



Associations among Chinese College Students' Physical Activity Correlates and Behaviors: A Social Ecological Model

Wenxi Liu, Nan Zeng, University of Minnesota, Twin Cities; Xianxiong Li, Hunan Normal University, Changsha, China; Shanying Xiong, Shenzhen Polytechnic University, Shenzhen, China; Kun Tao, Qingwen Peng; Huaihua University, Huaihua, China; Zan Gao, University of Minnesota, Twin Cities



ABSTRACT

Purpose: To deliver effective physical activity (PA) interventions in Chinese college students, it is important for us to understand the PA correlates and behavior from social ecological perspective. However, no known studies used social ecological model in this area of inquiry in China. Thus, the purpose of this study was to investigate the associations among individual (PA self-efficacy and enjoyment), social environmental (support from parents and friends), and physical environmental (equipment, accessibility, and neighborhood safety) and PA behaviors in Chinese college students. **Methods:** A total of 887 college students (365 males, Mage = 20.5, SD = ± 1.7; MBMI = 21.2, SD = ± 11.0) from four universities in South and South-center China participated in this study. Participants' 7-day PA was assessed via validated International Physical Activity Questionnaires for Chinese (Macfarlane et al., 2007), with total metabolic equivalent (METs) as the outcome for PA. Their PA self-efficacy, enjoyment, and social and physical environmental factors were assessed by a battery of previously validated questionnaires (Prochaska et al., 2001). The data were collected from 2016 through 2017. **Results:** Participants reported average moderate levels of PA self-efficacy (2.6 out of 5), enjoyment (3.6 out of 5), and physical environmental factors (3.0 out of 5), but relatively modest levels of social environmental (2.1 - 2.3 out of 5). On average, they accumulated 337.1 METs in the past week. Correlation analysis indicated all social ecological components were modestly or moderately correlated with PA ($r = 0.07 - 0.38, p < 0.01$). Regression analysis further suggested that the whole model explained 15.9% of the variance, $F(5, 868) = 32.87, p < 0.01$. Participants' self-efficacy ($\beta = 0.31, p < 0.01$), enjoyment ($\beta = 0.08, p < 0.05$), and friends support ($\beta = 0.09, p < 0.05$) emerged as significantly positive predictors for PA. However, family support was a negative predictor for PA ($\beta = -0.08, p < 0.01$). No physical environment factors were identified as predictors. **Conclusions:** Findings suggest that Chinese college students were relatively physically active on a weekly basis. It appears that PA self-efficacy, enjoyment, and perceived social support may play important roles in PA promotion. Therefore, health professionals should help students successfully complete the tasks to cultivate self-efficacy, provide engaging and enjoyable activities, and facilitate friend or peer support in this population.

INTRODUCTION

Most of youth and adults are not regularly active in China and tend to drop out from structured physical activity program (Li, Yang, Wu, & Yang, 2015; Sun, 2016). One major concern regarding this problem may due to Lack of clear understanding physical activity correlates and behavior among Chinese college students. A social ecological perspective provides an innovative theoretical framework to guide the investigation of multiple factors influencing physical activity behavior change.

The purpose of this study was to investigate the associations among individual (PA self-efficacy and enjoyment), social environmental (support from parents and friends), and physical environmental outcomes (equipment, accessibility, and neighborhood safety) and PA behaviors in Chinese college students.

METHODS

A total of 887 college students (365 males; Mage= 20.51 years old, SD = ± 1.67) from 4 universities in south and south-center China were recruited for this study. The physical activity levels were assessed by a 6-item self-reported Chinese version of International Physical Activity Questionnaire (IPAQ-SF) (Macfarlane et al., 2007). To assess students' PA barriers to self-efficacy, a 6-item scale that pertained to confidence in students' ability to be physically active under various conflicting situations was used in this study (Motl et al., 2000). The students' perceived support from parents and friends were assessed by a 10-item scale questionnaire (Prochaska et al., 2002). The physical environment scale developed by Motl et al. (2005) was used to assess students' perceived equipment accessibility and perceived neighborhood safety. All data were collected by the primary researchers during regular college physical education classes. All data were collected by the primary researchers during regular college physical education classes.

RESULTS

Table 1. Descriptive statistics for outcome variables (N = 887)

Variables	M	SD
Age (years)	20.5	1.7
Height (cm)	166.5	8.7
Weight (kg)	57.9	12.2
BMI (kg/m ²)	20.9	5.1
Barrier Self-Efficacy	2.6	0.8
Enjoyment	3.6	0.9
Family Support	2.1	0.8
Friends Support	2.3	0.7
Physical Environment	3.0	0.7
Total PA (METs)	337.1	263.5

Note. SD, standard deviation



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DISCUSSION

Barrier self-efficacy and enjoyment has consistently been one of the strongest predictors of Chinese college students' physical activity participation in the present study. Social support from friends, but not from parents, emerged as significant predictors of self-reported engagement in physical activity in this study. More research is needed to examine the influence of the physical environmental factors on Chinese college students' physical activity in different settings.

CONCLUSION

It appears that physical activity barrier self-efficacy, enjoyment, and support from friends are the important factors influencing the Chinese college students' physical activity behaviors. Finally, this study supported the use of the social ecological perspective in the investigation of physical activity among Chinese college students.