

Mental Health Factors Influencing Changes in Physical Activity Among University Students in the COVID-19 Pandemic

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Background

Lifestyle restrictions due to Covid-19 are thought to affect the amount of physical activity in daily life. It has been reported that depression and suicide are increasing, especially among the younger generation. The issue of how to keep physical and mental health in the constraint's situation has become a big challenge in the world. Although there are many reports of the impact of physical inactivity on mental health, it is not clear what mental health factors are involved in changes in physical activity in the restriction situation. It is important for physical and mental health to know how to cope with stress and to continue active life in the restriction situation such as Covid-19 period.

Purpose

The purpose of this study is to investigate mental health factors in relation to changes in physical activity among university students in Japan.

Methods

The subjects were 65 healthy students (35 males (53.8%) and 30 females (46.2%), mean age 19.6 ± 2.25 years) from the first to the third year at university student who received informed consent during the year from April 2020 to March 2021.

Instruments

In this study, the subjects were asked to complete questionnaires on the IPAQ regarding the amount of physical activity in daily life, the change in physical activity compared to before and after of covid-19, SDS (depression), STAI (anxiety), and SOC (stress coping).

Analysis

Subjects were divided into two groups: those who reported no change or an increase in physical activity before and after covid-19 (increase group) and those who reported a decrease in physical activity before and after covid-19 (decrease group). The results were compared using t-tests and Mann-Whitney tests for each study site. A logistic regression analysis was performed to find the importance factors with the change in physical activity before and after covid-19, amount of physical activity as the objective variable and SDS, STAI and SOC as the explanatory variables.



Results

	Estimate	Std.Error	z value	Pr(> z)	odds-ratio	2.5 % CI	97.5 % CI
SDS	-0.153	0.065	-2.351	0.019	0.858	0.747	0.968
meaningfulness	-0.269	0.124	-2.176	0.030	0.764	0.583	0.956
manageable	0.227	0.108	2.091	0.036	1.254	1.033	1.592

In the comparison between the increased and decreased groups, SDS ($t = 2.55$, $df = 62$, $p\text{-value} = 0.0131$, 95IC 1.17- 9.68), SOC total score ($t = -2.04$, $df = 62$, $p\text{-value} = 0.0454$, 95IC = -12.9 - -0.137) and manageability ($t = -2.13$, $df = 62$, $p\text{-value} = 0.0367$, 95%IC = -5.71 - -0.187) and Meaningfulness ($t = -2.28$, $df = 62$, $p\text{-value} = 0.0259$, 95%IC = -4.90 - -0.324) subscale of SOC were shown significant differences. Logistic regression analysis showed that the variables influencing the change in physical activity were SDS (odds-ratio = 0.85, $p = 0.0187$, 95%IC = 0.746 - 0.967), SOC meaningfulness (odds-ratio = 0.76, $p = 0.0295$, 95% IC = 0.583 - 0.955), manageable (odds-ratio = 1.25, $p = 0.0364$, 95%IC = 1.03 - 1.59).

Conclusions and Implication

Significant factors for the lack of decrease in activity in this restrictive situation were the absence of depression, manageability, and a low sense of meaningfulness. The results suggest that having a challenging mental attitude can help to prevent a decline in physical activity. To increase the amount of physical activity, it is important to be in a good mental state such as a feel that you can do well in this situation and the sense that you do not have to sacrifice yourself. The sense of manageability and the sense of not wanting to be tied down or forced to make self-sacrificing sacrifices are factors that contribute to an increase in activity even in restrictive situations.

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Ethical Approval

This study has been approved by the research ethics committee of Kobe Gakuin University.

Competing Interests

The authors declare no conflicts of interest associated with this manuscript.