

THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND DEPRESSION OF CHINESE STUDENTS STUDYING IN RUSSIA

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To understand the effect of physical activity on the depression status of Chinese students studying in Russia. The authors used the SDS depression self-assessment scale and physical exercise assessment scale to survey 350 Chinese students in some Russian universities, and collected the questionnaires on their mobile phones. The basic situation was investigated and the data was analyzed statistically. Use SPSS to assess the correlation between physical activity and depression. It was found that appropriately increasing the amount of physical activity can effectively improve depression and be beneficial to the development of mental health of Chinese students studying in Russia.

Keywords: *physical activities, depression, mental health, effects, college students.*

Introduction. With the development of modern society, the material life of people is constantly being improved, and spiritual life has unprecedented problems, and various psychological problems arise in people. Students belong to special social groups, their physical and mental development is still immature, psychological fluctuations are great, and mental health is subject to various factors. In recent years, the psychological problems of students have received wide attention from all walks of life. As a special group of international students, they are far away from their motherland to study abroad, and they are more likely to have mental health problems [1; 3].

Depression is characterized by long-term depression and can have a greater impact on the normal learning and life of students. As we all know, exercise can speed up blood circulation, increase metabolic rate and improve physical health. Exercise is a positive way to deal with bad emotions that can effectively improve a bad mood [4]. This work explores the relationship between physical activity and depression status of Chinese college students studying in Russia, which is the basis for future research on depression in international college students.

The purpose of the study. To understand the effect of physical activity on the depression status of Chinese students studying in Russia.

Research methods and organization. Using the SDS depression self-assessment scale and physical activity assessment scale (PARS-3), 350 Chinese students studying in Russia were investigated and collected, and relevant information was studied.

SDS depression self-assessment scale

The scale was compiled by W.K. Zung [10] in 1965. It includes 20 items. Each item is divided into four grades according to the frequency of symptoms, including 10 forward scores and 10 reverse scores.

Physical activity rating scale (PARS-3)

The scale was compiled by Liang Deqing et al. [6]. The scale assesses the amount of exercise from three aspects: exercise time, exercise intensity, and exercise frequency. Each aspect is scored in 5 levels. Physical activity rating score = exercise time × exercise intensity × exercise frequency. Physical activity evaluation criteria: low physical activity ≤ 19 points, medium physical activity is 20 to 42 points, and high physical activity ≥ 43 points. The scale has good reliability and validity.

Questionnaires were issued and collected using a mobile phone. The database was established using Epidata3.1 and statistical analysis was performed using SPSS13.0. Measurement data conforming to the normal distribution are expressed as (mean ± standard deviation). Comparisons between groups were performed using t test and analysis of variance. Pearson correlation analysis was used to examine the correlation between physical activity levels and SDS scores.

Research results and discussion. Among the respondents, 135 were boys (38.57%) and 215 were girls (61.43%). According to the rules of the Physical Activity Rating Scale, a score of ≤19 is low physical activity, a score of 20 ≤ score ≤42 is medium physical activity, and a score ≥43 is high physical activity. Among the 350 respondents, 218 had low physical activity (62.29%), 73 had medium physical activity (20.86%) and 59 had high physical activity (16.86%).

Among boys, 35 had high physical activity (25.93%), 31 had medium physical activity (22.96%) and 69 had low physical activity (51.11%). Among these girls, 24 had high physical activity (11.16%), 42 had medium physical activity (19.53%) and 149 had low physical activity (69.30%). The physical activity of boys (26.04 ± 21.73) was significantly higher than that of girls (17.76 ± 18.52), and the difference was statistically significant ($P < 0.01$) (Table 1).

Table 1

Relationship between physical activity and gender

	Physical activity score	P
Gender Male	26.23±20.97	<0.01
Female	17.87±18.63	
Total	20.89±20.11	

Depression was assessed on a 53-point scale. Those with scores lower than 53 on the questionnaire had normal mental states, and those with scores greater than 53 on the questionnaire had symptoms of depression. The higher the score, the more severe the symptoms of depression.

The scale scores 53 to 62 are associated with mild depression, scores 63 to 72 are moderate depression, and scores above 72 are associated with major depression. In this study, 45 students showed varying degrees of depression, with a frequency of 12.86%. Among them, there were 31 cases of mild depression (68.89%), 12 cases of mild depression (26.67%) and 2 cases of severe depression (4.4%). In different exercise levels, the standard SDS score of the high physical activity group (35.21 ± 6.44) was significantly lower than that of the medium physical activity group (38.34 ± 5.56) and the low physical activity group (48.86 ± 8.49), and the difference was statistically significant ($P < 0.01$) (Table 2).

Correlation with SPSS19.0 of physical activity scale score and SDS standard score was analyzed, $r = -0.533$, $P < 0.05$. This indicates that the physical activity score is negatively correlated with the SDS score, that is, the lower the physical activity, the higher the standard SDS score, and the more severe the depression (Table 3).

Depression is characterized by significant and long-lasting depression, sleep disturbance, and weakened will activity. Globally, the disability caused by depression ranks second in all diseases [7].

Nowadays, college students face various pressures such as study, communication, and employment, and

Table 2

SDS standard scores by gender and level of physical activity

	SDS score	P
Gender Male	41.90±9.27	0.104
Female	43.61±9.71	
Physical Activity Low Physical Activity	48.86±8.49	<0.01
Medium Physical Activity	38.34±5.56	
High Physical Activity	35.21±6.44	

Table 3

Relationship between SDS and physical activity

	Score	P
Physical Activity	20.21±20.11	<0.01
SDS Score	42.46±10.12	

are prone to various psychological problems. Studies have found that depression is a major psychological problem for college students. It can seriously affect the quality of life, negatively affect family members and surrounding relatives, and potentially affect future life. Therefore, it is particularly important to understand the factors related to depression and pay attention to the mental health of college students. Some studies have suggested that [3; 4; 8; 9] physical exercise can improve mood, bring positive subjective feelings to individuals, enhance confidence, and promote pride; it can interfere with the mood of college students and have a good effect of improving depression.

In this study, through SPSS correlation analysis, it was found that the amount of physical activity was negatively correlated with the SDS standard score, that is, the smaller the amount of physical activity, the higher the SDS standard score, and the more obvious the symptoms of depression. The conclusion of this study is consistent with Good-win's conclusion [5].

At present, the treatment of depression is mainly to change the content of related neurotransmitters through drugs, but there are certain adverse reactions to drug treatment. Exercise for the treatment of depression, with its advantages of no side effects, has an irreplaceable role in medicine in the clinic. Studies have shown that exercise has a good effect on the treatment of depression [2], which has important value in clinical.

Conclusion The results show that there is a negative correlation between physical activity and SDS score, that is, low physical activity, the higher the SDS score,

the more severe the depression state. All Russian universities should pay attention to the physical activities of international students and organize various physical exercises in an organized manner. Encouraging international students to participate in physical exercise can not only improve physical fitness, but also effectively improve depression, which is of great significance for improving mental health and reducing the frequency of depression.

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Взаимосвязь между физической активностью и депрессией у китайских студентов, обучающихся в России

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Чтобы понять влияние физической активности на состоянии депрессии китайских студентов, обучающихся в России. Авторы использовали шкалу самооценки депрессии SDS и шкалу оценки физических упражнений для опроса 350 китайских студентов в некоторых российских университетах и собирали анкеты на свои мобильные телефоны. Основная ситуация была исследована и данные были проанализированы статистически. Используйте SPSS для оценки корреляции между физической активностью и депрессией. Было установлено, что надлежащее увеличение количества физической активности может эффективно улучшить депрессию и быть полезным для развития психического здоровья китайских студентов, обучающихся в России.

Ключевые слова: физическая активность, депрессия, психическое здоровье, последствия, студенты.

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