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The COVID-19 pandemic and its impact on mental health of healthcare workers

A pandemia de COVID-19 e seu impacto na saúde mental dos profissionais de saúde

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ABSTRACT

The COVID-19 pandemic has imposed a health crisis around the world. Health professionals are frequently exposed to stressors that put them at high risk for the development or progression of disabling mental disorders, including posttraumatic stress disorder (PTSD). To understand how pandemic stressors have affected the mental health of healthcare workers, our group conducted a longitudinal and nationwide survey. We investigated the occurrence of traumatic events related to the COVID-19 pandemic and the association between exposure to these events and PTSD symptomatology. Importantly, we also investigated factors that might increase or decrease the risk for PTSD. Depression symptoms were also investigated. The results of the first wave of the project were published in a series of three articles, each focused on different risk or protective factors. The results showed that female sex, young age, a lack of adequate personal protective equipment, social isolation and a previous history of mental illness were consistent predictors of PTSD symptoms. Healthcare workers who reported high levels of peritraumatic tonic immobility, a defensive response that is involuntary, reflexive, and evoked by an intense and inescapable threat, also exhibited an increase in the probability of being diagnosed with PTSD. On the other hand, professional recognition had a negative relationship with PTSD and depression symptoms, emerging as a significant protective factor for psychological health. The identification of protective and risk factors in these situations is crucial to guide the adoption of long-term measures in work environments that will enhance the psychological health of these professionals.

KEYWORDS

COVID-19 pandemic, PTSD, depression, risk factor, tonic immobility.

RESUMO

A pandemia de COVID-19 impôs uma crise de saúde no mundo. Profissionais de saúde foram frequentemente expostos a estressores que os colocam em alto risco para o desenvolvimento ou progressão de transtornos mentais incapacitantes, incluindo o transtorno de estresse pós-traumático (TEPT). Para entender como esses estressores afetaram a saúde mental desses profissionais, nosso grupo realizou um estudo longitudinal nacional. Investigamos a ocorrência de eventos traumáticos especificamente relacionados à pandemia e a associação entre a exposição a esses eventos traumáticos e a sintomatologia do TEPT. É importante ressaltar que também investigamos fatores que podem aumentar ou diminuir o risco de TEPT. Sintomas de depressão também foram investigados. Os resultados da primeira onda do projeto foram publicados em uma série de três artigos, cada um focado em diferentes fatores de risco ou proteção. Os resultados mostraram que sexo feminino, idade jovem, falta de equipamento de proteção individual adequado, isolamento social e história prévia de doença mental foram preditores consistentes de sintomas de TEPT. Os profissionais de saúde que relataram altos níveis de imobilidade tônica, uma resposta peritraumática involuntária e reflexa evocada em situações de ameaça intensa e inescapável, exibiram aumento na probabilidade de um provável diagnóstico de TEPT. Por outro lado, reconhecimento profissional teve relação negativa com sintomas de TEPT e depressão, emergindo como importante fator de proteção para a saúde mental. Identificar fatores protetores ou de risco nessas situações é fundamental para orientar a adoção de medidas de longo prazo nos ambientes de trabalho que melhorem a saúde mental desses profissionais.

PALAVRAS-CHAVE

Pandemia de COVID-19, TEPT, depressão, fatores de risco, imobilidade tônica.

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Approximately three years ago, the COVID-19 pandemic led to a worldwide health crisis. Health professionals were mobilized to fight the virus, resulting in considerable impacts on their mental health. They were frequently exposed to stressors such as long working hours, a lack of resources to execute their jobs, a lack of adequate training, a high demand for care, a high risk of contamination for themselves and of people close to them, and isolation from loved ones. Exposure to these factors put health professionals at high risk for the development or progression of disabling mental diseases, such as posttraumatic stress disorder (PTSD).

According to the DSM-5, PTSD develops in some people after exposure to a real or threatening episode of death, severe harm or sexual violence. The distressing event may be directly or indirectly experienced. PTSD symptoms may include flashbacks, nightmares, re-experiencing the traumatic event, uncontrollable thoughts about the event, dissociation, and intense negative emotional and physiological reactions to being exposed to reminders of the traumatic event. To comply with the diagnostic criteria of PTSD, symptoms should persist for longer than 30 days. A recent review reported that the estimated prevalence of PTSD among healthcare workers working in hospital settings during pandemics may reach 56.6%¹. Therefore, identifying the factors that might increase or decrease the chances of developing PTSD in a pandemic context is crucial.

To understand how pandemic stressors affect the mental health of healthcare workers (*e.g.*, doctors, assistants, psychotherapists, and organizational personnel), our group conducted a longitudinal and nationwide survey: the PSICOVIDA project. The sample consisted of 1,001 healthcare workers from all 26 Brazilian states. We investigated the occurrence of distressing events specifically related to the COVID-19 pandemic and the interaction between exposure to these traumatic events and PTSD symptomatology. Traumatic events included personally witnessing or being told by other people about the deaths of patients, family members or work colleagues due to COVID-19 disease; being exposed to patients who were critically ill; and being contaminated or contaminating someone else. Importantly, we also investigated factors that might increase or decrease the risk for PTSD. The results of the first wave of the project were published in a series of three articles, each focused on different risk or protective factors.

It is important to highlight that understanding what constitutes a traumatic event in the context of the pandemic is an important issue that is under discussion in the scientific literature². In the past few years, many studies exploring PTSD

related to the pandemic have not adequately considered the DSM-5 criteria for PTSD, and they have not used proper anchoring to a traumatic event involving an actual or a potential risk of death or severe harm. An important strength of our studies was the evaluation of traumatic events specifically related to the pandemic and in accordance with DSM-5 criteria for PTSD diagnosis.

In the first article, we applied machine learning, an artificial intelligence methodology, to investigate vulnerability and protective factors related to PTSD and depression symptoms. The aim of the study was to predict PTSD and depression symptoms based on healthcare workers' reports of self-perceived stress due to being separated from one's family, professional appreciation before and during the COVID-19 pandemic, and altruistic risk compliance during the pandemic. The results showed that stress due to social isolation and professional appreciation were the variables with the strongest contributions to the predictive function. This result emphasizes the protective function of professional appreciation while revealing that perceived stress due to social isolation acts as a risk factor for posttraumatic stress and depression symptoms³.

In the second article, we investigated an important susceptibility factor for PTSD that is largely understudied in humans: the tonic immobility (TI) reaction. TI is an automatic and uncontrolled defensive reaction initiated by an intense and inescapable threat. Our study investigated for the first time whether this peritraumatic reaction occurred during a trauma related to the COVID-19 pandemic and whether its occurrence was associated with increased posttraumatic stress symptoms. We observed that a significant TI reaction was reported by 41% of healthcare professionals, with 19% of the sample achieving elevated tonic immobility scores. Importantly, healthcare professionals who presented elevated tonic immobility scores exhibited a 9.08-fold increase in the probability of having a probable diagnosis of PTSD. Thus, screening for TI occurrence after trauma exposure and psychoeducation about its automatic biological essence is crucial⁴. This is particularly important, as the occurrence of TI might contribute to sentiments of self-blame and guilt for not responding as expected, thus amplifying a person's suffering.

Finally, the third study sought to identify factors that might impact the probability of having a probable diagnosis of depression and PTSD related to traumatic COVID-19 experiences among different categories of Brazilian healthcare professionals. Female sex, young age, a lack of adequate personal protective equipment, and a

prior history of mental illness were consistent predictors of PTSD symptoms. In particular, nurse specialists had a higher probability of developing PTSD than other healthcare professionals⁵.

These types of studies are essential to understand the consequences of events experienced in a pandemic context for the psychological health of healthcare professionals. Finally, the identification of protective and risk factors in these situations is crucial to guide the adoption of long-term measures in work environments that will enhance the mental health of these professionals.

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