

PREDICTION OF INTENTION FOR PHYSICAL ACTIVITY ON BASIS OF BASIC PSYCHOLOGICAL NEEDS SATISFACTION

Vali Khalkhali*

Department of Psychology, Malayer Branch, Islamic Azad University, Malayer, Iran

Abstract:

Life long participation in fitness activities might not be achieved unless physical education teachers create an appropriate environment that motivates students to engage in physical education. The purpose of this study was to predict of intention for physical activity outside of university on basis of basic psychological needs satisfaction. The authors argue basic psychological needs satisfaction could positively predict the intention of students to be physically active outside of university. The subjects were 347 Iranian female students who participated in 16 regular physical education classes. Perceived basic psychological needs satisfaction scale and intention to be physically active questionnaire have been used to assess data. The results of regression analysis showed that basic psychological needs satisfaction can predict intention. Prediction power was not same for all three basic psychological needs. The results indicated that students' autonomy need is the best predictor for intention for physical activity outside of university. With respect to intention for physical activity after university, these results highlight the importance of taking into account the satisfaction of basic psychological needs, with special attention to need for autonomy.

Key Words: *basic psychological needs; intention for physical activity; self-determination theory; physical education.*

1. Introduction

Development of life long participation in fitness activities was an aim of various curriculums [1]. Although there is strong evidence that regular physical activity has important health benefits, such as cardiovascular fitness, psychological health, skeletal health and body composition [2], but low levels of physical activity in the youth population are of great concern, and have been linked to numerous consequences, such as increased risk of childhood obesity and Type II diabetes [3]. One of the most important aims of PE at university is to promote regular physical activity participation among students. All Persian students have to pass two courses at Physical Education (PE) at university. PE class is a context which can promote physically active lifestyles in students. Life long participation in fitness activities could not be achieved, unless physical education teacher create the appropriate environment which promote students' motives for engagement in the physical education [4]. Importance is how motivating PE classes are for the students, and how much PE teachers are able to increase the young people participation in physical activities. When teachers support their students' interests (rather than control their behavior), students are more likely to find value in their physically active lifestyle [5]. Once nurtured and developed in the classroom, motivation can therefore function as a student-owned internal resource that contributes significantly to the decision to be physically active out of university.

Self-determination theory [6] is a motivational theory that can be used as a framework to examine students' reasons and motives for participating in the physical education as well as the factors that are associated with them. According to this theory, Social contexts differ in the way communicate with peoples. The SDT proposes that human beings have innate psychological needs for autonomy, competence and relatedness. Autonomy refers to being the source of one's own

* Corresponding author. Tel.: +98-912-282-7792
E-mail address: v.khalkhali@iau-malayer.ac.ir

behavior and achieving congruence between the activity and one's integrated sense of self. Competence refers to the need to have an effect on the environment and to achieve desired outcomes, and relatedness is the desire to feel connected to valued others [7]. The more these needs are satisfied, the greater the level of one's self-determination. People are more likely to be intrinsically motivated, that is, to do an activity simply for the enjoyment they derive from it, when they can freely choose to pursue an activity (autonomy/choice), when they master the activity (competence) and when they feel connected and supported by important people, such as a manager, a parent, a teacher or teammates (relatedness).

Within SDT [8], social contexts are described as being controlling versus autonomy-supportive. The degree to which needs to autonomy, competence, and relatedness are satisfied by PE teachers influences on students' behavioral regulations that show the perceived loci of causality of individuals' behavioral goals and reflect qualitatively different reasons for the behavior chosen. Controlling environments produce an external locus of causality, thereby frustrating people's basic need for self-determination or autonomy, that is, their tendency to engage in a willing and volitional manner in an activity [9]. Activities which appear at first sight uninteresting (the person is therefore not intrinsically motivated) can be internalized into the autonomous self and finally even integrated, if the support of autonomy, competence and social relatedness is successful. Yet, the significance of the three basic needs for the explanation of action and experience can vary depending on the situation and the cultural context [6]. Intrapersonal and interpersonal contexts that support the satisfaction of these needs will promote a person's enjoyment of activities and the autonomous self-regulation of behaviors.

According to the SDT [10], the transformation of external regulation into self-determined forms of regulation, as well as the stability of self-determined (intrinsic) motivation depends on satisfaction of the basic, innate psychological needs for support of autonomy, support of competence, and social support [11].

According to the theory of planned behavior [12], people's overt statement of intention is the strongest predictor of behavior. Hagger et al. [13] proposed that intention summarized a person's general affective and cognitive orientation towards the behavior (attitude), the perceived pressure placed on them by significant others to participate in the target behavior (subjective norm), and their competence-related evaluation of their faculties and capacities towards the behavior (perceived behavioral control). As such, more self-determined forms of behavioral regulations (which effect more positive consequences or adaptive outcomes) are more likely to enhance stronger intentions from a person.

Empirical research has linked self-determination to adaptive consequences, such as higher concentration in the class [14] and effort [4]. Perhaps the factor with the largest impact on students' self-determination in PE is the teacher and his/her teaching style. Much of the research concerning teaching style and SDT has examined the teaching style of autonomy support, which can be considered as a variety of teacher behaviors (e.g., acknowledging students' perspective, providing a rationale for an activity) that enhance students' feelings of volition and promote a perceived internal locus of causality [15]. In PE, an autonomy-supportive environment has been found to enhance students' intrinsic motivation [16].

These results show that the students' self-determination for participating in physical education is associated with positive outcomes. So the examination of Iranian university students' innate psychological needs satisfaction in physical education and its impact on their intention for physical activity out of university it is of great interest. The purpose of this study was to predict of intention for physical activity outside of university on basis of basic psychological needs satisfaction.

2. METHOD

2.1. Participants

The initial student sample contained 431 Iranian female students. However, students who did not complete the entire questionnaire were excluded from the analyses. Hence, all analyses were based on a final sample of 347 PE students (age: $M = 18.81$, $SD = 1.13$, range = 18–23 years).

2.2. Measures

Perceived basic psychological needs satisfaction. Firstly, measure was translated into Persian and Cronbach's alpha coefficient was calculated to assess its internal reliability. Students were asked to report the degree of satisfaction of their three psychological needs in the specified PE class by responding to 9 items. We measured satisfaction of autonomy using six items previously employed by Standage et al. [14] that followed the stem "When I am in this PE class ____." An example item is, "I can decide what activities I want to practice." We measured competence in the specified PE class using the five items that comprise the perceived competence subscale of the Intrinsic Motivation Inventory [17], adapted to the PE domain. An example item is, "I am pretty skilled in this PE class." We measured relatedness using five items from the acceptance subscale of the Need for Relatedness Scale [4]. These five items were modified to reflect the PE context. An example item is "In this PE class I feel supported." All responses were indicated on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). The three subscales have demonstrated acceptable internal reliability in previous PE-based studies [4, 14]. In the present study the Cronbach's alpha coefficients were $\alpha = .70$ (autonomy), $\alpha = .79$ (competence), and $\alpha = .84$ (relatedness).

Intention to be physically active outside of school. Firstly, measure was translated into Persian and Cronbach's alpha coefficient was calculated to assess their internal reliability. Students' intentions to be physically active in their leisure time (outside of school) over a period of 2 weeks was assessed with three items drawn from Hagger et al. [13]. Two items were rated on a seven-point scale. For example, "During my leisure time over the next 2 weeks, I intend to do active sports and/or vigorous physical activities for at least 30 minutes, 3 days per week.", "During my leisure time over the next 2 weeks, I plan to do active sports and/or vigorous physical activities for at least 30 minutes, 3 days per week." – The former anchored by 1 (unlikely) to 7 (very likely) while the latter anchored by 1 (definitely not) to 7 (definitely). One item was rated on a continuous open scale (e.g., "during my leisure time over the next 2 weeks, I plan to do active sports and/or vigorous physical activities for at least 30 minutes, ____ days per week.').

2.3. Procedure

Permission for the study was obtained by the physical education teachers. Authors administered the questionnaire during students' regular class periods and in their regular classrooms in the autumn semester. The administrators used standardized instructions, and explained that the purpose of the study was "to understand students' perspectives on physical activity." Subjects were assured about the confidentiality of their answers. The questionnaire was administered with the absence of physical education teacher by authors. After answering students' questions, the administrators asked the students to complete the questionnaire, and later thanked them for their participation.

3. Results:

Firstly, descriptive statistics were computed. In addition, descriptive statistics were computed followed by analysis of regression.

Table 1 presents the correlations matrix among the three basic psychological needs and intention.

Table-1. Correlation between need for autonomy, competence, relatedness, and Intention

| | | | | |
|--------------------------|---|---------|---------|---------|
| | 1 | 2 | 3 | 4 |
| Need for Autonomy (1) | 1 | 0.713** | 0.523** | 0.687** |
| Need for Competence (2) | | 1 | 0.352** | 0.542** |
| Need for Relatedness (3) | | | 1 | 0.358* |
| Intention (4) | | | | 1 |

**P< .001

As Table 1 shows the positive and significant correlation was observed between three basic psychological needs and Intention to be physically active. For verification of multiple correlation between predictor (independent) variables and dependent variable, a statistical multiple regression methods has been used in survey.

Table-2. Square value of coefficient of multiple correlation for predictor variables

| | | | |
|-------|----------------|-------------------------|--------------------------------|
| R | R ² | Adjusted R ² | Standard Error of the Estimate |
| 0.587 | 0.344 | 0.338 | 3.82 |

As can be seen in above table, psychological needs were accounting for an additional 0.338 of the variance of intention to physical activity.

Table-3. Sum of square analysis and results

| Source | SS | MS | df | F | Sig |
|------------|--------|--------|-----|-------|-------|
| Regression | 382.64 | 127.54 | 3 | 61.61 | 0.000 |
| Residual | 712.52 | 2.07 | 343 | | |

The F value was significant, F (3, 343) =61.613, p<0.000. It shows predictor (independent) variables can predict variance of dependent variable significantly.

Table-4. Coefficients of Regression Equations based on basic psychological needs and intention to physical activity

| Variables | Un-standardized Coefficient | | Standardized Coefficient | t | Sig |
|----------------------|-----------------------------|------------|--------------------------|-------|-------|
| | β | SE β | β | | |
| Need for Autonomy | 0.415 | 0.061 | 0.521 | 6.42 | 0.000 |
| Need for Competence | 0.385 | 0.059 | 0.412 | 5.18 | 0.000 |
| Need for Relatedness | 0.314 | 0.045 | 0.323 | 4.76 | 0.000 |
| Constant | 13.83 | 0.54 | - | 16.17 | 0.000 |

Table-4 shows need for autonomy is strongest predictor of intention. In the second, need for competence have significant relationships with intention. Need for relatedness is a third predictor of intention.

Discussion

SDT posits that the three basic psychological needs satisfaction in classroom could explain variance in motivation and performance. In study we tested the hypothesis that basic psychological needs satisfaction would have positive relationship with intention to be physically active out of university. Results supported the hypothesis. Basic psychological needs satisfaction can help predict physical activity intention positively. The results indicated that students' autonomy need is the best predictor for intention for physical activity outside of university. These findings are consistent with Standage, Duda, & Ntoumanis, [14]; Ntoumanis, [4, 16]; Reeve, Nix, & Hamm, [15], and Lim and Wang [5].

On the basis of SDT, we reasoned that basic psychological needs satisfaction would predict physical activity intention positively by encouraging the transformation of external regulation into self-determined forms and producing more self-determined forms of behavioral regulations for physical activity, as well as the stability of self-determined (intrinsic) motivation depends on satisfaction of the basic, innate psychological needs for support of autonomy, support of competence, and social support [11].

In PE, many students engage in the activities because they are told to do so by the teacher, that is, their behaviors are mostly externally regulated. As such, the onus is on the teachers to adopt appropriate motivational strategies that may enhance more self-determined forms of behavioral regulations in PE. Deci and Ryan [6] recommended that to facilitate autonomous regulation, the PE teacher may provide students with the required information regarding a skill or tactic and then allowing the students choice in the way they wish to execute the task, or the scope that they like to adopt regarding the tactics and game plan. Other practical suggestions also include establishing peer learning groups in which students play different roles (such as demonstrating or refereeing) in the lesson, for example [5].

5. Conclusion

The findings suggest that how much students' three basic psychological needs are satisfied in PE classroom is a strong predictor of their intention to be physically active outside of university. This findings are particularly important considering the significant role of PE in promoting a physically active lifestyle and how this can in turn improve public health [18].

From an applied perspective, since basic psychological needs satisfaction predict intention positively, PE teachers need to provide context to satisfy of three basic psychological needs to promote intention to be physically active outside of university. For this, they could provide the students with opportunities for choice, offer a wide variety of relevant activities, with rationales for doing them, provide increased opportunities for student input, allowing students to play different roles in the lesson, and making decisions with regard to how they want to carry out the activities, and empathies and acknowledge the students' concerns. Use of appropriate expression of choice and support, promote class structures that are autonomy-supportive and curriculum that are interesting and relevant to the students. The current study is not without its limitations. First, a male students wasn't included in study. Second, we used a single measure of intention to be physical activity. Hence, future research might examine whether the present findings among male adolescents could be generalized across male students. Third, the cross-sectional nature of research design which only allowed for a slice-in-time study. Fourth, In the SDT [7], the basic psychological needs are moderated by behavioral regulations. Hence, future research might examine the moderation role of behavioral regulations.

References:

1. Melogran, V. (1996). *Designing the physical education curriculum*. Champaign IL: Human Kinetics.
2. Watts, K., Jones, T. W., Davis, E. A., & Green, D. (2005). *Exercise training in obese children and adolescents*. *Sports Medicine*, 35, 375–392.
3. Department of Health. (2004). *At least five a week: Evidence on the impact of physical activity and its relationship to health. A report from the chief medical officer*. London: Department of Health.
4. Ntoumanis, N. (2001). *A self-determination approach to the understanding of motivation in physical education*. *British Journal of Educational Psychology*, 71, 225–242.
5. Lim, B. S. & Wang, C. K. (2009). *Perceived autonomy support, behavioural regulations in physical education and physical activity intention*. *Psychology of Sport and Exercise* 10, 52–60
6. Deci, E. L., & Ryan, R. M. (2000). *The “what” and “why” of goal pursuits: human needs and the self-determination of behavior*. *Psychological Inquiry*, 11, 227–268.
7. Ryan, R. M., & Deci, E. L. (2000b). *Self-determination theory and the facilitation of intrinsic motivation, social development and well-being*. *American Psychologist*, 55, 68–78.
8. Ryan, R. M., & Deci, E. L. (2000). *Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being*. *American Psychologist*, 55, 54–56.
9. Chatzisarantis, N. L. D., Hagger, M. S., Biddle, S. J. H., Smith, B., & Wang, J. C. K. (2003). *A meta-analysis of perceived locus of causality in exercise, sport, and physical education contexts*. *Journal of Sport and Exercise Psychology*, 25, 284–306.
10. Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. In E. L. Deci, & R. M. Ryan (Eds.), *Overview of self-determination theory: An organismic dialectical perspective* (pp. 3–33). Rochester, NY: The University of Rochester Press.
11. Black, A. E., & Deci, E. L. (2000). *The effects of instructors’ autonomy support and students’ autonomous motivation on learning organic chemistry: A self-determination theory perspective*. *Science Education*, 84, 740 – 756.
12. Ajzen, I. (1991). *The theory of planned behavior*. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
13. Hagger, M. S., Chatzisarantis, N., Culverhouse, T., & Biddle, S. J. H. (2003). *The processes by which perceived autonomy support in physical education promotes leisure-time physical activity intentions and behaviour: a transcontextual model*. *Journal of Educational Psychology*, 95, 784–795.
14. Standage, M., Duda, J. L., & Ntoumanis, N. (2003). *A model of contextual motivation in physical education: using constructs from self-determination and achievement goal theories to predict physical activity intentions*. *Journal of Educational Psychology*, 95, 97–110.
15. Reeve, J., Nix, G., & Hamm, D. (2003). *Testing models of the experience of self-determination in intrinsic motivation and the conundrum of choice*. *Journal of Educational Psychology*, 95, 375-392.
16. Ntoumanis, N. (2005). *A prospective study of participation in optional school physical education using a self-determination theory framework*. *Journal of Educational Psychology*, 97, 444–453.
17. McAuley, E., Duncan, T., & Tammen, V. V. (1987). *Psychometric properties of the intrinsic motivation Inventory in a competitive sport setting: A confirmatory factor analysis*. *Research Quarterly for Exercise and Sport*, 60, 48-58.
18. Sallis, J. F., & McKenzie, T. L. (1991). *Physical education’s role in public health*. *Research Quarterly for Exercise and Sport*, 62, 124–137.

Article received: 2011-11-26