

A Study on The Motivation of Chinese University Students to Exercise in The Context of COVID-19 and The Impact of a Healthy Lifestyle on Their Willingness to Continue Exercise

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Abstract

In order to find out the factors influencing students' willingness to continue exercise and increase their willingness to continue exercise, I conducted an investigation on Chinese college students' motivation to exercise and to improve their healthy lifestyle. Through a questionnaire survey of 312 Chinese university students, the motivation of sports participation, the promotion of healthy lifestyle and the willingness to continue exercise were measured. The questionnaire data were collected from November 2021 to January 2022. The questionnaires were collected and processed by SPSS, and the analysis methods were frequency analysis, reliability analysis and linear regression analysis. The results show that there is a significant relationship between the motivation of exercise and the healthy lifestyle of Chinese college students and the persistence intention, and the limitations of this study and suggestions for future research are discussed.

Keywords: COVID-19, Sport motivation, Health promotion, Exercise Inspiration

1. INTRODUCTION

COVID-19 is spread through droplet transmission, direct or indirect touching of contaminants [1]. A distance of more than two meters is considered safe only if safety precautions are in place [2]. Thus, sport and physical activity has been severely affected by the social and physical distancing measures. The main purpose of policies and actions taken by medical departments is to prevent disease, not to promote health [3]. The health inequities resulted from pandemic lockdown. need to be adjusted by political and economic approaches [4]. Health is not merely the absence of diseases, but the state of optimum of individuals and groups [5]. Physical inactivity is the major contributor to global mortality, increasing the risk of death by 20 to 30 percent compared to active individuals. [6]. People who are physically active can effectively prevent and reduce the risk of various diseases related to lifestyle [7]. It is evidenced that regular physical activity could improve people's overall health. Motivation is a major research subject of psychologists. People's actions are largely affected by motivation. Motivation can be divided into extrinsic, intrinsic and no motivation [8], and combining the method of competition in higher education PE class will improve the motivation of college students and stimulate the interest in sports [9]. Adolescents' motor autonomic motivation is influenced by the

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motivation expressed by their parents [10]. Health is indirectly affected and adjusted by social, environmental and economic causes [11]. Health education and health knowledge are important factors in promoting health [12]. Pursuing a healthy lifestyle is the new trend nowadays. Health promotion is a process that affected by ecological, political, economic and environmental factors, and is not controlled by individuals [13]. Equal access to good health education and lifelong learning is the most important element in promoting health [14]. Health promotion requires individuals, families, groups and communities to play their full role together [15]. College students are the major force who build China in the future, and their health need to be put as the top priority. Students' autonomous motivation will promote their willingness to play sports in the future [16], and the support of PE teachers can promote college students to continue sports [17]. College students who often post sports-related information on social media are more likely to develop group identity and collective self-esteem. [18]. College students participate in sports clubs and intramural sports during their college years, which is beneficial to improve their academic performance [19]. College students' participation of offline sports as well as the use of social media can increase their sense of well-being and attachment to college and boost their mental health [20], Therefore, it is very important to cultivate college students' willingness to continue sports, develop good sports habits and cultivate students' consciousness of lifelong sports. Due to the occurrence of infectious diseases, people's health has been greatly affected. The lack of motivation to exercise is the most important factor. Therefore, from the perspective of sports motivation, the study focuses on the influencing factors of college students' lifestyle to improve their health is aimed at improving the willingness of Chinese college students to continue to participate in sports activities.

2. ANALYSIS METHOD AND SURVEY TOOL

2.1 Study Subjects

The participants were 312 Chinese college students. Of these participants, there were 79 males and 233 females. 312 copies of the questionnaires were collected. The sampling method was sampled using the expedient extraction method. The specific demographic characteristics of the study subjects are shown in <Table 1>.

Table 1. Study Subjects

	Variable	Number of cases(N)	Percentage(%)
Gender	Female	233	74.7
	Male	79	25.3
Grade	1	80	25.6
	2	92	29.6
	3	70	22.4
	4	70	22.4
Income level	200 or less	110	32.1
	More than 200-less than 300	112	35.8
	More than 300	100	32.1

2.2 Survey Tools

In order to investigate the motivation of Chinese college students to exercise and improve their healthy lifestyle under the epidemic situation, the questionnaire was modified and quoted according to the research content of this paper. The questionnaire is composed of four parts: general characteristics, healthy lifestyle, exercise motivation, and willingness to continue exercise. The detailed questionnaire composition is as

follows. First, a health-promoting lifestyle means a healthy lifestyle [21]. The sub-factors were composed of five-point scale: self-actualization, health responsibility, exercise, nutrition, relationships with others, and stress management. Second, exercise motivation refers to the motivation to start exercising [22]. The sub-factors consisted of a 5-point scale: intrinsic motivation, extrinsic motivation, and non-motivation. Third, the will to exercise means the will to continuously participate in the exercise [23]. It was composed of a 5-point scale as a single factor. <Table 2> shows the main contents of the questionnaire.

Table 2. Questionnaire Composition Indicator

Constituent indicators	Sub-factor	Number of questions
Demographic characteristics	Gender, Grade, Income Level	3
Healthy promotion	Self-actualization, health responsibility, exercise, nutrition, relationship research, stress management	22
Sport motivation	Extrinsic, Intrinsic, No motivation	20
Willingness to continue exercise	-	4

3. VALIDITY AND RELIABILITY OF THIS STUDY

3.1 Exploratory factor analysis

Table 3. Lifestyle factors of improving health among Chinese college students

Question	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	
Interpersonal relationships	Q18	0.829	0.208	0.070	0.146	0.237	0.193
	Q16	0.802	0.191	0.213	0.186	0.122	0.236
	Q15	0.781	0.152	0.231	0.100	0.090	0.302
	Q17	0.780	0.169	0.059	0.223	0.263	0.166
Self-actualization	Q02	0.171	0.834	0.194	0.215	0.140	0.164
	Q01	0.191	0.797	0.246	0.200	0.094	0.172
	Q03	0.233	0.790	0.140	0.196	0.195	0.107
Sport	Q09	0.063	0.185	0.811	0.192	0.311	0.093
	Q10	0.203	0.177	0.782	0.288	0.200	0.131
	Q08	0.294	0.360	0.675	0.236	0.162	0.105
Health responsibility	Q05	0.138	0.259	0.146	0.789	0.247	0.097
	Q07	0.203	0.169	0.322	0.763	0.105	0.149
	Q06	0.323	0.333	0.324	0.648	0.107	0.143
Stress management	Q20	0.269	0.176	0.140	0.099	0.794	0.062
	Q19	0.097	0.078	0.267	0.187	0.779	0.089
	Q22	0.382	0.235	0.259	0.146	0.542	0.200
Nutrition	Q11	0.253	0.162	0.041	0.033	-0.048	0.827
	Q12	0.240	0.109	0.124	0.151	0.206	0.824
	Q13	0.354	0.189	0.251	0.317	0.330	0.531
	Q14	0.365	0.303	0.163	0.336	0.355	0.436
Eigen Value	3.573	2.747	2.444	2.343	2.272	2.255	
Variance (%)	17.862	13.736	12.222	11.715	11.362	11.277	
Cumulative(%)	17.862	31.598	43.820	55.535	66.897	78.174	

Based on exploratory factor analysis of lifestyle that promotes health, it can be seen from <Table 3> that interpersonal relationship is above 0.78, self-actualization is above 0.79, exercise is above 0.675, health responsibility is above 0.648, stress management is above 0.542, nutrition is above 0.436, and stress management 34 is excluded due to low load. The results showed that the cumulative ratio of interpersonal relationship, self-realization, exercise, health responsibility, stress management and nutrition was 78.174%.

Table 4. Exploratory factor analysis and reliability analysis of golf consumption behavior

Question		Factor1	Factor2	Factor3	Factor4	Factor5
Internal motivation	Q24	0.823	0.151	0.127	0.217	0.222
	Q25	0.818	-0.056	0.309	0.238	0.199
	Q23	0.772	-0.020	0.354	0.319	-0.048
	Q26	0.746	-0.048	0.391	0.217	0.187
No motivation	Q41	0.039	0.943	0.027	0.053	0.058
	Q40	0.004	0.929	0.089	0.052	0.165
	Q42	0.053	0.895	0.094	0.026	0.079
	Q39	-0.020	0.887	-0.004	0.055	0.132
Health, physical strength	Q28	0.449	0.025	0.736	0.300	0.076
	Q30	0.463	0.076	0.705	0.307	0.199
	Q31	0.311	0.195	0.699	0.261	0.304
Communication	Q34	0.376	0.085	0.344	0.770	0.235
	Q33	0.314	0.108	0.415	0.758	0.133
	Q35	0.551	0.053	0.148	0.693	0.208
Competition	Q36	0.132	0.295	0.143	0.182	0.863
	Q37	0.437	0.180	0.307	0.221	0.689
Eigen Value		3.767	3.553	2.362	2.243	1.653
Variance (%)		23.545	22.205	14.765	14.021	10.334
Cumulative(%)		23.545	45.750	60.514	74.536	84.870

According to the exploratory factor analysis of sports motivation, it can be seen from <Table 4> that internal motivation is over 0.746, non-motivation is over 0.887, external motivation is inferior incentive, health and physical strength is over 0.699, communication is over 0.693, competition is over 0.689. Health and physical strength 40, 42 low load is excluded, communication 45 low load is excluded, competition 51 low load is excluded. It shows that the cumulative ratio of health and physical strength, communication and competition under internal motivation, non-motivation and external motivation is 84.870%.

3.2 The reliability and validity of the survey tool

The validity of the questionnaire survey was verified by exploratory factor analysis. Cronbach's A coefficient was calculated to verify the reliability.

As can be seen from <Table 5>, the reliability of promoting a healthy lifestyle is 0.966 and the reliability of exercise motivation is 0.915. Interpersonal relationship is 0.919, self-actualization is 0.888, exercise is 0.868, health responsibility is 0.848, stress management is 0.779, nutrition is 0.840, intrinsic motivation is 0.915, no motivation is 0.942, extrinsic motivation is subordinate incentive health and physical strength is 0.886, The reliability of communication is 0.916, the reliability of competition is 0.815. It shows that the reliability of the questionnaire is very good.

Table 5. Reliability analysis

Variable	Cronbach's α	Sub-factor	Cronbach's α
Promote a healthy lifestyle	0.966	relationship research	0.919
		Self-actualization	0.888
		exercise	0.868
		health responsibility	0.848
		stress management	0.779
		nutrition	0.840
Sport motivation	0.915	Internal motivation	0.915
		No motivation	0.942
		Health, physical strength	0.886
		Extrinsic motivation	0.916
		Communication	0.916
		Competition	0.815

4. STATISTICAL ANALYSIS

For data analysis, the question arises with answers completed were collected, data with double entry or no-entry was excluded, and valid samples were coded according to the guideline of coding. The coded data was input individually into the computer, and then frequency analysis, exploratory factor analysis, reliability analysis, one-way analysis of variance and multiple regression analysis were done with the use of SPSS Windows 20.0 Version statistical program.

5. RESULTS

5.1 The impact of exercise motivation on promoting a healthy lifestyle

In order to understand the relationship between the motivation of Chinese college students to exercise and the promotion of healthy lifestyle, a regression analysis was conducted.

Table 6. Results of regression analysis on exercise motivation and promoting healthy lifestyle

Variables	Self-actualization		Health responsibility		Exercise	
	β	t	β	t	β	t
Constant	7.359		5.078		3.114	
Internal motivation	0.448	5.266***	0.420	5.124***	0.648	9.506***
Health, physical strength	0.031	0.347	0.038	0.445	0.042	0.588
Communication	0.181	2.151*	0.220	2.712**	0.089	1.317
Competition	-0.185	-2.775**	-0.172	-2.673**	-0.020	-0.367
No motivation	-0.063	-1.177	0.177	3.435**	-0.056	-1.311
R ²	0.287		0.328		0.536	
F	24.895***		31.389***		72.828***	
Variables	Nutrition		Relationship research		Stress management	
	β	t	β	t	β	t

Constant	8.562		8.909		4.967	
Internal motivation	0.348	4.073***	0.305	3.736***	0.548	7.805***
Health, physical strength	0.123	1.390	0.186	2.200*	0.203	2.789***
Communication	0.206	2.448*	0.263	3.271**	-0.024	-0.347**
Competition	-0.214	-3.195*	-0.206	-3.226**	0.015	0.269
No motivation	0.090	1.688	-0.007	-0.137	0.072	1.640
R ²	0.272		0.336		0.508	
F	24.292***		32.436***		65.340***	

***p<0.001

As can be seen from <Table 6>, intrinsic motivation has a 0.1% impact on self-actualization, interpersonal relationship, exercise, health responsibility, stress management, and nutrition, while the secondary causes of extrinsic motivation health and physical strength have a 5% impact on interpersonal relationship and a 0.1% impact on stress management. Communication had a 5% impact on self-actualization, 1% impact on health responsibilities, 5% impact on nutrition, 1% impact on interpersonal relationships, and 1% impact on stress management. Competition has a 1 percent impact on self-actualization, 1 percent impact on health responsibility, 5 percent impact on nutrition, and 1 percent impact on relationships. Lack of motivation had a 1% impact on health responsibility. Therefore, movement motivation is a very important factor. Extrinsic motivation is the action to obtain some results that can be separated, while intrinsic motivation is the action to meet the intrinsic needs of the actor [24]. The promotion of a healthy lifestyle can promote the physical health of college students. Therefore, when people participate in sports, they need to cultivate good motivation to continue sports.

5.2 The influence of exercise motivation on persistence intention

In order to understand the relationship between Chinese college students' sports motivation and their continuing intention, a regression analysis was conducted.

Table 7. Regression analysis results of exercise motivation and persistence intention

Variable	Persistence intention	
	β	t
Constant	1.896	
Internal motivation	0.538	9.276***
Health, physical strength	-0.001	-0.018
Communication	0.173	3.027*
Competition	0.196	4.309***
No motivation	0.056	1.549
R ²	0.665	
F	124.264***	

***p<0.001

As can be seen from <Table 7>, intrinsic motivation has a 0.1% impact on persistent intention. Communication has a 5% impact and competition has a 0.1% impact. The motivation of Chinese college students to exercise has an impact on the willingness to continue. College students with better internal motivation have better

willingness to continue sports. Internal motivation is the most important factor to motivate and maintain participants to participate in sports [25], motivation affects the speed, intensity, direction and persistence of people's actions [26]. Communication and competition can promote students' willingness to continue sports, and good communication can promote people's participation in sports activities [27]. Therefore, exercise motivation is one of the most important factors affecting the individual to continue exercise.

5.3 The impact of promoting a healthy lifestyle on sustainability

In order to understand the impact of Chinese college students' health promotion lifestyle on the intention to continue, a regression analysis was conducted. <Table 8> shows that exercise has a 0.1% impact on the intention to persist. Interpersonal relationships had a 5% impact, and stress management had a 0.1% impact. The health-promoting lifestyle of Chinese college students has an impact on the willingness to continue. College students' sports, interpersonal relationship and stress management can promote their willingness to continue sports. Health promotion is not only about the adoption of healthy lifestyles by individuals, but also requires social and other support [28], Increased social interaction increases physical and mental health [29]. Therefore, in the future, we should effectively adjust people's healthy lifestyle.

Table 8. Regression analysis results of health improvement and persistence intention

Variable	Persistence intention	
	β	t
Constant	4.077	
Self-actualization	0.051	0.913
Health responsibility	0.000	-0.002
Exercise	0.434	7.216***
Nutrition	-0.058	-0.973
Relationship research	0.145	2.417*
Stress management	0.256	4.608***
R^2	0.500	
F	52.798***	

*** $P < 0.001$, ** $p < 0.01$, * $p < 0.05$

6. CONCLUSION

The purpose of this study was to find out the relationship between the motivation of exercise, the promotion of healthy lifestyle and the willingness to keep going among Chinese college students.

First, the motivation of Chinese college students to exercise can promote a healthy lifestyle. The better the internal and external motivation of Chinese college students, the better the promotion of healthy lifestyle.

Second, the sports motivation of Chinese college students has a promotion effect on the persistence intention. The better the internal and external motivation of Chinese college students, the better the willingness of students to continue to exercise.

Thirdly, the healthy lifestyle of Chinese college students can promote the continuous intention. Chinese college students have a good lifestyle to promote health, the students will continue to exercise the better.

The motivation of Chinese college students to exercise and to improve their healthy lifestyle have a significant relationship with their continuing intention. Therefore, in order to train college students to continue

sports, it is necessary to promote their sports motivation and optimize a healthy lifestyle. College students to continue sports to enhance their health is of great significance to the development of Chinese college students' physical health. The research object of this paper is Chinese college students, but my survey area and grade coverage is limited, so it cannot be confirmed that it is the survey result of all Chinese college students. In particular, students in different regions have different habits and goals. In the follow-up investigation, more comprehensive research objects can be covered and more in-depth investigation can be carried out.

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