borderline, and schizotypal), and substance abuse.

2. Conclusion

This paper presented an overview of psychological and socioeconomically problems on diabetic, cardiac and obesity patients during covid-19 pandemic period.

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