

Original article

Understanding Chinese international college and university students' physical activity behavior

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Abstract

Objective: To examine factors of the youth physical activity promotion (YPAP) model that are associated with Chinese international students' meeting PA recommendations (MPAR).

Methods: A total of 649 (females = 320, males = 329) Chinese international college students participated in the study. This study was conducted in the United States (US.) between June and August in 2011. Participants completed an online survey regarding their demographic, PA, predisposing, enabling, and reinforcing factors.

Results: Logistic nested-regression analysis suggested that being male, having a higher body mass index, perceived competence, self-efficacy, attitude, and enjoyment all increased ($p < 0.001$) the participants' odds of MPAR. Except language barriers, all of the enabling and reinforcing factors predicted MPAR indirectly through the predisposing factors ($p < 0.001$).

Conclusion: Understanding factors that influence PA among Chinese international students is an important step in the process of promoting their long-term health and wellbeing. Designing program that address the identified key factors may help colleges and universities achieve this goal. Copyright © 2013, Shanghai University of Sport. Production and hosting by Elsevier B.V. All rights reserved.

Keywords: Health behavior; Health promotion; Higher education; Youth physical activity promotion model

1. Introduction

Chinese international students are the largest international student group population in the American higher education system.¹ In comparison to American college students and other international students groups, they have also been identified as the least physically active.² The most recent physical activity (PA) guidelines suggest that obtaining at least 150 min of moderate-intensity PA per week results in substantial health benefits,³ which the vast majority of Chinese

international college students do not appear to be achieving.² Increased PA participation among international students may also provide opportunities to increase intercultural communication and understanding, and help reduce instances of racism and other forms of discrimination, exclusion, and resentment.⁴ Given the innumerable cognitive, health, and social benefits associated with PA for all people,⁵ identifying factors that influence Chinese international students' PA participation is eminently important.

Understanding the PA experiences of Chinese international college students is also distinct due to their unique backgrounds. For example, traditional Chinese health beliefs value harmony with nature, which may diminish one's desire to partake in un-natural actions, such as PA, to change their health status.⁶ In addition, since the majority of colleges and universities in China lack comprehensive physical education

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classes and equipment,⁷ Chinese students may lack the skills needed to use the exercise facilities that are available on American college and university campuses. Additionally, and similar to other immigrants, Chinese international students may encounter significant obstacles to their PA participation on the basis of their gender, ethnicity, and social class, among other factors.⁴ As a result, it is important to explore the specific factors influencing their PA participation. Ultimately such knowledge can help in the design and delivery of culturally acceptable and maximally effective PA intervention programs.

The youth physical activity promotion (YPAP) model offers a potentially useful framework for understanding Chinese international college students' PA behavior.⁵ It was developed from the PRECEDE-PROCEED model, which proposes that in order to design interventions to change health behavior, steps including social diagnosis, epidemiological diagnosis, behavior and environmental diagnosis, and educational and organizational diagnosis need to be followed.⁸ Within the educational and organizational diagnosis phase, factors that influence the specific health behavior should be identified, including the predisposing, reinforcing, and enabling factors. The YPAP builds off of the PRECEDE-PROCEED model and adds further specificity.

In accordance with the PRECEDE-PROCEED model, the YPAP model explores the mechanisms of youth PA behavior by identifying predisposing, enabling, and reinforcing factors. Predisposing factors include two parts, "Am I able?" and "Is it worth it?" (simplified as able and worth, respectively, in the following). The able construct relates to self-perceptions of physical ability, including self-efficacy and perceived competence. The worth construct addresses the value (i.e., benefits and costs) placed on expected outcomes associated with PA, including attitude, belief, enjoyment, and knowledge. Enabling factors include variables that allow individuals to be physically active. Conceptually, this would include determinants from the biological and environmental domains such as body fat percentage, fitness level, and accessibility.⁵ Reinforcing factors emphasize how the social environmental factors influence PA. As significant others (e.g., parents, peers, and coaches) serve as interpreters, supporters, and providers of experiences for youth, they are also considered as reinforcing factors. On the basis of this model, the predisposing, enabling, and reinforcing factors influence PA directly. In addition, enabling factors also influence PA indirectly through able, and reinforcing factors influence PA indirectly through able and worth. Finally, the model addresses the potentially differentiating role that demographic factors (e.g., age, sex, and race) have on PA behavior (Fig. 1).

The YPAP represents a structure of predictors for understanding PA behavior, with the building blocks of its structure grounded in other well-established health behavior theories and models. For example, Social Cognitive Theory emphasizes the importance of self-efficacy and role modeling,⁹ the Theory of Planned Behavior addresses the importance of attitude,¹⁰ while the social-ecological model emphasizes the role of the environment.¹¹ Many of these predictors have been examined and supported in previous studies.^{12–14} However, it

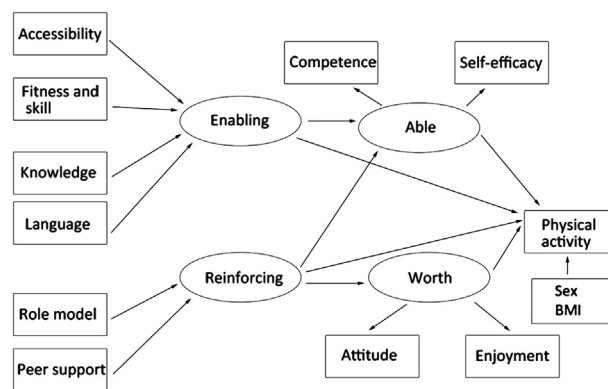


Fig. 1. Proposed youth physical activity promotion model for Chinese international students. Able and worth are the two components of the predisposing factors. BMI = body mass index.

is not clear how these factors collaboratively influence PA behavior, nor are the internal relationships among these factors well-understood. That is, both direct and indirect relationships may exist. The YPAP proposes a new approach for understanding PA behavior by considering individual, social, and environmental factors. The YPAP model has been tested among children, adolescents, and youth, and its ability to predict PA has been partially supported.^{15–17} However, none of the studies have tested the entire model simultaneously. Therefore, the interrelationships among the different constructs within the model remain unclear. It is also unclear whether the YPAP model can be used among young adults. The model was originally developed as a framework to help researchers identify variables that influence youth PA behavior. Yet most of the predisposing factors within the YPAP model appear to be related to young adult college students' PA behavior as well. For example, college students have proximal access to distinct environmental assets given that most colleges and universities provide various opportunities for PA in the form of physical education classes; intramural, club, and varsity sports; and access to recreation facilities.¹⁸ Awareness and knowledge of these opportunities influences participation.¹⁹ Gym membership on or off campus is another predictor of college students' PA behavior,²⁰ as is the distance to and availability of active places for recreation.²¹

As for the reinforcing factors, peers appear to have a stronger social support influence on college students than do parents;²⁰ however, one's cultural background may moderate this relationship. Social support may be especially important for Chinese international students since social support is more consistent with a collectivistic worldview. For example, one study found social affiliation to be the primary reason for PA participation among Chinese male and female college students living in the US.²²

The YPAP model also identified demographic factors, such as age, race, and sex as being influential determinants of PA.⁵ English fluency may be a unique demographic factor influencing the PA behavior of people whose first language is not English.²³

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