

skill, and improve the students' social adaptability. In basketball competition, for example, teachers in the teaching process, to actively guide students through communication gradually clear each student accounts for a position, in order to improve students' communication ability, and in team training to guide students according to their own problems to communicate with classmates, guarantee in improving students' basketball skills to improve their social skills at the same time, for the students to lay a good foundation for future learning and development. In athletic work, to clear their own elementary school physical education teachers in teaching the importance of to their own subjective initiative into full play in sports teaching, improve students' social adaptability, for students to study higher order learning and future work to lay a solid foundation of knowledge, promote the rapid development of the students. In order to improve students' social adaptability, teachers should gradually cultivate students' awareness of social competition in sports teaching, and realize that they can stand out in the group in sports, study and work, so that students can constantly improve their own ability in competition and promote students' all-round development. For example, in basketball, teachers should select athletes in different positions through group elimination, so as to ensure that students have a certain sense of competition. In order to improve students' social adaptability, primary school PE teachers should pay attention to the cultivation of students' survival ability in the primary school stage, ensure that students have certain social competitive advantages, and promote students' all-round development. Strengthen the student to the knowledge in the teaching stage use can effectively improve the students' ability to survive, as a result, teachers in teaching students' knowledge, to actively guide students to use knowledge, and gradually improve students' ability of applying their knowledge, ensure that students can take knowledge into their own advantages, to promote the further development of students.

Conclusion: The school team training is professional and competitive, reduces the psychological pressure of students' theoretical knowledge learning, and promotes students' rapid development. School team training students' social adaptation ability training can effectively cultivate students to form good habits of physical exercise and a positive influence on students' future development, guarantee the students to participate in the sports team gradually in the process of consciousness, to ensure that the students can improve their social adaptability, help students to improve their competitive ability, promoting the further development of the students. Demand for the school team competition for primary school students, teachers should actively change their teaching concept, to create a good atmosphere for students in competition, make sure that students can gradually cultivate the students' social responsibility in training competition, survival ability, thus effectively improving the students' social adaptation ability, for the students lay a solid foundation for future study and work.

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EFFECTS OF PHYSICAL ACTIVITY ON MENTAL HEALTH OF COLLEGE STUDENTS UNDER THE BACKGROUND OF EPIDEMIC PREVENTION AND CONTROL

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Background: Since December 2019, COVID-19 has become the world's most serious public health emergency due to its high infectiousness, difficult prevention and control, and wide radiation coverage. It has impacted People's Daily life and seriously threatened their safety and physical and mental health. As the epidemic prevention and control has entered a regular phase, most universities in China have implemented measures such as delaying the opening time and semi-closed campus management to stop the spread of the epidemic. Studies have shown that college students suffer from different degrees of psychological problems during the epidemic prevention and control period, and physical exercise is a necessary condition to improve their mental health. Scholars Liu Xinhao et al. found that physical exercise during the semi-closed campus can effectively regulate the psychological stress, depression and anxiety of college students, and the mental health level of college students who regularly participate in physical exercise is significantly better than that of college students who occasionally participate in physical exercise or never participate in physical exercise. Research by Miao xiaolei and others shows that physical exercise significantly affects physical and mental health in the fight against COVID-19. Shen Wei pointed out that physical exercise plays an indispensable role in improving college students' mental health, reducing anxiety, removing psychological obstacles and improving positive emotions. Physical exercise can effectively promote the physical and mental health of the elderly. To sum up, many studies have confirmed the relationship between physical exercise and mental health of college students, but there is a lack of research

on the impact of physical exercise on mental health under different amounts of physical exercise (such as time and frequency of physical exercise, etc.).

Objective: Based on this, this study conducted an online questionnaire survey among 1260 college students from April 6 to 20, 2021, aiming to analyze the impact of physical activity on college students' mental health under the background of normalized epidemic prevention and control, in order to provide reference for education departments and colleges to improve college students' mental health. In order to understand the impact of the amount of physical exercise on the mental health of college students in the context of the normalization of COVID-19 prevention and control, and to provide reference for improving the mental health of college students.

Subjects and methods: 1260 undergraduate students in Dalian were selected as the survey object, and 1260 questionnaires were distributed online, and 1260 questionnaires were recovered, with a recovery rate of 100%. Before filling in the questionnaire, all respondents were informed of the purpose of the survey, anonymous participation, respect for personal privacy and other contents, and the informed consent of respondents was obtained.

By means of demographic data questionnaire, self-designed college students' physical activity questionnaire and simple psychological status assessment scale, 1260 college students in Dalian were surveyed by network questionnaire.

The basic social demographic data included gender (697 male students and 563 female students), grade (341 freshmen, 385 sophomores, 300 juniors and 234 seniors) and major (505 physical education students and 755 non-physical education students).

Based on the domestic and foreign literature about the influence of physical exercise on college students' mental health, a questionnaire was designed for college students' physical exercise. The questionnaire included physical activity time (≤ 15 min/time, 16-29 min/time, 30-59 min/time, ≥ 60 min/time), physical activity frequency (≤ 1 time/week, 2 times/week, 3 times/week, ≥ 4 times/week).

The scale consists of 10 items, each item is graded 1-5 with a total score of 50 points. According to the total score, mental health status is divided into 4 grades: a total score of 10-15 is regarded as level 1, indicating good mental health status. 16-21 is rated 2, indicating average mental health. 22-29 on a scale of 3, indicating poor mental health. A scale of 30 to 50 indicates poor mental health. Among them, 1 is classified as mental health, and 2-4 is classified as mental unhealthy. In this study, the Cronbach's coefficient of the scale was 0.92, indicating good internal consistency.

SPSS 22.0 software was used for data collation and statistical analysis. Descriptive analysis of counting data. Chi-square test was used to compare the amount of physical exercise and mental health of college students in different groups. Binary logistic regression analysis was used to explore the relationship between the amount of physical activity and mental health of college students. $P < 0.05$ indicated statistical significance.

Result: In terms of physical exercise time, 44.2 percent of male college students and 26.3 percent of female college students spend more than 30 minutes each time. In terms of grades, 41.3 percent of freshmen, 38.5 percent of sophomores, 32 percent of juniors and 30.4 percent of seniors exercised for 30 minutes or more. A total of 300 students in PE majors played sports for more than 30 minutes, accounting for 59.3% of the total number of PE majors, while 156 students in non-PE majors played sports for more than 30 minutes, accounting for 20.6% of the total number of non-PE majors. The X^2 values of different genders, grades and subjects were 42.21, 36.63 and 57.95, respectively, with statistical significance ($P < 0.01$).

In terms of the frequency of physical exercise, 69 percent (481) of male college students and 60.7 percent (342) of female college students played sports more than three times a week. A total of 267 freshmen played sports three or more times per week, accounting for 78.3% of the total number of freshmen. In addition, 77.6 percent (299) of sophomores, 46.7 percent (140) of juniors, and 50 percent (117) of seniors exercised more than three times a week. 36.2% of students majoring in physical education played sports three times a week, 42.4% played sports four or more times a week, 28.3% of students majoring in non-physical education played sports three times a week, and 28.1 played sports more than four times a week. X^2 of different genders was 31.83, X^2 of different grades was 26.63, and X^2 of different disciplines was 37.95, the differences were statistically significant ($P < 0.01$). See Table 1-2.

Comparison of mental health status of college students in different groups. According to the scoring standard, 705 students (56.0%) were mentally healthy, 555 students (44.0%) were mentally unhealthy, and the detection rate of general, poor and poor mental condition was 21.2% (267), 14.4% (181), 8.5% (107) respectively. The number of male students with mental health was 408, accounting for 58.6 of the total number of male students, while that of female students was 297, accounting for 52.8% of the total number of female students. The male students with poor mental health accounted for 5.4% (38) of the male students, and the female students with poor mental health accounted for 12.2% (69) of the female students. There were 186, 273, 176 and 70 students in freshmen, sophomore, junior and senior, respectively, accounting for 54.5%, 70.9%, 58.7% and 30.0% of the total number of students in their respective grades. There were 155,

112, 124 and 164 students in the four grades who were mentally unhealthy, accounting for 45.5%, 29.1%, 41.3% and 70.0% of the total number of students in their respective grades. 311 students (61.6%) were psychologically healthy, and 194 students (38.4%) were mentally unhealthy, with 56 students (11.0%) suffering from poor mental health. A total of 394 (52.2%) non-physical education students were mentally healthy, and 361 (47.8%) were mentally unhealthy. Among them, 51 (6.7%) non-physical education students had poor mental health. The X^2 values of different genders, grades and subjects were 19.83, 24.32 and 31.48, respectively, and the differences were statistically significant ($P < 0.01$). See Table 3.

Table 1. Comparison of sports time distribution of college students in different groups

Group	Number of people (n=1260)	Time /min for each exercise				X squared value
		15 or less	16 - 29	30 to 59	60 or higher	
Gender						
Male	697	127 (18.2)	262 (37.6)	203 (29.1)	105 (15.1)	42.21**
Female	563	173 (30.7)	242 (43.0)	105 (18.7)	43 (7.6)	
Grade						
A freshman	341	48 (14.1)	152 (44.6)	95 (27.9)	46 (13.4)	36.63**
A sophomore	385	63 (16.3)	174 (45.2)	88 (22.9)	60 (15.6)	
Junior year	300	88 (29.3)	116 (38.7)	69 (23.0)	27 (9.0)	
Senior year	234	101 (43.2)	62 (26.4)	56 (24.0)	15 (6.4)	
Professional						
Sports	505	54 (10.7)	151 (30.0)	204 (40.4)	96 (18.9)	57.95**
Not pe	755	246 (32.6)	353 (46.8)	104 (13.8)	52 (6.8)	

Note: The figures indicate composition ratio %. **means $P < 0.01$.

Table 2. Comparison of frequency distribution of college sports in different groups

Group	Number of people (n=1260)	Physical activity frequency/times per week				X squared value
		1 or less	2	3	4 or higher	
Gender						
Male	697	45 (6.5)	171 (24.5)	193 (27.7)	288 (41.3)	31.83**
Female	563	59 (10.5)	162 (28.8)	204 (36.2)	138 (24.5)	
Grade						
A freshman	341	12 (3.5)	62 (18.2)	109 (32.0)	158 (46.3)	26.63**
A sophomore	385	17 (4.4)	69 (18.0)	142 (36.9)	157 (40.7)	
Junior year	300	34 (11.3)	126 (42.0)	89 (29.7)	51 (17.0)	
Senior year	234	41 (17.5)	76 (32.5)	57 (24.4)	60 (25.6)	
Professional						
Sports	505	19 (3.8)	89 (17.6)	183 (36.2)	214 (42.4)	37.95**
Not pe	755	85 (11.3)	244 (32.3)	214 (28.3)	212 (28.1)	

Note: The figures indicate composition ratio %. **means $P < 0.01$.

Physical exercise influence on college students' mental health: whether psychology health as the dependent variable, to sports time (15 = 0 or less, 16th - 29 = 1, 30 - 59 = 2, 60 = 3 or higher) and sports frequency (1 = 0 or less, 2 = 1, 3 = 2, 4 = 3 or higher) as the independent variable, the gender (girl = 0, boy = 1), grade (senior = 0, a freshman = 1, a sophomore = 2, junior = 3), professional (non-sports = 0, sports = 1) as control variables for binary logistic regression analysis. The results show that the time of physical exercise is positively correlated with the mental health of college students, and the frequency of physical exercise is positively correlated with the mental health of college students. See Table 4.

36.2 percent (456 students) spent more than half an hour exercising, and 65.3 percent (823 students) played sports more than three times a week. 705 students (56.0%) were psychologically healthy, and 555 students (44.0%) were psychologically unhealthy. The detection rates of general, poor and poor psychological condition were 21.2% (267 students), 14.4% (181 students) and 8.5% (107 students) respectively. Binary logistic regression analysis showed that the time and frequency of physical exercise

were positively correlated with the mental health status of college students.

Table 3. Distribution comparison of mental health status of college students in different groups

Group	Number of people (n=1260)	Mental health (n=705)				X squared value
		Good	General	Poor	Poor	
Gender						
Male	697	408 (58.6)	186 (26.7)	65 (9.3)	38 (5.4)	19.83**
Female	563	297 (52.8)	81 (14.4)	116 (20.6)	69 (12.2)	
Grade						
A freshman	341	186 (54.5)	71 (20.8)	52 (15.2)	32 (9.5)	24.32**
A sophomore	385	273 (70.9)	53 (13.8)	35 (9.1)	24 (6.2)	
Junior year	300	176 (58.7)	65 (21.7)	43 (14.3)	16 (5.3)	
Senior year	234	70 (30.0)	78 (33.3)	51 (21.8)	35 (14.9)	
Professional						
Sports	505	311 (61.6)	85 (16.9)	53 (10.5)	56 (11.0)	31.48**
Not pe	755	394 (52.2)	182 (24.1)	128 (17.0)	51 (6.7)	

Note: The figures indicate composition ratio %. **means $P < 0.01$.

Table 4. Logistic regression analysis of physical activity and mental health status of college students

The independent variables	B	SE	Wald	P values	OR (95% CI)
Physical activity time (reference group ≤ 15)					
16 - 29	0.17	0.05	14.53	< 0.01	1.15 (0.84 - 1.36)
30 to 59	0.32	0.34	0.87	0.246	1.43 (1.12 - 1.47)
60 or higher	0.59	0.27	5.62	0.063	1.78 (1.29 - 2.05)
Physical activity frequency (reference group ≤ 1)					
2	0.13	0.14	0.91	0.212	1.28 (0.74 - 1.19)
3	0.25	0.42	6.45	0.091	1.57 (1.12 - 1.62)
4 or higher	0.41	0.04	11.3	< 0.01	1.84 (1.45 - 2.14)
Gender (Reference group = female)					
Male	0.42	0.25	0.63	0.215	1.13 (1.21 - 1.37)
Grade (Reference group = Senior year)					
A freshman	0.42	0.35	36.5	< 0.01	1.65 (1.29 - 1.78)
A sophomore	0.23	0.27	2.12	0.145	1.23 (0.82 - 1.12)
Junior year	0.35	0.11	0.75	0.383	1.47 (1.03 - 1.38)
Major (Reference group = non-sports)					
Sports	0.19	0.21	1.46	0.125	1.19 (0.94 - 1.17)

Conclusion: Study found that in epidemic prevention and control under the background of normalized 36.2% (456) of college students' physical exercise time in half an hour or more, 65.3% (823) college students' sports number greater than or equal to three times a week, to see the new college students' sports activities during the outbreak time significantly decreased, but sports frequency compared to the initial stage of epidemic began to increase. Studies have proved that physical exercise with a frequency of 3-5 times per week and more than 30 minutes per exercise can significantly improve the negative emotions of college students, regulate adverse psychological states and have a positive impact. More and more colleges and universities encourage college students to do more physical exercise in order to improve their mental health. As can be seen from the increase in the frequency of sports, college students actively respond to the relevant policies of the state and school, and actively take physical exercise, so the frequency of weekly sports

increases. However, due to the prevention and control of the epidemic, colleges and universities mostly implement closed campus management and greatly reduce the gathering of recreational and sports activities, so the single exercise time of college students is relatively short, mostly less than half an hour.

In addition, it can be seen from the survey results that sports time and sports frequency show significant differences in gender, grade and major, which is consistent with Lin Xiaogui's previous research results. In the survey, the amount of physical activity of male students was higher than that of female students, which may be due to the difference in interest and cognitive value of sports between male and female students. In terms of grades, junior and senior students exercise less than freshmen and sophomores. Among them, the first grade has the highest amount of physical exercise, while the fourth grade has the lowest, which may be related to the opening of public PE class in the first grade. In addition, as freshmen just enter the university campus, they have higher curiosity and exploration psychology for various sports, so they are more active in physical exercise. In the senior year, due to internship, postgraduate entrance examination, employment and other reasons, the time and frequency of sports decreased significantly. Because of their own major and physical education courses, the physical activity of students majoring in physical education is higher than that of non-physical education majors. It can be seen from the above that the amount of physical exercise of college students is uneven in the context of the normalization of epidemic prevention and control. Therefore, colleges and universities should strengthen the physical health education of college students and cultivate the concept of lifelong physical education of college students.

According to the research findings, the mental health of male students is better than that of female students, and the mental health of freshmen and sophomores is better than that of juniors and seniors. Among them, 32 freshmen and 35 seniors have poor mental health respectively, indicating that freshmen have more negative emotions as they have just entered college and still need to further adapt to college life. Senior year due to college, work and other reasons, the pressure is greater, so easy to produce serious psychological problems. There were 56 students with poor mental health in PE majors, accounting for 11.0% of the total number of students, which was significantly higher than that in non-PE majors (6.7%). This shows that due to the impact of the epidemic, some sports events cannot be carried out in colleges and universities, and closed campus management limits off-campus sports activities, which leads to a lot of bad emotions among students majoring in physical education. In view of the above problems, colleges and universities should pay special attention to the mental health status of female students, senior students and students majoring in physical education, strengthen the mental health education and improve the psychological adjustment ability of college students. At the same time of epidemic prevention, we should strengthen the consciousness of physical exercise of college students and correctly guide them to improve their mental health through sports.

The amount of physical activity of college students will affect their mental health. The results show that the longer and more frequent a single exercise session is, the more likely it is to have a healthy mental state. This shows that reasonable and regular physical exercise can not only improve physical function, improve health level, but also reduce pressure, improve anxiety, depression and other adverse emotions, significantly improve the mental health of college students. In addition, to strengthen the education and guidance of less physical exercise, exercise not active students, cultivate their interest in sports, firmly establish the concept of "harmonious development of body and mind".

To sum up, as the epidemic prevention and control has entered the normal stage, colleges and universities should publicize more relevant sports and health knowledge, guide active participation in sports, and strengthen the body, strengthen psychological quality and improve mental health through physical exercise. In terms of the amount of physical activity, only time and frequency of physical activity are selected in this study, and the influence of other factors should be further discussed. The relevant investigation content of mental health status comes from self-report of college students, which may have recall bias.

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COLLEGE STUDENTS' INDEPENDENT PHYSICAL EXERCISE BEHAVIOR AND ITS INFLUENCE UNDER THE NORMALIZATION OF EPIDEMIC PREVENTION AND CONTROL

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Background: Since January 2020, the rapid spread of COVID-19 has forced the world into a serious situation of epidemic prevention and control due to its high transmissibility and long incubation period. In