The Effect of Different Physical Exercises on Mobile Phone Dependence of College Students

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Abstract: Objective: to Compare the Effect of Different Physical Exercises on Mobile Phone Dependence of College Students, and to Provide Reference for the Treatment of Mobile Phone Dependence of College Students. Methods: Physical Dance, Basketball and Table Tennis Were Used to Intervene the Mobile Phone Dependent College Students for a Long Time, and the Scores and Total Scores of Withdrawal Symptoms, Highlighting Behavior, Social Comfort and Mood Change in Mpats Were Compared. Results: after the Experiment, the Scores of "Withdrawal Symptoms", "Highlighting Behavior", "Social Comfort", Mood Change and Other Factors in the Sports Dance Group, Basketball Group and Table Tennis Group, as Well as the Total Scores of Mpats Were Lower Than the Level Before the Experiment in Each Group, the Difference Was Statistically Significant (P < 0.05). after the Experiment, the Scores of "Withdrawal Symptoms", "Highlighting Behavior", "Social Comfort", Mood Change and Other Factors in the Sports Dance Group, Basketball Group and Table Tennis Group and the Total Scores of Mpats Were Lower Than Those in the Control Group, the Differences Were Statistically Significant (P < 0.05); the Scores of "Highlighting Behavior", "Social Comfort" and Other Factors in the Basketball Group and m the Total Score of Pats Was Lower Than That of Sports Dance Group and Table Tennis Group, with Statistical Significance (P < 0.05); the Score of "Withdrawal Symptoms" in Basketball Group and Table Tennis Group Was Lower Than That of Sports Dance Group, with Statistical Significance (P < 0.05); the Score of "Mood Change" in Basketball Group and Sports Dance Group Was Lower Than That of Table Tennis Group, with Statistical Significance (P All < 0.05). Conclusion: Different Physical Exercises Can Improve the Mobile Phone Dependence of College Students.

1. Introduction

With the Popularity of Smart Phones, Mobile Phones Bring Convenience to People's Daily Life, But Also Bring Some Negative Effects, Such as Cell Phone Dependence, Cell Phone Radiation on Health. the So-Called Mobile Phone Dependence Refers to the Excessive Abuse of Mobile Phones by People Who Indulge in Various Functions of Mobile Phones Such as Internet, Games, Sms and Photos, Thus Endangering Their Mental Health and Affecting People's Normal Communication, Learning and Life. Mobile Phone Dependence is Essentially a Kind of "Behavioral Addiction" [1]. in Recent Years, in China, College Students Have Become a Group with High Incidence of Cell Phone Dependence [2-5]. Therefore, It is of Great Significance to Actively Explore the Effective Intervention Methods for Mobile Phone Dependence to Ensure the Normal Life, Learning and Mental Health of College Students. Physical Exercise Can Improve the Bad Behavior of College Students and Effectively Promote Mental Health [6-7]; There Are Research Reports That Volleyball Training Can Resist the Addiction of College Students to Mobile Phones [8]. However, There is a Lack of Systematic Comparative Study on the Difference of Intervention Effect of Different Physical Exercise Methods. Therefore, This Paper Studies the Intervention Effect of Different Ways of Physical Exercise on College Students' Mobile Phone Dependence, Improves the Practical Application of Physical Exercise in This Respect, and Promotes the Healthy Growth of College Students.

2. Objects and Methods

2.1 Object

Using the Mobile Phone Addiction Tendency Scale (Mpats) of College Students, a Group Sampling Survey of 2015 College Students from Zhejiang Economic and Trade Vocational College Was Conducted in Late September 2017 to Exclude Respondents Who Are Not Valid Questionnaires and Non-Mobile Dependence by. a Total of 103 Valid Experimental Subjects Were Recruited from College Students with Mobile Phone Dependence, Including 64 Boys and 39 Girls, with an Average Age of (21.29 ± 1.34) Years. All Subjects Received Physical Examinations At the School Hospital, and the Results Showed That They Were Healthy and Free of Cardiovascular Disease.

2.2 Method

2.2.1 experimental Method

According to Different Genders, 103 Subjects Were Randomly Divided into the Control Group (16 Boys, 9 Girls), the Sports Dance Group (16 Boys, 10 Girls), the Basketball Group (16 Boys, 10 Girls), 16 Boys and 10 Girls in the Table Tennis Group). on the Afternoon of April 3, 2016, the Subjects Were Measured for Cell Phone Dependence Before the Experiment, and the Formal Experiment Began the Next Day. Each Sports Group Will Perform Corresponding Physical Exercises from Monday to Friday from 17:40 to 18:50 in the Afternoon. , Each Exercise for 70 Minutes; the Control Group Sits in the Same Period Every Monday to Friday. Each Exercise of the Subjects Included a Warm-Up of 5 Minutes, a Teacher-Guided Exercise of 30 Minutes, a Free Exercise of 30 Minutes, and a Relaxation of 5 Minutes. the Experiment Lasted a Total of 16 Weeks. on the Afternoon of the Second Day after the Last Exercise, the Subjects Were Measured for Cell Phone Dependence after the Experiment. Use a Polar Watch to Control Your Heart Rate within the Range of 70% to 95% of Your Maximum Heart Rate during Exercise. This Heart Rate Corresponds to the Intensity of Exercise Recommended by the American Academy of Sports Medicine [9]; (Times / Min) Can Be Calculated by "220-Age" [10].

2.2.2 tools

Questionnaires Were Sent to the Subjects to Enlarge the Student's Mobile Addiction Tendency Scale (Mpats). Mpats Includes 16 Items, Which Are Composed of 4 Factors Including Withdrawal Symptoms, Prominent Behavior, Social Comfort, and Mood Change; among Them, Withdrawal Symptoms (Physical or Psychological Negative Reactions When Not Participating in Mobile Phone Activities) Consist of Items 1, 4, and 6, 8, 10, 12, Highlighting Behavior (the Use of Mobile Phones Occupies the Center of Thinking and Behavioral Activities) Consists of Items 5, 9, 13, 15, 7, 16 Composed of Mood Changes (Mood Changes Caused by Mobile Phones) Composed of Items 3, 11, 14 [10]. the Scale Items Are Rated on a Scale of 1 to 5. the Higher the Item Score and the Total Score, the More Severe the Tendency of Mobile Phone Addiction. the Internal Consistency Reliability of the Scale is Measured Using the Most Commonly Used Cronbach's Coefficient. the Cronbach's Coefficient of the Total Scale is 0.83. Except That the Mood Factor of the Four Factors is 0.55, the Rest Are Above 0.6. the Retest Reliability of the Total Scale is 0.91. Reliability and Validity Are Better between 0.75 and 0.85 [11-12].

2.2.3 statistical Analysis

The Experimental Data Was Expressed as "Mean \pm Standard Deviation" (), and the Analysis Was Completed with Spss 16.0. the Self-Comparison of the Data of Each Group Before and after the Experiment Was Performed Using Paired Sample t Test; the Homogeneity Comparison between the Groups Was Analyzed by One-Way Anova. P <0.05 Was Used as the Standard for Statistical Significance.

3. Results

3.1 Mpats Score Comparison between Groups Before the Experiment

Before the experiment, the scores of the control group and each group of table tennis groups on "withdrawal symptoms", "prominent behavior", "social comfort", "mood change" and other factors, and the total MPATS score were analyzed by single factor analysis of variance, and there were no differences. Statistical significance (F values were 1.19, 1.22, 1.18, 1.25, 1.26, P values were all> 0.05).

3.2 Comparison of Mpats Scores of Each Group Before and after the Experiment

After the experiment, the total MPATS score and its four factor scores were not significantly different from those before the experiment (all P values were> 0.05). After the experiment, the total score of MPATS in each exercise group was lower than the pre-experimental level of the four factors, and the differences were statistically significant (all P values <0.05). See Table 1.

Table 1	Comparison	of The Each	Factor Score	s and the T	Fotal Score	of Mpats in	n Each	Group
		between	Before and a	after the E	xperiment			

Group		Sample	Statistics	Withdrawal	Prominence	Social	Mood	MPATS
1		1		Symptoms	Behavior	Comfort	Alteration	Core
Control	Before	25		19.21±3.75	11.85±2.31	8.32±2.49	8.39±1.94	47.77±5.15
Group	Exp							
	After	25		19.98 ± 3.92	11.96 ± 2.37	8.24±2.45	8.44 ± 1.99	48.62±5.23
	Exp							
			<i>t</i> value	-1.423	-1.174	1.232	1.109	-1.376
			p value	>0.05	>0.05	>0.05	>0.05	>0.05
Sports	Before	26	19.27±3.78	11.92 ± 2.29	8.35±2.41	8.25±1.85	47.79±5.11	
Dance	Exp							
Group								
	After	26		14.53 ± 3.02	7.15±1.46	7.21±1.77	4.34±1.17	32.23±4.47
	Exp							
			<i>t</i> value	2.375	3.015	2.197	3.675	2.794
			p value	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Basketball	Before	26		19.43±3.83	11.78±2.36	8.29±2.38	8.35±1.97	47.85±5.21
Group	Exp							
	After	26		12.57 ± 2.48	5.16±1.19	5.21±1.28	4.25 ± 1.08	27.19±3.94
	Exp							
			t value	3.025	3.998	3.129	3.845	3.497
			p value	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Table	Before	26		19.65±3.92	11.89±2.39	8.28±2.43	8.43±2.09	48.25 ± 5.41
Tennis	Exp							
Group								
	After	26		12.46 ± 2.52	7.09±1.92	7.18±2.07	5.36±1.27	32.09±3.43
	Exp							
			t value	3.119	3.108	2.195	3.124	2.897
			p value	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

3.3 Comparison of Mpats Scores between Groups after the Experiment

As shown in Table 2, after the experiment, the total MPATS scores of the control group and each sports group and their 4 factor scores and single-factor analysis of variance were statistically significant (P < 0.05). Compared with the control group, The total score of MPATS and its four factors in all sports groups decreased, and the differences were statistically significant (all P values were less than 0.05). Among them, the basketball and table tennis groups scored less than the "withdrawal symptoms" factor. In the sports dance group, the differences were statistically significant (all P values were less than 0.05). The basketball group 's scores on "prominent behavior" and "social comfort" and the total MPATS score were smaller than the sports dance group and table tennis Group (P values <0.05); as for the "mood change" scores, the sports dance

group and basketball group are smaller than the table tennis group (P values <0.05).

Group		Sample	Statistics	Withdrawal	Prominence	Social	Mood
-		_		Symptoms	Behavior	Comfort	Alteration
Control Group	25		19.98±3.92	11.96±2.37	8.24±2.45	8.44±1.99	48.62±5.23
Sports Dance	26		14.53±3.02	7.15±1.46	7.21±1.77	4.34±1.17	32.23±4.47
Group							
Basketball	26		12.57±2.48	5.16±1.19	5.21±1.28	4.25 ± 1.08	27.19±3.94
Group							
Table Tennis	26		12.46 ± 2.52	7.09±1.92	7.18±2.07	5.36±1.27	32.09±3.43
Group							
		F value	5.342	6.254	5.423	5.877	5.659
		p value	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 2 Comparison of The Each Factor Scores and the Total Score of Mpats in Each Group after the Experiment

4. Discussion

Physical exercise can effectively promote the development of good behaviors and mental health of students [6-7, 13-14]. In this study, regular sports dance exercise, basketball exercise, and table tennis exercise can effectively improve the mobile phone dependence of college students, which are manifested as "withdrawal symptoms", "prominent behavior", " The scores of various factors such as "social comfort", "mood change" and the total MPATS scores decreased significantly. However, according to the comparison results between the groups, sports dance exercise, basketball exercise, and table tennis exercise have not been consistent in improving the mobile phone dependence of college students.

Basketball is a collective sport, and exercisers cooperate to complete sports tasks under conditions such as fast, flexible, and fierce physical confrontation. Therefore, there are many opportunities for communication among basketball players. According to the "social interaction hypothesis" concept of the health effects of physical exercise [15], physical exercise enables college students to experience happiness and relax their bodies and minds in real social interactions. Indulge in the virtual mobile world. Therefore, it is probably because of the "social interaction hypothesis" of basketball exercise that the health effect is better than sports dance exercise and table tennis exercise. After exercise, the basketball team scores better than sports dance on factors such as "social comfort" and "prominent behavior". The group and table tennis group dropped even more, indicating that basketball exercise reduces the "mobile phone's status in people's daily life" better than the other two sports. In the end, the basketball group's emotional changes caused by mobile phones ("mood change"), both physical and psychological negative reactions ("withdrawal symptoms") are minor when not participating in mobile phone activities.

As for the score of the table tennis group on the "withdrawal symptoms" and the score of the sports dance group on the "mood change" factor after the experiment, the scores on the "mood change" factors are not less than that of the basketball group, which may also involve other mental health effects of physical exercise. Sports dance is a sports event that integrates sports, dance, and music, and closely combines music with beautiful body shape [16]. When people practice sports dance, they finish their physical exercise under the influence of "beauty", so they can invest in themselves and experience success [17]. According to the "cognitive behavior hypothesis" of psychological health effects of physical exercise, it will help break the vicious circle associated with depression and other negative mood states [14]. Possibly due to the better mental health effects of the "cognitive behavior hypothesis" of physical dance, the ability of college students to resist emotional changes ("mood changes") caused by mobile phones is greatly improved. The ping pong practice requires the exerciser to have a decisive, agile and accurate judgment thinking ability, which can make the exerciser highly concentrated [18]. According to the "shifting attention hypothesis" view of the psychological health effects of physical exercise, physical exercise, physical exercise enables

people to shift from paying attention to negative emotional experiences such as anxiety and irritability to paying attention to physical activities. Improvement [15]. Possibly because table tennis exercise can better "distract attention", and then make college students' physical or psychological negative reactions ("withdrawal symptoms") significantly improved when they do not participate in mobile phone activities.

5. Conclusion

Sports dance exercise, basketball exercise, and ping pong exercise can effectively improve college students' mobile phone dependence, and basketball exercise has the best effect. In addition, physical dance exercise has an ideal intervention effect on the "mood change" factor in MPATS, and table tennis exercise has an ideal intervention effect on the "withdrawal symptoms" factor.

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