Social Cognitive Theory Associated with Physical Activity in Undergraduate Students: A Cross-sectional Study

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Abstract: In this study we tested Social Cognitive Theory constructs to predict physical activity levels in undergraduate students. A cross-sectional design was conducted with a sample of 787 health science and non-health science undergraduate students (241 males and 546 females) studying at Srinakharinwirot University, Ongkharak Campus, Thailand. Participants completed four questionnaires measuring three Social Cognitive Theory variables (exercise-related self-efficacy, outcome expectations and self-regulation) and one physical activity variable (leisure-time physical activity). All of the Social Cognitive Theory variables were significantly correlated with physical activity. Self-efficacy had the highest correlation coefficient followed by self-regulation and outcome expectations, respectively. Inter-correlations among Social Cognitive Theory variables were moderate. All of the variables contributed a significant portion of the variance, were retained in the model, and accounted for 29% of the variance in physical activity. The influence of self-efficacy on physical activity was partially mediated by both self-regulation and outcome expectations. The results indicate that Social Cognitive Theory constructs can be used to predict physical activity in undergraduate students. Health practitioners such as nurses can use these constructs to try to effect changes in physical activity behaviour among undergraduate students and design physical activity intervention program that focus on increases self-efficacy, self-regulation and outcome expectations to promote physical activity in undergraduate students.

Pacific Rim Int J Nurs Res 2016; 20(2) 95-105

Keywords: Outcome expectation, Physical activity, Self-efficacy, Self-regulation, Social cognitive theory

Introduction

For health benefits, everyone should perform physical activity (PA). Nonetheless, the majority of the world's population does not engage in enough PA to achieve health benefits.[1] A survey study using accelerometers in Canada found that about 85% of Canadians adults did not participate in sufficient PA to get health benefits.[2] This trend is also found in Thailand. A study in 2013 found that only about

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68% of the whole population in Thailand had sufficient PA;[3] however, PA in university students was quite low. It was about 23% in Thai men and about 2% in Thai women.[4] Moreover, studies in Canada and the United Kingdom have found that the prevalence of adequate PA is higher in children and adolescents than in adults.[2] But, PA decreases and body weight increases during the first two years of university.[5] These studies suggest that late adolescence and early adult life may be a critical period of transition.[6] Thus, promoting and encouraging students to continue PA will be necessary to offset declines in PA over the adult lifespan and to reduce health concerns.

Review of Literature

It is well known that PA can be promoted through theoretically based interventions.[7] Social Cognitive Theory (SCT)[8] is a useful theory that has been used in health behavior interventions.[9] SCT explains and predicts health behavior and describes methods to change health behavior.[10] According to the theory, human behavior is explained in term of a reciprocal determinism in which personal (e.g., demographic and psychosocial), behavioral (e.g., PA), and environmental factors (e.g., physical and social support) have reciprocal effects wherein change in one factor causes the other two factors to change as well.[8] However, SCT focuses on increasing a person's behavioral capability (i.e., knowledge and skills) and self-confidence (i.e., self-efficacy) to engage in health behaviors.[10] It is believed that all behavioral changes are mediated by cognitive mechanisms (i.e., self-efficacy). Spence and Lee recognize person-behavior-environment interactions that are mediated by cognitive mechanisms.[11] That is, environmental and behavioral factors directly influence individual's self-efficacy to perform healthier behaviors. Self-efficacy is the confidence to perform behavior and to overcome obstacles in performing behavior.[12] In addition, behavior change and maintenance are also related to outcome expectations and self-regulation.[10, 13-14] Outcome expectations are expectations that a particular outcome will be produced from performing a given behavior,[15] and self-regulation is a person's skill to determine goals, use effective methods for achieving goals, and evaluate an outcome by self-monitoring.[16]

According to SCT, self-efficacy impacts behavior (e.g., PA) both directly and indirectly through outcome expectations and self-regulation (i.e., goals).[10] That is, self-efficacy influences goals, aspirations, and outcomes. Individuals who have higher self-efficacy will set challenging goals and put more effort to achieve their goals and expect higher outcomes. In reverse, those with lower self-efficacy will set lower goals and expect lower outcomes.[10] Nonetheless, some authors argue that outcome expectations operate to influence self-efficacy in PA.[15] Increases in positive outcome expectancies could reduce negative outcome expectancies and thus make individuals perceived that they had ability to perform PA. Therefore, increases in positive outcome expectancies of PA and decreases in negative outcome expectancies of PA would increase self-efficacy for PA. Similarly, there is evidence to support that self-efficacy impacts behavior through self-regulation. It was found that the relationships between self-efficacy and PA was mediated by self-regulation,[17-18] without self-regulation, self-efficacy has lower influence on PA.[19] Thus, self-efficacy, outcome expectations, and self-regulation are important determinants of the SCT constructs and are associated with PA changes.[13-14, 20] They play an important role in PA initiation and adherence,[21-22] and can explain some variance of PA.[23-25] There is a positive relationship between SCT constructs (e.g., self-efficacy) and PA change. For example, in college students, SCT could explain 55% of the variance in PA[26] and predict 27.2% of the variance in vigorous PA.[27]

Despite considerable research showing the role of self-efficacy, outcome expectations, and self-regulation in PA behavior, there are no validated relationships of these constructs in Thai population, especially in university students. The majority of the research examining the relationships between the

SCT constructs and PA has taken place with North American and European populations, and less research has examined work in Thailand. Thus, there is no evidence that the SCT constructs, such as self-efficacy, are also relevant in non-Western cultures. An important first step in addressing this gap in evidence is to examine the relationships between the SCT constructs and PA, obtain correlation coefficients and predicted variances evidence, and assess their relevance in the cultures of influence. The findings of this study are important in promoting PA in this country, especially in university students since the most of Thai university students are not active enough to achieve health benefits.[4] Prior to developing PA promotion interventions targeting this population, adequate examination of the relationship between SCT constructs and PA are needed. It is important to determine whether predictive indicators that have been found to be important in Western countries (for example, SCT constructs) are meaningful in Thailand. Thus, the results of this study will provide a vision for creating an effective intervention program to promote PA in Thai graduates students.

Three research goals were set for the purpose of answering the main research question: *Are the SCT constructs related to PA in Thai undergraduate students?* The first goal was to examine the relationships among SCT constructs and PA. The second goal was to test the SCT constructs in the prediction of PA. The last goal was to examine whether outcome expectations and self-regulation mediated the relationship between self-efficacy and PA. Based on previous studies, it was hypothesized that the SCT constructs would relate to PA and the SCT constructs would predict PA. It was further hypothesized that outcome expectations and self-regulation would mediate the relationship between self-efficacy and PA.

Method

A cross-sectional design was conducted with a sample of undergraduate students enrolled in the first semester courses of academic year 2015 of Srinakharinwirot University. The study design and protocols were reviewed and approved by the Srinakharinwirot University Human Research Ethics Boards. The approval number: SWUEC/X-028/2556. All participants provided a signed, informed consent.

Participants: The number of participants was calculated based on the undergraduate student population using Yamane's Table, the confidence level 0.95%, and the errors ± 4. At least 600 participants were needed. However, 787 health science and non-health science undergraduate students (241 males and 546 females) volunteered to participate in this study. They were recruited from five first-year wellness and healthy lifestyle classes, through invited by university lecturers, by advertising placed on university notice boards, and postings on the university websites' internet advertisements. Participants were screened for eligibility via interview. Eligibility criteria included: undergraduate student, aged 18-22 years, and able to exercise.

Procedure: The data were collected in the class rooms over one week period in the month of January 2015. All eligible participants completed informed consent procedures. The details of the study were explained to participants. Participants completed a demographic information survey and completed question sets measuring PA and all the SCT variables, in random order. Each question was read out loud to the students, and students who had difficulty understanding were given help. Participants who gave incomplete answers were asked to clarify their answers. They averaged about 30 minutes to complete all the questions.

Measures: The total weekly leisure-time activity scores (LTAS) was assessed using the Thai version of the Godin-Shephard Leisure-Time Physical Activity Questionnaire (GSLTPAQ).[28] The questionnaires included questions such as: "Considering a 7-Day period (a week), how many times on average do you do the following kinds of physical activity (i.e., strenuous, moderate, and mild) for more than 15

minutes during your free time?" The total weekly LTAS is calculated by multiplying weekly frequencies of mild, moderate, and strenuous activities by 3, 5, and 9 respectively which correspond to metabolic equivalent categories of the activities listed and summing the products.[29] The Thai version of the GSLTPAQ has shown test-retest reliability (r = 0.96) and construct validity (r = 0.93) with Thai female undergraduate students.[28]

Self-efficacy, outcome expectations, and self-regulation were assessed using Thai versions of the Multidimensional Self-efficacy for Exercise Scale (MSES), Outcome Expectations Questionnaire (OEQ), and Self-regulation Questionnaire (SRQ) respectively.[28] The MSES contains 9 items that measure task, coping, and scheduling efficacy for performing PA.[30] Each item starts with the statement: "How confident are you that you can...", and follows with statements to measure task (e.g., follow directions), coping (e.g., when lacking energy), and scheduling (e.g., in your daily routine) efficacies. All items were rated from 0% (no confidence) to 100% (complete confidence). A previous study in Thai female undergraduate students reported a Cronbach's alpha of 0.93 for task, coping, and scheduling efficacies.[28] In this study, analyses showed a Cronbach's alpha of 0.86 for task, 0.90 for coping, and 0.93 for scheduling efficacies.

The OEQ contains 9 items regarding the beliefs and values of outcomes of being active (e.g., weight control, fun, fitness). Each item was rated on a 5-point belief scale ranging from disagree a lot (1) to agree a lot (5), then on a 5-point value scale ranging from very unimportant (1) to very important (5).[31] Cronbach's alphas ranging from 0.82 to 0.84 for mental, social benefits, and physical outcomes of PA have been reported with female Thai undergraduate students.[28] In this study, a Cronbach's alpha showed 0.91 for OEQ.

The SRQ contains a 10-item Exercise Goal-Setting Scale (EGS) and a 10-item Exercise Planning and Scheduling Scale (EPS).[26] The EGS includes items associated to goal setting, self-monitoring, and problem solving. The EPS includes items associated with scheduling and planning exercise. All items were scored on a 5-point scale ranging from 1 (does not describe) to 5 (describes completely).[26] A previous study in Thai female undergraduate students reported good internal reliabilities (Cronbach's alphas = 0.72-0.89).[28] In this study, a Cronbach's alpha showed 0.79 for SRQ.

Data Analysis: The Statistical Package for Social Sciences (SPSS for Windows 21.0, SPSS Inc., Chicago, IL) was used for analyzing all data. Prior to analysis, we had critically examined the quality of our data. The data were coded properly and the values entered properly within an expected range. Missing data and outliers were dealt with and any assumptions underlying our statistical test of choice were evaluated. To describe the participants, means, standard deviations, and a Pearson product moment correlation matrix were produced. To test the ability of the SCT variables to collectively account for variance in PA, stepwise multiple regression was used. The framework proposed by Baron and Kenny was used for the mediation analyses.[32] They suggested a method using a multiple regression model based on 3 variables: A (the independent variable), B (the mediator), and C (the dependent variable). To establish mediation, the following conditions must be established: (1) A must be related to B. (2) A must also be related to C. (3) when C is regressed on both A and B, B must be significantly related to C, and the relationship between A and C lessened. The significance level was set at 0.05.

Results

Participant Characteristics: The mean and standard deviations for age, weight, height, and BMI of participants were 20.79 ± 1.64 years old, 57.68 ± 12.69 kilograms, 165.47 ± 7.87 centimeters, and 20.96 ± 3.65 kg/m^2, respectively. Means and standard deviations for PA and SCT variables are shown in Table 1.

Table 1 Correlations between physical activity, self-efficacy, outcome expectations, and self-regulation

Variables	M *(SD)*	PA 44.28(14.68)	SE 48.48(20.13)	OE 72.97(12.70)	SR 60.59(10.33)
PA	44.28 (14.68)	-			
SE	48.48 (20.13)	0.50	-		
OE	72.97 (12.70)	0.37	0.44	-	
SR	60.59 (10.33)	0.42	0.54	0.53	-

Note. All r in the matrix are significant at p < 0.01 (two-tailed significance). M = Mean, SD = Standard deviation, PA = Physical activity, SE = Self-efficacy, OE = Outcome expectations, SR = Self-regulation

Bivariate Correlations: Pearson correlations between SCT variables and PA are presented in Table 1. All of the SCT variables were positively significant with PA at the $p < 0.01$. Inter-correlations among SCT variables were moderate. Thus, the SCT variables will not increase more the total variance in PA accounted for in the regression model.

Multiple Regression Analysis: The stepwise multiple regression analysis results are presented in Table 2. The dependent variable for the multiple regression analysis was PA. The independent variables were the SCT variables. All of the SCT variables contributed a significant portion of the variance and were retained in the model. Together, the SCT variables accounted for 29% of the variance in PA $F(3,783) = 106.81$, $p < .01$). Self-efficacy was the most critical variable.

Table 2 Stepwise regression analysis: SCT variables on physical activity

SCT Variables	Sum of R^2	R^2 Change	F change	Sig. of F change	Beta
SE	.245	.245	255.17	.00	.350
SR	.279	.033	36.22	.00	.162
OE	.290	.012	12.98	.00	.131

Note. SCT = Social cognitive theory, SE = Self-efficacy, OE = outcome expectations, SR = self-regulation

Mediation Analyses: To test whether or not self-regulation and outcome expectations mediated the relationship between self-efficacy and PA, multiple regression analyses were conducted. Three regression equations were tested for the hypothesized mediators (i.e., self-regulation and outcome expectations variables). For each mediation analysis, equation 1 tests the influence of the self-efficacy on hypothesized mediators; equation 2 tests the influence of self-efficacy on PA; and equation 3 tests the influence of hypothesized mediators on PA when self-efficacy is controlled.

The mediation analyses for self-regulation are presented in Figure 1. First, the self-efficacy was used to predict self-regulation ($F = 325.32$, $p < .01$, $R^2 = .24$; see Figure 1a). Second, the self-efficacy was used to predict PA ($F = 255.17$, $p < .01$, $R^2 = .24$; see Figure 1b). Third, both self-efficacy and self-regulation were used to predict PA ($F = 151.42$, $p < .01$, $R^2 = .28$; see Figure 1c). For the mediation model, the regression coefficient for both self-efficacy and self-regulation was significantly different from zero (Figure 1c). These analyses supported a mediation model, suggesting that self-regulation partially mediated

the influence of self-efficacy on PA. Despite self-efficacy and self-regulation being found to be significant predictors of PA ($p < 0.01$), the introduction of self-regulation in the model lessened the predictive power self-efficacy had on PA is an indication of self-regulation's partial mediation of self-efficacy's effect on PA. This could be confirmed by the beta coefficient for the relationship between self-efficacy and PA is 0.49 but is reduced to 0.38 when self-regulation is introduced and included in the model.

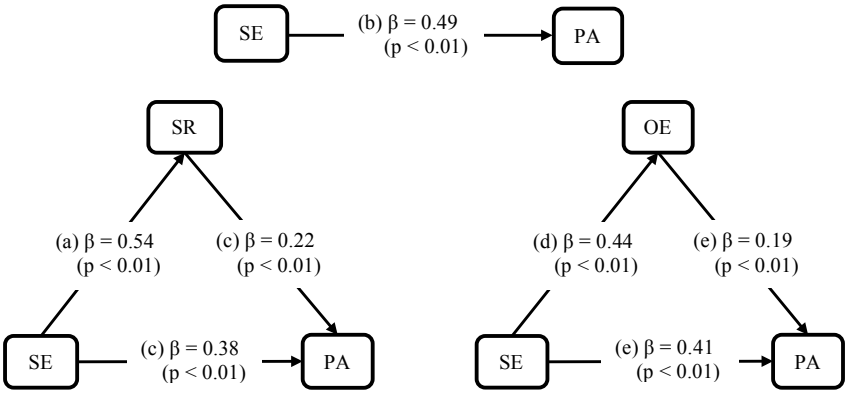

Figure 1 Mediating effects of self-regulation and outcome expectations on the relationship between self-efficacy and physical activity.

Note. SR = Self-regulation, SE = Self-efficacy, PA = Physical activity, OE = Outcome expectations

The analysis results for outcome expectations are presented in Figure 1. First, self-efficacy was used to predict outcome expectations ($F = 184.48$, $p < .01$, $R^2 = .19$; see Figure 1d). Second, self-efficacy was used to predict PA ($F = 255.17$, $p < .01$, $R^2 = .24$; see Figure 1b). Third, both self-efficacy and outcome expectations were used to predict PA ($F = 148.46$, $p < .01$, $R^2 = .27$; see Figure 1e). For the mediation model, the regression coefficient for both self-efficacy and outcome expectations was statistically significantly different from zero (Figure 1e). These analyses supported a mediation model, suggesting that outcome expectations partially mediated the influence of self-efficacy on PA. Despite self-efficacy and outcome expectations being found to be significant predictors of PA ($p < 0.01$), the introduction of outcome expectations in the model lessened the predictive power self-efficacy had on PA is an indication of outcome expectation's partial mediation of self-efficacy's effect on PA. This could be confirmed by the beta coefficient for the relationship between self-efficacy and PA is 0.49 but is reduced to 0.41 when outcome expectation is introduced and included in the model.

Discussion

This study examined SCT correlates of physical activity among undergraduate students to identify factors that will be useful for the development of behavioral interventions for this population. First, the result found the relationships between the SCT constructs and PA in Thai undergraduate students. SCT constructs had moderate associations with PA. Self-efficacy had the highest correlation coefficient with PA followed by self-regulation and outcome expectations. This result is comparable to previous studies in American college students, [24, 26-27] and supports other studies that have posited the importance of the relationship of SCT constructions to PA.[9, 10, 21,

[23, 33] The association between the SCT constructs and PA in this study confirmed the fact that self-efficacy, outcome expectations, and self-regulation are important determinants of PA.[13, 34]

Second, our findings showed that the SCT constructs could predict PA in undergraduate students. The final regression model explained 29% of the variance in physical activity. This is consistent with previous findings conducted in North America countries.[24, 26, 27, 33] We suggest that the current findings provide preliminary evidence that self-efficacy, outcome expectations, and self-regulation may be important mediators of PA in Thai undergraduate students. We also support using of SCT constructs in developing an intervention PA program.

Lastly, mediation analysis revealed that the correlation between self-efficacy and PA was partially mediated by self-regulation and outcome expectations. This supports the important of the SCT constructs for behavior change; specifically suggesting that self-efficacy impacted PA by self-regulation and outcome expectations. [10,19] It is well known that self-efficacy is one of the most important predictors of starting and maintaining PA,[22-23] and is related to PA change.[22, 35-36] However, previous studies suggested that the influence of self-efficacy on PA may be mediated by self-regulation.[17-18,26] Self-regulation had medium to high relationships with self-efficacy and PA.[19] If self-regulation was not used in an intervention, self-efficacy was less predictive of PA.[19, 23] Also, this study supports the relationship among self-efficacy, outcome expectations, and PA. It is documented that outcome expectations flow from self-efficacy and directly impacts behavior, with positive outcome expectations increase behavior and negative outcome expectations decrease behavior.[15] It is possible that outcome expectations operate to influence self-efficacy. If people decrease in negative outcome expectations or barriers of PA, they are more likely to perceive that they are able to perform PA. Similarly, if people increase in positive outcome expectations about PA, their self-efficacies about PA will increase.[15]

Strengths and Limitations

There are some limitations in this study. First, this study was a cross-sectional study, we were not able to determine causality mediation. Thus, this study could only examine effects reliable with mediation. Also, because of the design, this study could not account for reciprocal determinism, a primary principle of SCT. Second, this study was also limited by self-report of PA. However, the Thai version of the GSLTPAQ has been demonstrated to be a valid and reliable measure of PA in Thai university students.[28] Third, participants were university students; thus the findings are limited in generalizability to other Thai populations, particularly those who are not studying in university. The SCT hypothesized that personal, behavior, and environmental factors are all interact to influence behavior.[8] However, this study focused on personal and behavioral factors since the environmental factor (e.g., sport facilities) in the university is already supported. Thus, testing the relationship between the SCT constructs and PA in other Thai populations that environmental factors are not supported needs to be investigated. Although this study has these limitations, it is the first study to examine the relationship among self-efficacy, outcome expectations, self-regulation, and PA in Thai undergraduate students. Also, it is the first study in Thailand examining the mediating effect of outcome expectations and self-regulation on the relationship between self-efficacy and PA in undergraduate students.

Conclusion and Implications for Nursing Practice

The results of this study indicate that the SCT constructs can be used in Thai students and that the structure of the constructs is similar to North

American populations. This is promising and allows for further examination of these constructs in relation to PA behavior in ways that are theoretically consistent but have received minimal testing in Thai or other Asia Pacific groups. This is important as we cannot assume that constructs that have been shown to be valid in Western populations will generalize to other cultures. The findings also support the hypothetical basis of the SCT constructs by demonstrating the relationships among self-efficacy, outcome expectations, self-regulation, and PA. Moreover, the findings extend previous studies by indicating that self-regulation and outcome expectations partially mediated the relationship between self-efficacy and PA in Thai university students. Since self-efficacy, outcome expectancy, and self-regulation are important determinants of behavior changes, it is suggested that the SCT constructs can be used as a model for developing an intervention program for promoting PA in undergraduate students. Health practitioners such as nurses can use these constructs for developing PA intervention program to try to effect changes in PA behavior among undergraduate students. In order to promote PA, an intervention program should be focussed on increasing self-efficacy, self-regulation, and outcome expectations.

Acknowledgement

This study was supported by grant number 170/2557 from Srinakharinwirot University, Thailand.

References

1. World Health Organization. *Physical inactivity: A global public health problem. Sedentary lifestyle.* World Health Organization. [cited 2015 Nov 25]. Available from http://www.who.int/dietphysicalactivity/factsheet_inactivity/en/index.html
2. Colley RC, Garriguet D, Janssen I, Craig CL, Clarke J, Tremblay MS. Physical activity of Canadian adults: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. Health Reports (Statistics Canada, Catalogue no) 2011; 82-003-XPE), 22, 1-8.
3. Katewongsa P, Sawangdee Y, Yousomboon C, Choolert P. Physical activity in Thailand: The general situation at national level. J Sci Med Sport 2014; 18: e100-e101
4. Sisson SB, Katzmarzyk PT. International prevalence of physical activity in youth and adults. Obes Rev 2008; 9(6): 606-14. http://dx.doi.org/10.1111/j.1467-789X.2008.00506.x
5. Hajhosseini L, Holmes T, Mohamadi P, Goudarzi V, McProud L, Hollenbeck CB. Changes in body weight, body composition and resting metabolic rate (RMR) in first-year university freshmen students. J Am Coll Nutri 2006; 25, 123-127.
6. Leslie E, Fotheringham MJ, Owen N, Bauman A. Age-related differences in physical activity levels of young adults. Med Sci Sports Exerc 2001; 33, 255-258
7. Baranowski T, Anderson C, Carmack C. Mediating variable framework in physical activity interventions: How are we doing? How might we do better? Am J Prev Med 1998; 15(4): 266-97.
8. Bandura A. Social foundations of thought and action: A social cognitive theory. Englewoods Cliffs, NJ: Prentice Hall. 1986.
9. Norman GJ, Zabinski MF, Adams MA et al. A review of eHealth interventions for physical activity and dietary behaviour change. Am J Prev Med 2007; 33(4): 336-45. http://dx.doi.org/10.1016/j.amepre.2007.05.007
10. Bandura A. Health promotion by social cognitive means. Health Educ Behav 2004; 31(2): 143-64. http://dx.doi.org/10.1177/1090198104263660
11. Spence JC, Lee RE. Toward a comprehensive model of physical activity. Psychol Sport Exerc 2003; 4(1): 7-24. http://dx.doi.org/10.1016/S1469-0292(02)00014-6
12. Glanz K, Lewis FM, Rimer BK. Health Behavior and Health Education: Theory, Research, and Practice. San Francisco, Jossey-Bass, 2002. http://dx.doi.org/10.1249/00005768-199112000-00016
13. Hallam JS, Petosa R. The long-term impact of a four-session work-site intervention on selected social cognitive theory variables linked to adult exercise adherence. Health Educ Behav 2004; 31(1): 88-100. http://dx.doi.org/10.1177/1090198103259164
14. Winett RA, Anderson ES, Wojcik JR et al. Guide to health: Nutrition and physical activity outcomes of a group-randomized trial of an internet-based intervention in churches. Ann Behav Med 2007; 33(3): 251-61. http://dx.doi.org/10.1007/BF02879907

15. Williams DM, Anderson ES, Winett RA. A review of the outcome expectations construct in physical activity research. Ann Behav Med 2005; 29(1): 70-9. http://dx.doi.org/10.1207/s15324796abm2901_10
16. Schnoll R, Zimmerman BJ. Self-regulation training enhances dietary self-efficacy and dietary fiber consumption. J Am Diet Assoc 2001; 101(9):1006-11. http://dx.doi.org/10.1016/S0002-8223(01)00249-8
17. Anderson ES, Winett RA, Wojcik JR et al. Social cognitive mediators of change in a group randomized nutrition and physical activity intervention: Social support, self-efficacy, outcome expectations and self-regulation in the guide-to-health trial. J Health Psychol 2010; 15(1): 21-32. http://dx.doi.org/10.1177/1359105309342297
18. Wadsworth DD, Hallam JS. Effect of a web site intervention on physical activity of college females. Am J Health Behav 2010; 34(1): 60-9. http://dx.doi.org/10.5993/AJHB.34.1.8
19. Umstattd MR, Wilcox S, Saunders R et al. Self-regulation and physical activity: The relationship in older adults. Am J Health Behav 2008; 32(2): 115-24. http://dx.doi.org/10.5993/AJHB.32.2.1
20. Sriramatr S, Berry TR, Spence JC. An Internet-based intervention for promoting and maintaining physical activity: a randomized controlled trial. Am J Health Behav. 2014; 38(3): 430-9. http://dx.doi: org/10.5993/AJHB.38.3.12.
21. Stadler G, Oettingen G, Gollwitzer PM. Physical activity in women: Effects of a self-regulation intervention. Am J Prev Med 2009; 36(1): 29-34.
22. Tavares LS, Plotnikoff RC, Loucaides C. Social-cognitive theories for predicting physical activity behaviours of employed women with and without young children. Psychol Health Med 2009; 14(2): 129-42. http://dx.doi.org/10.1080/13548500802270356
23. Anderson ES, Wojcik JR, Winett RA et al. Social-cognitive determinants of physical activity: The influence of social support, self-efficacy, outcome expectations, and self-regulation among participants in a church-based health promotion study. Health Psychol 2006; 25(4): 510-20. http://dx.doi.org/10.1037/0278-6133.25.4.510
24. Dlugonski D, Motl, RW. Social cognitive correlates of physical activity among single mothers with young children. Psychology of Sport & Exercise 2014; 15(6): 637-641.http://dx.doi:10.1016/j.psychsport.2014.07.007
25. Dewar DL, Plotnikoff RC, Morgan PJ, et al. Testing Social-Cognitive Theory to explain physical activity change in adolescent girls from low-Income communities. Res Q Exerc Sport 2013; 84(4): 483-91. http://dx.doi:10.1080/02701367.2013.842454
26. Rovniak LS, Anderson ES, Winett RA et al. Social cognitive determinants of physical activity in young adults: A prospective structural equation analysis. Ann Behav Med 2002; 24(2): 49-56. http://dx.doi.org/10.1207/S15324796ABM2402_12
27. Petosa RL, Hortz BV, Cardina CE, et al. Social cognitive theory variables associated with physical activity among high school students. Inter J Sports Med 2005; 26(2): 158-63. http://dx.doi.org/10.5993/AJHB.27.4.2
28. Sriramatr S, Berry TR, Rodgers WM. Validity and reliability of Thai versions of questionnaires measuring leisure-time physical activity, exercise-related self-efficacy, outcome expectations and self-regulation. Pac Rim Int J Nurs Res 2013; 17(3): 203-16.
29. Godin G. The Godin-Shephard leisure-time physical activity questionnaire. Health Fit J Canada 2011; 4(1): 18-22.
30. Rodgers WM, Wilson PM, Hall CR et al. Evidence for a multidimensional self-efficacy for exercise scale. Res Q Exerc Sport 2008; 79(2): 222-34. http://dx.doi.org/10.1080/02701367.2008.10599485
31. Dishman RK, Motl RW, Sallis JF et al. Self-management strategies mediate self-efficacy and physical activity. Am J Prev Med 2005; 29(1): 10-8. http://dx.doi.org/10.1016/j.amepre.2005.03.012
32. Baron RM, Kenney DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. J Pers Soc Psychol 1986; 51(6):1173-82. http://dx.doi.org/10.1037/0022-3514.51.6.1173
33. Plotnikoff RC, Costigan SA, Karunamuni N, Lubans DR. Social cognitive theories used to explain physical activity behavior in adolescents: A systematic review and meta-analysis. Prev Med 2013; 56(5): 245-53. http://dx.doi:10.1016/j.ypmed.2013.01.013.
34. Marcus BH, Williams DM, Dubbert PM, et al. Physical activity interventions: What we know and what we need to know. A scientific statement from the American Heart Association Council on Nutrition, Physical Activity, and Metabolism. Circulation 2006; 114: 739-52.

35. Koh D, Miller YD, Marshall AL et al. Health-enhancing physical activity behavior and related factors in postpartum women with recent gestational diabetes mellitus. J Sci Med Sport 2010; 13(1): 42-5. http://dx.doi.org/10.1016/j.jsams.2008.10.003

36. Mailey EL, Mcauley E. Impact of a brief intervention on physical activity and social cognitive determinants among working mothers: a randomized trial. J Behav Med. 2014; 37(2): 343-55. http://dx.doi:10.1007/s10865-013-9492-y.

ทฤษฎีกระบวนการรับรู้ทางสังคมมีความสัมพันธ์กับกิจกรรมทางกายของนักศึกษาระดับปริญญาตรี: การวิจัยแบบตัดขวาง

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บทคัดย่อ: การศึกษานี้ ได้ทดสอบโครงสร้างของทฤษฎีกระบวนการรับรู้ทางสังคมในการพยากรณ์กิจกรรมทางกายของนักศึกษาระดับปริญญาตรี โดยใช้การศึกษาแบบตัดขวาง ผู้เข้าร่วมวิจัยเป็นนักศึกษาระดับปริญญาตรีทั้งสายวิทยาศาสตร์และไม่ใช่วิทยาศาสตร์ จำนวน 787 คน (ชาย 241 และหญิง 546 คน) ที่กำลังศึกษาอยู่ที่มหาวิทยาลัยศรีนครินทรวิโรฒ องครักษ์ กลุ่มผู้เข้าร่วมวิจัยตอบแบบสอบถาม 4 ชุด ประเมินสามตัวแปรของทฤษฎีกระบวนการรับรู้ทางสังคม (คือ ความเชื่อมั่นในตนเอง การคาดหวังผลลัพธ์ และการควบคุมตนเอง) และหนึ่งตัวแปรของกิจกรรมทางกาย (คือ กิจกรรมทางกายในยามว่าง) ตัวแปรทั้งสามของทฤษฎีกระบวนการรับรู้ทางสังคมมีความสัมพันธ์กับกิจกรรมทางกาย อย่างมีนัยสำคัญทางสถิติ ความเชื่อมั่นในตนเองมีสัมประสิทธิ์สหสัมพันธ์สูงที่สุด ตามด้วยการควบคุมตนเอง และการคาดหวังผลลัพธ์ ตามลำดับ สัมประสิทธิ์สหสัมพันธ์ระหว่างตัวแปรของทฤษฎีกระบวนการรับรู้ทางสังคมอยู่ระดับปานกลาง ตัวแปรทั้งสามของทฤษฎีกระบวนการรับรู้ทางสังคมร่วมกันพยากรณ์ความแปรปรวนของกิจกรรมทางกายได้ร้อยละ 29 อิทธิพลของความเชื่อมั่นในตนเองที่มีต่อกิจกรรมทางกายมีการควบคุมตนเองและการคาดหวังผลลัพธ์เป็นตัวกลาง ผลการศึกษาแสดงให้เห็นว่า ทฤษฎีกระบวนการรับรู้ทางสังคมสามารถใช้พยากรณ์กิจกรรมทางกายในนักศึกษาระดับปริญญาตรีได้ บุคคลากรทางสุขภาพ เช่น พยาบาล สามารถใช้ทฤษฎีกระบวนการรับรู้ทางสังคมในความพยายามที่จะก่อให้เกิดการเปลี่ยนแปลงของพฤติกรรมการมีกิจกรรมทางกายในกลุ่มนักศึกษาระดับปริญญาตรีได้ และสามารถออกแบบโปรแกรมกิจกรรมทางกายที่เพิ่มความเชื่อมั่นในตนเอง การคาดหวังผลลัพธ์ และการควบคุมตนเอง เพื่อสร้างเสริมการมีกิจกรรมทางกายได้

Pacific Rim Int J Nurs Res 2016; 20(2) 95-105

คำสำคัญ: ทฤษฎีกระบวนการรับรู้ทางสังคม กิจกรรมทางกาย ความเชื่อมั่นในตนเอง การคาดหวังผลลัพธ์ การควบคุมตนเองเกี่ยวกับกิจกรรมทางกาย

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