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RESEARCH

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PREVALENCE OF MENTAL DISTRESS IN PEOPLE WITH DIABETES MELLITUS DURING THE COVID-19 PANDEMIC

Prevalência de sofrimento mental em pessoas com diabetes mellitus durante a pandemia de Covid-19
Prevalencia de angustia mental en personas con diabetes mellitus durante la pandemia Covid-19

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ABSTRACT

Objective: to estimate the prevalence of mental distress in people with diabetes mellitus during the Covid-19 pandemic. **Method:** cross-sectional, exploratory study with a sample of 111 people with diabetes. For data collection, a symptom questionnaire called the Self Report Questionnaire-20 (SRQ-20) was used. Data analysis was performed using descriptive statistics. **Results:** the prevalence of mental suffering among people with diabetes was 37.8%. In the depressed-anxious mood group, the most prevalent symptoms showed that 64% of diabetics felt nervous, tense or worried. As for the decrease in vital energy, 51.4% of diabetics got tired easily. For somatic symptoms, it was identified that 30.6% had unpleasant sensations in the stomach. As for depressive thoughts, it was found that 31.5% had difficulty making decisions. **Conclusion:** it is recommended to create comprehensive strategies and lines of care that minimize the psychosocial impacts caused by the COVID-19 pandemic in this population segment.

DESCRIPTORS: Diabetes mellitus; Covid-19; Mental health; Pandemics; Social media.

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RESUMO

Objetivo: estimar a prevalência de sofrimento mental em pessoas com diabetes *mellitus* durante a pandemia de Covid-19. **Método:** estudo transversal, de caráter exploratório, com amostra de 111 pessoas com diabetes. Na coleta de dados, utilizou-se um questionário de sintomas denominado *Self Report Questionnaire-20* (SRQ-20). A análise de dados foi realizada por meio da estatística descritiva. **Resultados:** a prevalência de sofrimento mental entre as pessoas com diabetes foi de 37,8%. No grupo de humor depressivo-ansioso, os sintomas mais prevalentes demonstraram que 64% dos diabéticos se sentiram nervosos, tensos ou preocupados. Quanto ao decréscimo de energia vital, 51,4% dos diabéticos se cansaram com facilidade. Para os sintomas somáticos, identificou-se que 30,6% apresentaram sensações desagradáveis no estômago. Quanto aos pensamentos depressivos, verificou-se que 31,5% tiveram dificuldade para tomar decisões. **Conclusão:** recomenda-se a criação de estratégias e linhas integrais de cuidados que minimizem os impactos psicossociais causados pela pandemia da COVID-19 neste segmento populacional.

DESCRITORES: Diabetes mellitus; Covid-19; Saúde mental; Pandemias; Mídias sociais.

RESUMEN

Objetivo: estimar la prevalencia de angustia mental en personas con diabetes mellitus durante la pandemia de Covid-19. **Método:** estudio exploratorio transversal con una muestra de 111 personas con diabetes. Para la recolección de datos, se utilizó un cuestionario de síntomas llamado *Self Report Questionnaire-20* (SRQ-20). El análisis de los datos se realizó mediante estadística descriptiva. **Resultados:** la prevalencia de sufrimiento mental entre las personas con diabetes fue del 37,8%. En el grupo de estado de ánimo depresivo-ansioso, los síntomas más prevalentes mostraron que el 64% de los diabéticos se sentían nerviosos, tensos o preocupados. En cuanto a la disminución de la energía vital, el 51,4% de los diabéticos se cansaban con facilidad. Para los síntomas somáticos, se identificó que el 30,6% presentaba sensaciones desagradables en el estómago. En cuanto a los pensamientos depresivos, se encontró que el 31,5% tenía dificultad para tomar decisiones. **Conclusión:** se recomienda crear estrategias y líneas de atención integrales que minimicen los impactos psicossociales provocados por la pandemia COVID-19 en este segmento de población.

DESCRIPTORES: Diabetes mellitus; Covid-19; Salud mental; Pandemias; Medios de comunicación sociales.

INTRODUCTION

Covid-19 caused by the new coronavirus (SARS-CoV-2) started in China in December 2019. With a high rate of spread, there have been many records of this infection worldwide, and it has been declared a pandemic by the World Health Organization.¹ Data from the World Health Organization indicate that by the fourth week of July 2021, there have been 190,671,330 confirmed cases of Covid-19, including 4,098,758 deaths.² In Brazil, there have been 19,391,845 million people infected and 542,756 deaths from Covid-19.³

The coronavirus (SARS-CoV-2) has a high potential for dissemination, and can be transmitted through direct, indirect, or close contact with infected people through saliva or respiratory secretions and droplets containing the virus. The main symptoms presented are fever, fatigue, and dry cough, and there may also be a sore throat, loss of taste or smell, and diarrhea. However, it is noticed that patients who have comorbidities, among them people with diabetes, are more likely to manifest severe complications such as respiratory difficulty.⁴

In countries, such as Brazil, Mexico, India, and the United States, diabetes mellitus (DM) or its association with another comorbidity is one of the main factors elevating morbidity and mortality among Covid-19 infected persons. In Italy, diabetes mellitus was the second most prevalent comorbidity among Covid-19 deaths, about 30%.⁵

Therefore, many measures have been adopted by the World Health Organization (WHO) in order to mitigate the spread

of the virus, among them social distancing of the population.⁶ However, adherence to social distancing measures has led to the emergence of psychological and emotional disorders, such as depression and anxiety. In addition, other stressors can be identified during this time of pandemic, such as the fear of being infected or of transmitting the infection to family members, and the lack of security regarding the veracity of the various information spread about Covid-19.⁷

Faced with the measures imposed by health agencies, people with chronic diseases had to adapt to new modalities of monitoring in health services, a situation that provided the opportunity for the increase of mental suffering in individuals with diabetes mellitus, including the possibility of abandonment or non-adherence to treatment.^{6,8}

Thus, psychological problems may arise or intensify, seriously affecting mental health and physical functioning. Problems such as emotional disorders, depression, stress, depressive mood, irritability, insomnia, and post-traumatic stress symptoms have been identified in the daily lives of people in quarantine and directly affect their quality of life.⁹ The early detection of psychological problems allows for a more adequate care and treatment, guaranteeing relief for the individuals.

From this context, which associates the spread of a virus that is little known by the scientific community with the implementation of social distancing and the characterization of diabetes mellitus as a risk group, a permissive environment is formed for the development of investigations that aim to identify the mental impairments and impacts experienced by this population as a

subsidy for the reorganization of public health policies and the development of integral lines of care.¹⁰

The results of this study may contribute to a better understanding of the mental health situation of people with diabetes in Brazil, in the context of the pandemic, providing subsidies for the creation of initiatives to promote and protect the mental health of this clientele. Through this knowledge, it may be possible to institute practices that may be able to minimize the impact of the COVID-19 pandemic on the lives of people at greater risk, such as those with diabetes mellitus.

Given this reality, the objective of the present study was to estimate the prevalence of mental distress in people with diabetes mellitus during the Covid-19 pandemic.

METHOD

This is a cross-sectional, exploratory study, developed in two Facebook® Virtual Communities (VC) focused on diabetes mellitus. To choose the virtual communities, a survey was carried out in the section: “Search people, places and things” using the keyword “diabetes mellitus”.

The inclusion criteria were Diabetic adults (men and women); older than eighteen years of age; members of open and public VCs; “diabetes mellitus” in the name or description of the group; description in Portuguese and with a greater number of members and posts. The following were excluded from the study: children and elderly diabetics; VC of commercial or institutional origin; VC with no recent posts.

The two selected VCs were: “Diabetes – Diabetics” (64,100 members), created on 03/20/2012, with only one administrator and “Controlled Diabetes” (26,650 participants), created on 12/17/2017, with three administrators and a moderator (controls the posted content, removing posts that do not meet the group’s proposal).

For the sample calculation, the formula for infinite population by population proportion was used. An infinite population is assigned when the sample fraction (n/N) is less than 5% of the population.¹¹ When the population parameters are unknown, we replace the estimates \hat{p} and \hat{q} by 0.5.¹² Based on a population of 90,750 individuals, we assigned a confidence level of 95% ($Z_{\alpha/2}=1,96$) and maximum error of 5%, in which we obtained a sample of 384.16 385 participants.

Participants were recruited through public messages posted on the forums of the chosen VCs. The message introduced the study, making the TCLE available to VC members, who, if they accepted to participate in the study, had to declare their consent to participate via an electronic form on Google Forms via

the link: https://docs.google.com/forms/d/e/1FAIpQLSc9rSx-q1Kp4qnYX1IxBFABUhloEK3HKJHN6yqAd4IXGSOcAww/viewform?usp=sf_link. The electronic form was available to be filled out for a period of six months (August 2020 to January 2021), which obtained a total of 111 participants, raising the sample error to 9.3%.

For data collection, a symptom questionnaire called Self Report Questionnaire-20 (SRQ-20) was used, which has 20 questions regarding the period of the month prior to the interview. The SRQ-20 was recommended by the World Health Organization for community and primary health care studies. This instrument was validated in Brazil, which contains identification data and a survey of symptoms presented by the individual in the last thirty days. The instrument allows the evaluation of the risk(s) for mental illness, which is constituted in Risk for Depression and Anxiety.

The data were analyzed by means of data entry into Microsoft Excel® application through double entry. Then, the data were exported to IBM SPSS® software, version 26.0, in which descriptive statistical analysis was performed.

The present study followed all the ethical precepts that govern a scientific research, Resolution 466/2012 of the National Health Council was fully complied with, the study was approved by the Research Ethics Committee of the Federal University of Piauí under Opinion No.4,178,828, in the year 2020. The members of the virtual communities who agreed to participate in the research were informed about the study objectives, data collection methods, and the confidentiality of their identity. In addition, they agreed to participate by signing the ICF.

RESULTS

The sample consisted of 111 people diagnosed with diabetes mellitus. Most participants are female, 78 (70.3%), with an age range between 40-59 years, 59 (53.2%), and a mean age of 39.6 years. Among people with diabetes, the prevalence of mental distress was 42 (37.8%), as noted in Table 1.

Table 2 presents the absolute frequencies of common mental disorder symptoms obtained in the sample in each symptom group. In the depressive-anxious mood group, the most prevalent symptoms showed that 71 people (64%) felt nervous, tense, or worried. As for investigations into the decrease in vital energy, 57 (51.4%) of the diabetics reported that they got tired easily. For somatic symptoms, it was possible to identify that 34 (30.6%) had unpleasant stomach sensations. When depressive thoughts were evaluated, it was found that 35 (31.5%) had difficulty making decisions.

Table 1 – Prevalence of mental distress of people with diabetes mellitus in the Covid-19 pandemic period. Picos, PI, Brazil, 2021

Mental Suffering	N (%)	IC-95%
Without suffering	69(62,2)	(70,8-52,9)
With suffering	42(37,8)	(47,1-29,2)

Table 2 – Prevalence of mental distress per domain of the SRQ-20 questionnaire answered by people with diabetes mellitus in the Covid-19 pandemic period. Picos, PI, Brazil, 2021

	N (%)	IC-95%
Depressive-anxious mood		
Have you felt sad lately?	49(44,1)	(35,2-53,4)
Do you sleep badly?	45(40,5)	(31,7-49,8)
Have you been crying more than usual?	26(23,4)	(16,3-31,9)
Do you feel nervous, tense, or worried?	71(64,0)	(54,8-72,4)
Do you have tremors in your hands?	21(18,9)	(12,5-27,0)
Are you easily frightened?	50(45,0)	(36,0-54,3)
Decrease of vital energy		
Do you have difficulties at work (is your work hard, does it cause you suffering?)	17(15,3)	(9,5-22,9)
Do you get tired easily?	57(51,4)	(42,1-60,5)
Do you feel tired all the time?	34(30,6)	(22,6-39,6)
Do you find it difficult to carry out your daily activities with satisfaction?	43(38,7)	(30,1-48,0)
Somatic symptoms		
Do you have unpleasant sensations in your stomach?	34(30,6)	(22,6-39,6)
Do you have a poor appetite?	16(14,4)	(8,8-21,8)
Do you have poor digestion?	29(26,1)	(18,6-34,8)
Do you get frequent headaches?	28(25,2)	(17,9-33,9)
Depressive thoughts		
Do you have trouble thinking clearly?	24(21,6)	(14,8-29,9)
Do you have difficulty making decisions?	35(31,5)	(23,4-40,6)
Are you unable to play a useful role in your life?	18(16,2)	(10,3-23,9)
Have you lost interest in things?	28(25,2)	(17,9-33,9)
Do you feel like a useless, useless person?	20(18,0)	(11,7-25,9)
Have you had any ideas about ending your life?	9(8,1)	(4,1-14,3)

DISCUSSION

Mental distress is composed of a clinical triad: depressive, anxiety, and somatization symptoms. It was verified in this study that the severity of psychopathological damage, evaluated from the SRQ-20, increased the symptoms of mental distress of diabetic people during the period of the Covid-19 pandemic.

The sample was made up mostly of adults, with a mean age of 39.6 years, female, corresponding to 70.3%. This result is similar to the profile obtained in a study on the characterization of mental health in patients with diabetes mellitus, in which 78% of the sample was female and 98% was between 18 and 60 years old.¹⁰

Since the beginning of the pandemic, a relationship between infected persons and the coexistence of comorbidities has been observed, as evidenced in a study conducted in Wuhan, China with 138 patients infected with Covid-19, of whom a large proportion had hypertension, diabetes, cardiovascular disease, or malignancies, and 14 had diabetes.¹³

The Covid-19 pandemic and the social distancing measures caused psychological changes in the mental health of the diabetic population, which can bring immediate or extreme consequences, both in people who already suffered from psychiatric problems and in those with no history of mental illness.¹⁴ This

study evidenced a 37.8% percentage of patients evaluated with psychological distress, which can be characterized as an indicator of correlation between the presence of emotional symptoms and the experience of the new coronavirus pandemic.

Isolated individuals, due to the quarantine state, are particularly vulnerable to mental health complications. General psychological symptoms, emotional disturbances, depression, stress, low mood, irritability, insomnia, post-traumatic stress symptoms, anger, and emotional exhaustion are some of the emotional symptoms that can emerge during this period. It is noteworthy that the longer the duration of quarantine, the more frequent and accentuated are these psychological manifestations.⁷

The depressive mood and anxiety are classic symptoms for some disorders that directly affect the individual's quality of life, as occurs in depression. Changes in the depressive-anxious mood are considered predisposing factors for stress-related diseases, especially those caused by negative life events, which contribute to the manifestation and progression of the disease.¹⁵

The depressive-anxious mood group of the SRQ-20 is characterized by the presence of symptoms such as nervousness, tension, worry, sadness, crying, and frightening easily. From this perspective, 64% of the respondents in this study stated that they felt nervous, tense, and worried. People who live with these

feelings have higher subjective indicators of suffering, impaired well-being, social and occupational functioning.¹⁶ This rests on several factors, such as the fear of contracting the infection, feelings of frustration and annoyance, financial losses, and the transmission of incorrect information about the disease.⁷

It is inferred that these psychological and behavioral manifestations were the same as those identified in a study⁹ that found that the mental health and sleep quality of 52.6% of adults and elderly were impaired during the pandemic of COVID-19, in addition to presenting frequent anxious and/or nervous symptoms. For the population with diabetes, this data is worrisome, since it impacts their physical and mental well-being, since the deficient sleep quantity maintenance, by causing cortisol elevation, interferes with glucose metabolism and glycemic control.¹⁷

Moreover, in another study that evaluated common mental disorders in the elderly, the result was similar, since the anxious and depressive mood changes were the most reported, especially being easily scared (57.4%) and feeling nervous, tense or worried (54.5%).¹⁸

In the dimension of decreased vital energy, it was evidenced in this study that 51.4% of the participants had as their main complaint getting tired easily. This is in agreement with the study¹⁹, which states that feelings of tiredness and fatigue are considered part of the psychological functioning dimension and something significantly expressive in people with diabetes mellitus, besides the unavailability to perform group tasks both with family members and friends. These symptoms directly affect the lives of individuals, hindering the performance of activities of daily living and instrumental activities, as well as daily relationships, requiring interventions to restore the impaired functions.²⁰

In this sense, 38.7% of the participants stated difficulties in performing daily activities with satisfaction in the work environment. From this perspective, it can be noticed that the feeling of helplessness, work activities, and health are connected to people's lives and expressly reflect on physical and mental health, because work can be a source of pleasure as well as cause suffering and harm to the lives of individuals.²¹

People who present anxious and depressive symptoms may also present somatic symptoms, such as unpleasant stomach sensations, lack of appetite, poor digestion, and frequent headaches, which are very frequent in people with DM.²² Regarding somatic symptoms, 30.6% reported having symptoms related to unpleasant stomach sensations. People diagnosed with DM may develop alterations in the motility and physiology of the gastrointestinal system. These changes are corroborated in a study²³ that indicates a higher prevalence of gastrointestinal symptoms in patients with diabetes mellitus than in the general population. The pathogenesis of changes in gastrointestinal functions in patients with diabetes mellitus is still being investigated, while the role of the enteric nervous system and its neurotransmitters is gaining importance. As a consequence of digestive tract complications that impair the enteric nervous system, patients with diabetes mellitus may present specific gastrointestinal motility disorders, some of which may be of great relevance, such as diabetic gastroparesis, constipation, and diarrhea.²³

Another relevant data from this study is found in the "depressive thoughts" domain and is related to the higher prevalence in the difficulty to concentrate, present in the statement "difficulty to think clearly", in which 21.6% of the participants reported a positive response. People with diabetes are more likely to develop depressive and/or anxious symptoms (ADS), since ADS were more prevalent in the study population with hypertension and diabetes than in the general population, according to the literature.²⁴ It is noteworthy that mental health care for this population should be better worked out and/or established in the context of Primary Health Care.

It is necessary that professionals cover in their practices the biopsychosocial aspects of users. Strategies such as health promotion, intersectoral actions, mental health training, inclusion of NASF teams in the FHS, case discussions, inter-consultations, and joint construction of therapeutic projects are ways to work on the integral health of this population.

A systematic review with meta-analysis²⁵ evaluated the relationship between diabetes and depression and provided very robust evidence to support the hypothesis that diabetes is an independent risk factor for depression and found that the risk of depression is 1.33 times higher in people with DM, and that, worldwide, a 10 to 25% reduction in the prevalence rate of diabetes can prevent 930,000 to 2.34 million cases of depression. Another study evaluated the quality of life, the presence of depressive symptoms, and the adherence to treatment of people with type 2 DM and evidenced that 37.4% of these people have emotional problems and some level of psychological alteration, corroborating the vulnerability of depressive symptoms in this group.²⁶

As limitations of the study, the results presented here were limited to those who participate in virtual diabetes communities and who had access to the Internet during the study period, because it was used an online survey to collect data that may impact the generalization of the findings; the pre-pandemic data were not collected, not being possible to make comparisons about the psychological impact before and during the pandemic.

CONCLUSION

The study showed that the Covid-19 pandemic has directly impacted the mental health of people with diabetes mellitus, significantly increasing symptoms of mental distress. Considering that these individuals have a predisposition to these psychological aggravations, it becomes relevant to develop interventions that minimize the psychosocial impacts caused in this population segment and that enable improvement in quality of life.

The mental and emotional health of DM carriers, according to the analysis of the study, has been shown to be fragile during social distancing, and stress, anxiety, depression, and behavioral disorders could be identified in the sample studied. In this context, the overall quality of life of DM patients is affected during social withdrawal, influencing their general health status, which represents a risk to the DM patient.

Thus, it is suggested the development of longitudinal studies to monitor the evolution of the mental health of the population and the effectiveness of primary health actions aimed at people with diabetes.

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