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An empirical study on college students physical exercise behavior change based on the trans-theoretical model

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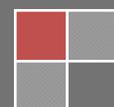
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ABSTRACT

In this paper it applies the trans-theoretical model to study the basic condition of Chinese college students' physical exercise behavior, and after analyzing the main characteristic of change it explores the stages of change and analyze the relationship of self-efficacy, decision balance and change process to provide some theoretical data and materials for study on college students' physical exercise behavior change.

KEYWORDS

Trans-theoretical model; Physical exercise; College students; Exercise behavior.



INTRODUCTION

It has made some progress in applying the trans-theoretical model to study people's behavior change and to some extent propelling people's physical and mental health. However, the current situation of our college students' physical exercise behavior is not good. They lack the consciousness or the interest to actively attend physical exercise, which leads to the contradiction between physical exercise behavior and exercise attitude and can not meet the requirements of exercise. So some scholars have applied the trans-theoretical model to study college students' physical behavior and made some specific tables, such as, Measurement Table of College Students' Physical Behavior Change, Decision Balance Table of College Students' Physical Exercise and Self-efficacy Table of College Students' Physical Exercise Behavior, providing useful data for college students' physical exercise.

DESCRIPTION OF TRANS-THEORETICAL MODEL

Definition of trans-theoretical

To some extent the trans-theoretical model refers to the model that can change the object behavior and the core part of which mainly reflects in the decision making ability of changing individual behavior but not the nonsocial and biological factors we described. After integrating and summarizing various of theories, the model has been a systematic way to study individual behavior change.

Main components of trans-theoretical model

Trans-theoretical model can be applied to change behavior, the process of which increases gradually, continuously and dynamically and involves large scale of content and scope, complex structure. So the components of trans-theoretical model in physical exercise behavior include stages of change, balance decision, self-efficacy and process of change.

(1) Stages of Change. It is the focus of the trans-theoretical model, studying the behavior according to the stages of time. From time and motivation that behavior change happened, the behavior can be classified into pre-contemplation, contemplation, preparation, action and maintenance.

(2) Balance Decision. It is the factor or key point produced from judging whether the individual behavior will change and plays an important role in deciding in trans-theoretical model. It mainly balances the advantage and disadvantage on the occasion when the individual behavior change happens. Once the advantage of change is much more than the disadvantage then the change plays the positive role. Therefore, it represents the ability to make decision between advantage and disadvantage in the stage of individual behavior change.

(3) Self-efficacy. It mainly includes confidence and environment. It not only affects the individual to change behavior but also records individual's hard work during the choosing of activity behavior and at the same time it will influence the patience and insistence needed when dealing with the problem, setback, obstacle and failure produced in activity.

(4) Process of Change. It refers to the strategies and methods used in consciousness, feeling, personal communication and activity when behavior changes, providing urgent measures for individual behavior change and people's healthy behavior. During the process of change, it mainly involves the change and condition emerging from change from one time stage to another time stage, which encourages us to know why different behaviors will happen and when they will change. In the process of change, the cognition process and behavior process often happen, during which the former includes self-consciousness, self-evaluation, environmental evaluation and social release while the latter involves mutual helping relationship, self-release, consciousness control and anti-restriction. Trans-theoretical Model Figure is shown as Figure 1.

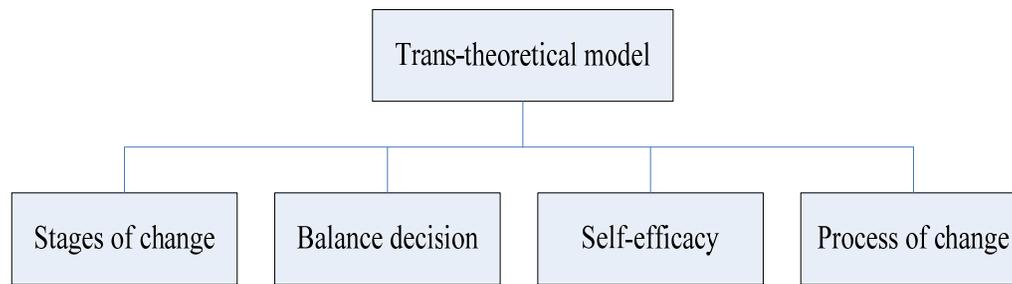


Figure 1 : Trans-theoretical model figure

The application and development of trans-theoretical model

With the development of times, the model's application has developed from the primary study to the smoking behavior and now has applied in every aspect of our life. The research studies many exercise behaviors from various professions, such as, workers, residents, students and from various ages, such as, teenagers, the middle-aged and the elderly and from different genders, girl and boy. With the enlargement of enrollment of college, more and more people pay attention to students' physical health and physical exercise behavior. Therefore, the trans-theoretical model is widely applied to the study on college students' physical exercise behavior change.

From the recent study on college students' physical exercise behavior change based on trans-theoretical model, we observe that lots of colleges do not emphasize on the physical exercise and few or almost no students attend physical exercise, for they lack correct conscious to physical exercise and meanwhile their exercise behavior has the stage feature. To solve the problem, we can encourage students to participate in collective activities to create an environment for physical exercise, cultivate their personal communication ability and drive them to attend physical exercise continuously.

In short, the trans-theoretical model takes the behavior change as the center point and explains the change in detail. The research studies the process happened in different times and affected by various factors influences individual's behavior change of people from different stages, ages and behaviors. Furthermore, the development of this model propels the research method's developing. All of these shows that the trans-theoretical model has great influence on people's healthy behavior change, especially playing a key role in college students' physical quality and mental health, and provides theory basis and data for college students' physical exercise behavior change.

OBJECTS AND METHODS OF STUDY

Randomly selecting 1000 college students and issuing questionnaires to investigate. Boys and girls are issued 500 questionnaires respectively, 952 recovered and the recovery rate reached 95.2%, of which the valid questionnaires of boys is 456 and that of girls is 459, valid rate reached 91.5%.

The method of literature

After looking through, collecting and searching the literature material and research achievements that related to the trans-theoretical model and reading the books about the application of trans-theoretical model, we generalize and elaborate some important literature materials and achievements comprehensively.

The method of interview

By interviewing with the study objects and holding seminars and academic meetings with related scholars, we get achievements about the application of trans-theoretical and abundant advice to provide full materials for this study.

The method of questionnaire

According to study objects’ concrete condition, we revise and draft Measurement Table of College Students’ Physical Behavior Change, Decision Balance Table of College Students’ Physical Exercise and Self-efficacy Table of College Students’ Physical Exercise Behavior, which are examined and corrected after counseling experts to check whether they are valid.

The method of mathematical sum

The primary data the investigation obtained are rearranged to analyze and conclude the current situation of college students’ physical exercise behavior change and finally we know the reason why college students will be restricted and infected in physical exercise.

ANALYSIS OF STUDY RESULTS

Analysis about stages of change in college students’ physical exercise behavior

After analyzing the stages of physical exercise behavior change and the number of students, we get the conclusion that in the stages of pre-contemplation and contemplation there are large sums of students do physical exercise, featuring “one side is much more than another side”, which shows these two stages are the key stages to exert influences. Though the characteristic we have gotten from analyzing the stages of college students’ physical behavior change, there still exists many difference between this conclusion and other relative conclusions, mainly resulting from the distributing characteristic and other factors, such as, different majors and different purposes and requirements about physical exercise.

Observing from TABLE 1, we know the distribution of physical behavior in every stage is also different in gender. In pre-contemplation stage, the number of boys occupies a large proportion, gradually decreasing with the change to other stages while in contemplation stage, the number of girls is large, featuring “the middle is less than both sides”. In pre-contemplation and maintenance stages, the proportion of boys is larger than that of girls while less than girls in preparation, contemplation and action stages.

TABLE 1 : Table of generalizing stages of college students’ physical exercise behavior change

Gender/Stage	Girl		Boy		Total number	
	n	%	n	%	n	%
Pre-contemplation Stage	125	13.7	150	16.4	275	30.1
Contemplation Stage	131	14.3	119	13.0	250	27.3
Preparation Stage	108	11.8	100	10.9	208	22.7
Action Stage	74	8.1	68	7.4	142	15.5
Maintenance Stage	15	1.6	25	2.7	40	4.4

Analysis about self-efficacy and decision balance in college students’ physical exercise behavior

Viewing from the distribution phenomenon of self-efficacy and decision balance in different stages of college students’ physical exercise behavior shown in Figure 2 and TABLE 2, we know in stages of pre-contemplation, contemplation, preparation, action and maintenance, all investigated 915 students’ self-efficacy are respectively 42.2, 53.5, 65.8, 68.4 and 72.3. The study results shows that these college students’ self-efficacy has a tendency to increase gradually according to their sequence, which illustrates that students’ confidence and initiative are enhanced. And the decrease of decision obstacles shows that students’ physical exercise is getting rid of the restriction and consequence from obstacles.

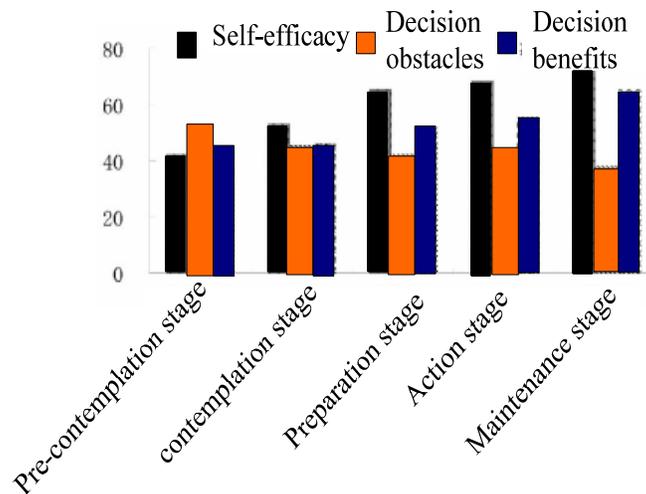


Figure 2 : Ean distribution figure of college students physical exercise behavior in different stages

TABLE 2 : Table of self-efficacy and decision balance

Stages	Gender	Self-efficacy	Decision Balance	
			Obstacles	Benefits
Pre-contemplation stage	Boy	41.2 ± 4.4	55.6 ± 6.5	71.7 ± 4.3
	Girl	43.2 ± 4.5	64.3 ± 4.9	89.4 ± 7.3
Contemplation stage	Boy	46.2 ± 6.9	58.1 ± 7.8	72.2 ± 7.6
	Girl	44.8 ± 7.1	64.5 ± 5.7	90.4 ± 6.3
Preparation stage	Boy	49.3 ± 6.6	49.7 ± 5.5	59.4 ± 5.6
	Girl	47.1 ± 8.9	61.1 ± 5.3	92.1 ± 8.4
Action stage	Boy	44.2 ± 5.5	64.2 ± 5.9	74.3 ± 8.7
	Girl	46.5 ± 7.1	52.9 ± 3.9	67.5 ± 7.6
Maintenance stage	Boy	57.3 ± 6.5	44.1 ± 5.7	68.5 ± 7.1
	Girl	53.2 ± 5.9	51.3 ± 5.6	75.1 ± 5.4

Analysis about stages and procedures of college students' physical exercise behavior change

To some extent the factors that affected the processes of college students' physical exercise behavior mainly include self-release, social release, self-management, effect evaluation, mutual helping relationship and consciousness control, during which self-release and effect evaluation belong to internal factors, social release and mutual helping relationship belong to external factors while self-management and consciousness control belong to comprehensive factors. To these five stages, the change procedure has various degrees of impact on each stage and the impact has large difference and as an important factor in behavior change stage of college students' physical exercise, the change procedure can be combined with stages of change to illustrate individual's behavior change.

From TABLE 3, we get in the six factors that affected college students' physical exercise behavior, self-release and consciousness control have a close relationship with the stage of pre-contemplation. After analyzing the change procedure of college students' physical exercise behavior, we conclude that self-release relates to the stages of pre-contemplation, preparation and contemplation in a large degree, self-management relates to the stages of contemplation and preparation and consciousness control relates to pre-contemplation and maintenance stages, which explains that six factors in change procedures have different impacts on different stages and the correlation degree between factors and stages is different.

TABLE 3 : Relationship table between stages and procedures of physical exercise behavior change

Correlation coefficient	Pre-contemplation stage	Contemplation stage	Preparation stage	Action stage	Maintenance stage
Self-release	-0.23**	0.39**	0.36**	0.54**	0.39**
Self-management	-0.33**	0.22**	0.42**	0.34**	0.44**
Consciousness control	-0.10**	0.43**	0.13**	0.42**	0.45**
Mutual helping relationship	-0.27**	0.11**	0.46**	0.35**	0.51**
Effect evaluation	-0.42**	0.35**	0.26**	0.43**	0.32**
Social release	-0.53**	0.37**	0.32**	0.51**	0.28**

Note:represents**

CONCLUSION

From the study on applying the trans-theoretical model to analyze college students' physical exercise behavior, we know the features shown in the process of physical exercise, that is, the number of students is large in pre-contemplation and contemplation stages, featuring "one side is much more than another side". Meanwhile, compared with other stages, the effect of self-efficacy and decision balance has obvious difference in pre-contemplation stage. More interference on self-management, self-release, consciousness control can help to strengthen students' awareness and interest of participating in physical exercise and to improve their physical and mental health.

REFERENCES

- [1] Hu Jubo, Wang Jin, Wang Junjie, Bao Zhengdong; Study of the Application of Trans-Theoretical Model on Higher Vocational Students' Physical Exercise Behavior Change [J], Zhejiang Sports Science, **01**, (2014).
- [2] Cui Shijun; Study of the Application of Trans-Theoretical Model on Higher Vocational Students' Physical Exercise Behavior Change Stage[J], Journal of Guangzhou Physical Education Institute, **03**, (2014).
- [3] Bao Huhe; Study of the Application of Trans-Theoretical Model on Mongolian Students' Physical Exercise Behavior Change[J], Journal of Shenyang Institute of Physical Education , **04**, (2012).
- [4] Peng Yanming, Hu Qiao, Li Zhengzhong, Zhou Shu, Guo Zhiping; The Trans-Theoretical Model and Its Application in the Region of Physical Exercise[J]. Journal of Hubei Normal College (Philosophy and Social Sciences Edition), **09**, (2009).
- [5] Ma Yongzhan, Wang Gaofeng, Wang Dongsheng; Review on the Application of Trans-Theoretical Model in Physical Exercise[J], Zhejiang Sports Science,**07**, (2012).
- [6] Guo Yugang, Qian Zhangshi; Current Situation and Prospect of Study on the Application of Trans-Theoretical Model in College Students' Physical Exercise Behavior[J], Value Engineering, **02** (2012).
- [7] Wang Shengqi; Applying Trans-Theoretical Model to Analyze Physical Behavior Stages of College Students Whose Physical Quality Can Not Satisfy the Requirements of Standard [J], Network Wealth, **06**, (2010).
- [8] Xie Bin, Liu Mingjing; Review on the Application of Trans-Theoretical Model on Domestic Physical Behavior[J], Contemporary Sports Technology, **05**, (2014).
- [9] Fang Min; Gender Equivalence of Trans-Theoretical Questionnaires on College Students' Physical Behavior [J], Journal of Physical Education, **02**, (2010).
- [10] Xu Zixuan; Current Situation and Progress of Study on College Students' Physical Exercise Behavior[J], Journal of Nanjing Sport Institute (Natural Science Edition), **02**, (2013).