



General anxiety and depression are associated with the physical activity and social interaction levels

Study in Argentinean university students during the COVID-19 outbreak

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COVID-19 had dramatic effects globally. Despite the primary clinical syndrome of COVID-19 being a respiratory disorder, it is already evident that the direct and indirect psychological and social effects of this pandemic are pervasive and could affect mental health now and in the future.

Generalized Anxiety Disorder (GAD) is one of the most common mental disorders. Depression is one of the most prevalent and treatable mental disorders and is regularly seen by a wide spectrum of healthcare providers, including mental health. There are many research studies that recorded GAD and depression levels during the COVID-19 pandemic. These levels were reported in studies conducted on the general population from countries as diverse as China, Hong Kong, Greece, Argentina, Cypriot, Ireland, Austria, Germany and the US. In this work, we explored the levels of depression and Generalized Anxiety Disorder (GAD) and their relationship with physical activity and social interaction during the pandemic.

On the other hand, it was reported that walking, moderate, vigorous, and total physical activity levels have been reduced during COVID-19 pandemic confinements in university students of different countries. Physical activity is known to aid psychological well-being, and it is a coping strategy during this pandemic, so we also asked about the frequency that university students performed physical activity, and we contrasted it with self-perceived levels of anxiety and depression.

In particular, we are interested in evaluating the levels of GAD and depression at the time of closing the lockdown. This is after people have gone through almost 8 months of policies that strongly restrict social interaction. We are also interested

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in focusing the study on the population of two groups of university students from Buenos Aires, Argentina. The survey was conducted in October/November 2020, after a peak of contagions. Some of the participants were surveyed again in January 2021 for longitudinal analysis.

Our results show that the self-perceived levels of depression registered in October-November 2020 positively correlated with those of GAD in both genders and in both groups of students. Moreover, by analysing the relation between physical activity frequency and the self-perception of mental health, we observed that those individuals who performed exercise more than twice a week reported lower levels of GAD and depression. Finally, the longitudinal analysis, carried out with those students who answered the surveys twice, revealed that both depression and GAD mean scores significantly decreased in the second survey performed two months later, probably reflecting the decrease in fatality rates and the holiday period that preceded that survey.

In summary, our study shows that university students of the Buenos Aires Metropolitan Area in Argentina had values of GAD and depression that correlated in a linear and positive way in two different time periods of the COVID-19 pandemic. In addition, the longitudinal analysis revealed that GAD and depression levels decreased in January 2021 when daily contagion cases had decreased and during a minimum of reported deaths. The analysis also revealed that a frequency of physical activity higher than twice a week was associated with a decrease in the average score of these emotional states. It also suggested that higher social interaction was associated with decreased levels of GAD and depression. Based on our results, we argue that governments should consider the importance of physical exercise and social interactions in the mental health of university students. We should therefore implement policies to promote these activities under health and safety standards, such as social distance in open spaces. This will restrict viral propagation.