The Key Psychological Beliefs Underlying Student Participation in Recreational Sport

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The key psychological beliefs underlying student participation in recreational sport

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Abstract

The first year of university study provides an ideal opportunity to target student participation in many health behaviors, such as recreational sport. The study used the Theory of Planned Behavior to identify the key behavioral, normative and control beliefs underlying student participation in recreational sport. A cross-sectional design was used with a four-week follow-up. A purposive sample of 206 participants responded to a theoretically informed questionnaire measuring baseline cognitions. Follow-up behavior was measured using self-report questionnaires. All beliefs correlated with intention and seven beliefs correlated with behavior. Four key beliefs predicted intention ("Enjoyable"; "Time consuming"; "Friends"; and "Family members") and two key beliefs predicted behavior ("Enjoyable" and "Time consuming"). Interventions successfully targeting these specific beliefs may lead to a greater number of students participating in recreational sport.

Keywords: sports participation; Theory of Planned Behavior; intervention targets; motivation

Introduction

The university setting is an ideal opportunity to promote sport given the number of students enrolled in higher education. Research has demonstrated there to be many benefits afforded to those students participating in sport and recreational activities throughout their time in university (Forrester, 2015; Webb & Forrester, 2015). These benefits include greater rates of student learning (Haines, 2001), grade attainment (Huesman, Brown, Lee, Kellogg, & Radcliffe, 2009) and retention (Kampf & Teske, 2013). These activities have also been shown to promote campus community (Elkins, Forrester, & Noël-Elkins, 2011), enhance student life (Byl, 2002), increase social cohesion (Miller, 2011), and help students cope with academic stresses (Iso-Ahola, 1989; Kanters, 2000).

Of particular relevance are first-year students transitioning to university who are adjusting to new environments and taking on greater responsibility for the first time (Arnett, 2000; Goldstein, Xie, Hawkins, & Hughes, 2015). The transition from familiar and controlled environments to those that are more unstable means students face considerable challenges to participate in health-related behaviors and adopt healthy lifestyles (Crozier, Gierc, Locke, & Brawley, 2015). In the absence of parental guidance, first-year students could be tempted to undertake many unhealthy behaviors such as excessive alcohol consumption, high fat food intake, and smoking. For example, it has been shown that rates of binge drinking increase when students begin university (Cameron et al., 2015) and weight gain is greatest during the university transitioning year (Vella-Zarb & Elgar, 2010; Wengreen & Moncur, 2009). Additionally, the university setting is one that promotes sedentary behavior with students spending a considerable time in a seated position using the computer and internet (Buckworth & Nigg, 2004; Fotheringham, Wonnacott, & Owen, 2000). Paradoxically, as first-year students are still developing their behavioral patterns during the transitioning year, this period of instability offers a teachable moment to develop interventions to influence the types of

health behaviors undertaken (Allom, Mullan, Cowie, & Hamilton, 2016; Stewart-Brown et al., 2000). Universities are therefore well placed to target health improvements through sport (Hensley, 2000; Kwan, Bray, & Martin Ginis, 2009; Leslie, Sparling, & Owen, 2001).

The provision of sport within universities can occur in many ways. In the United Kingdom, the most common type of sports provision are formal inter-university competitions. Sharing similarities with the regulated National Collegiate Athletic Association sports offered in the United States, these competitions provide students the opportunity to represent their university whilst competing against other institutions. However, only a limited number of students can participate in this provision of sport (Kanters, Bocarro, Edwards, Casper, & Floyd, 2013) and students may be unwilling to commit a considerable time to participation, particularly as match days can require a full afternoon and these sports have scheduled training requirements (Lower, Turner, & Petersen, 2013). Additionally, there may be cost attached to participation and the social activities associated with these teams may not appeal to all students (Vasold, Deere, & Pivarnik, 2019). To address some of these issues, universities also offer additional intramural and informal sports. These recreational sports are typically undertaken on the university campus and organized by sports instructors employed by the university.

In the United Kingdom, Sport England developed the Youth and Community Strategy (Sport England, 2012) to increase the number of students participating in recreational sport at least once per week for 30 minutes. To achieve this, two large projects were funded. The first project, the Active Universities (2011-2014), funded a total of 41 projects within 49 universities (the same project was used in some cases). Baseline measures of 55 universities (some of whom did not receive funding) showed that 55% of students participated in any form of sport at least once per week for 30 minutes. Following the interventions, results showed a 2% increase in participation across the three years, with 160,018 new students

participating in sport. However, this increase was only demonstrated during the first year (2011-2012), with no increase seen during the remaining two years (2012-2014) (Sport England, 2014). The second project, the University Sport Activation Fund, provided funding to 62 universities. Results showed 54% of students participated in university provided sport during the first year (2014/15) and 55% during the second year (2015/16). Thus, only a 1% increase was observed in the number of students participating in university provided sport.

It is clear that despite providing opportunities to participate in sporting activities, merely offering sport does not translate to actual participation (Hashim, 2012). Given the significant investment into the Sport England projects and the marginal increase in recreational sports participation, there is a clear need for more targeted research to be undertaken into promoting the behavior. The lack of change within the interventions could be attributed to the lack of behavior change theories in their design. Indeed, interventions based on theory have shown greater utility than those lacking a theoretical underpinning (Taylor, Conner, & Lawton, 2012).

The Theory of Planned Behavior

One of the most widely used psychological behavior change theories is the Theory of Planned Behavior (TPB; Ajzen, 1985). As a parsimonious theory, the TPB includes four predictor variables; intention, attitude, subjective norm, and perceived behavioral control. Intention is the proximal determinant of behavior and represents the decision to exert effort to perform the behavior (Ajzen & Fishbein, 1980). Intention is determined by attitude, subjective norm, and perceived behavioral control. Attitude refers to the individual's perceptions toward the behavior, whether that be positive or negative evaluations. Subjective norm concerns the social pressure from significant others and perceived behavioral control refers to the difficultly in undertaking the behavior. These three constructs are underpinned by behavioral, normative, and control beliefs, respectively. Behavioral beliefs are the perceived

consequences of engaging in behavior, and people's evaluation of these consequences (Ajzen & Fishbein, 1980). For example, an individual may believe that participating in recreational sport would provide health benefits and that being healthy is important. Normative beliefs are the perceived expectations of important referents and a person's motivation to comply with the wishes of these important others (Ajzen, 1985). For example, family members may support sports participation and the opinion of family members may matter to the individual. Control beliefs are people's evaluation about the presence of factors that may facilitate or impede performance of the behavior (Ajzen & Madden, 1986). For example, participating in sport could come at a considerable cost or require a significant amount of time.

According to the TPB, behavior is governed specifically by the salient behavioral, normative, and control beliefs (Ajzen, 2002). Such beliefs vary given the behavior of interest. For example, the beliefs underlying a person's participation in sport are likely to differ from the beliefs underlying their participation in physical activity. Similarly, the same person's decision to participate in recreational sport is likely to be governed by different beliefs to that of participating in competitive sport. One of the major strengths of the TPB is its explicit guidance on identifying important psychological processes for intervention development (Fishbein & Ajzen, 2010). More specifically, the authors suggest a belief elicitation study should be undertaken to identify the many salient beliefs underlying the behavior. Following this, a main quantitative study is conducted to identify the specific beliefs governing the behavior. As a consequence of this formative work, a behavioral intervention can be developed to attend to the identified key beliefs.

[Figure 1 near here]

A large number of cross-sectional studies have been conducted assessing the predictive validity of the model (Downs & Hausenblas, 2005). Reviews have found the

constructs to explain between 40%–45% of the variance in intentions (Armitage & Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002; McEachan, Conner, Taylor, & Lawton, 2011) and 25%–36% of the variance in behavior (Armitage & Conner, 2001; Hagger et al., 2002). Though useful, the information gained from predictive studies is insufficient for intervention development because the relevant underlying beliefs are not revealed. For example, if attitude is found to be an influential determinant of intention, information about the relevant underlying beliefs is needed to enable an intervention to specifically manipulate the foundations of attitude. Without this, interventions are based on logic rather than theory. It is therefore crucial that the specific key beliefs are identified.

Given the importance of identifying relevant beliefs and the vast number of studies adopting the TPB, it is surprising that only a relatively small number have identified the key beliefs of their respective behaviors. Nevertheless, the key beliefs underlying health behaviors including food consumption (Spinks & Hamilton, 2015; Vayro & Hamilton, 2016), sun protection (Hamilton et al., 2012), and physical activity (Cowie & Hamilton, 2014; Epton et al., 2015; Rhodes et al., 2014) have been identified. For example, after undertaking an elicitation study, Epton et al. (2015) and Cowie and Hamilton (2014) identified the key beliefs underpinning physical activity in students transferring to university. The key behavioral, normative, and control beliefs identified by Epton et al. (2015) included "health," "stress relief," "family," "friends," "cost" and "facility access." Cowie and Hamilton (2014) found beliefs including "make me fitter," "take up too much time," and "cost" as critical beliefs. These beliefs were then identified as key intervention targets.

Although some beliefs identified within the physical activity literature may share similarities with recreational sport, as previously mentioned, it could be that sports participation is underpinned by distinct beliefs. For example, Kilpatrick, Hebert, and Bartholomew (2005) found affective beliefs, such as enjoyment, related more to sport than

physical activity. Thus, to develop an intervention targeting appropriate modifiable psychological processes pertaining to recreational sport, it is important that the critical beliefs underlying participation in the behavior are identified. As far as the authors are aware, no study has identified the beliefs important for student participation in university recreational sport.

The current study

Given the need to promote student participation in recreational sport (Forrester, 2015) and the utility of using health psychological theory in intervention development (Taylor et al., 2012), the purpose of the study was to identify key intervention targets using TPB guidelines. As no study has identified belief-based targets applicable to university recreational sport, the study follows from a previous elicitation study (Author citation 1) to identify the key beliefs underlying the behavior. This provides important information for the development of an intervention targeting the number of university students participating in recreational sport.

Methods

Participants

The study was conducted at a small sized University in the United Kingdom which has a large number of students from low socio-economic backgrounds (Higher Education Review, 2015). In line with prior suggestions concerning sample size (e.g. Francis et al., 2004), at least 80 participants were required to be recruited. Thus, contact was made with a number of lecturers within different disciplines (e.g. Sport, Media, Psychology) to purposively recruit a diverse sample of first year undergraduate students. These subject areas were also used within the elicitation study, albeit from a different cohort. This sampling strategy resulted in a total of 206 participants (age M = 19.04 years, SD = 2.35, Male n = 88, Female n = 118) providing consent and completing the questionnaire at baseline (T0).

Design and procedure

A cross-sectional design was used with a four-week follow-up. Once a convenient time was arranged with lecturers for data collection, participants were approached at the end of classes and asked to read the information sheet outlining the study purpose. Those agreeing to participate read and signed the informed consent form. A behavioral definition was provided within the questionnaire and stated verbally by the lead author. The lead author also reinforced the definition of 'recreational university sport' and some examples of the recreational sports offered at the university were given (e.g. Give it a go badminton). Questionnaires were conducted in silence and lasted roughly fifteen minutes to complete. Once complete, questionnaires were collected and the lead author reminded participants that they would be asked to respond to the follow-up behavior questionnaire four weeks later at time one (T1). Once the behavioral questionnaire was returned, participants were thanked for their participation and provided a debrief sheet. Pseudo codes were used to match T0 and T1 questionnaires. The study received full ethical approval from the university ethics board.

Measures

At T0, measures were taken of the previously identified salient beliefs and intention. Due to utility and measurement concerns regarding the value component (French & Haskins, 2003; Gagne & Godin, 2000), items measuring beliefs included the expectancy arm only rather than a multiplicative approach. Behavioral beliefs were presented as statements and participants rated how strongly they agreed with each statement (e.g. For me, participating in sport would enable me to meet new friends, Strongly disagree-Strongly agree). Normative beliefs comprised of injunctive and descriptive aspects and participants were again asked whether they agreed with the statements (e.g. My friends think that I should participate in sport at university, Strongly disagree-Strongly agree). To measure control beliefs, participants were asked to identify whether certain factors would influence the likelihood of them carrying out the behavior (e.g. How much would a lack of time make you more or less likely to participate

in sport at university, Less likely-More likely). Intention was measured using three items (e.g. I intend to participate in sport at university, Strongly agree-Strongly disagree, Cronbach's α = .96). The mean of each item representing intention were summed and averaged to give an overall score. All items were assessed using 7-point Likert scales which varied in direction. Participants also provided demographic characteristics of age, gender and program of study.

Four weeks later at T1, behavior was measured using three items. Two items used 7-point Likert scales (e.g. During the past month, how often did you perform sport at university at least once per week, for 30 minutes, Never-Almost always) and one item required participants to identify the number of weeks the behavior was performed (scored 0 weeks – 4 weeks, Cronbach's α = .97). The three items were firstly converted to z-scores and then summed and averaged to provide one overall score for behavior.

Statistical analysis

All data were analyzed using IBM SPSS (version 21.0). Negatively worded items were reversed when required, meaning lower responses represented negative perceptions and higher scores reflected positive perceptions. Key beliefs were identified using guidelines of von Haeften, Fishbein, Kasprzyk, and Montano (2001) and Hornik and Woolf (1999). Data was non-normally distributed and so Spearman's rank-order correlations were used to identify the beliefs significantly correlating with intention and behavior. Those beliefs significantly correlating with intention and behavior were then entered into a multiple linear regression to identify the beliefs independently predicting the outcome variables. von Haeften et al. (2001) suggest intention should be used as the dependent variable for identifying key beliefs. However, the presence of a belief-behavior relationship is fundamental to the development of an intervention targeting beliefs (Rhodes, Courneya, Blanchard, & Plotnikoff, 2007; Sutton, 2002). As such, the study used the beliefs independently predicting both intention and behavior as the key beliefs. Finally, a decision as to whether the belief

could be changed was made as, according to Hornik and Woolf (1999), it must be feasible to alter the belief.

Results

Participant characteristics

206 participants completed T0 questionnaires and 95 participants completed questionnaires at T1 (46.1% completion). This met the sample size suggested by Francis et al. (2004). Table 1 shows the descriptive statistics for the full sample. To check whether there were any differences between those participants completing T1 questionnaires and those not, a MANOVA was conducted with age, intention and the behavioral, normative and control beliefs as the dependent variables and status of participation (completers and non-completers) as the independent variables. There were no significant differences, $F(17, 188) = .72$; Wilks' $\Lambda = .93$, $p > .05$; $\eta p2 = .06$. A chi-square test also revealed no significant differences between status of participation and gender, $\chi^2 (1, N = 206) = .02$, $p > .05$.

[Table 1 near here]

Key belief analysis

Means, standard deviations, and correlations with intention and behavior are shown in Table 2. Significantly correlated beliefs were then entered into a multiple regression. Table 3 shows the key beliefs that independently predicted intention and behavior.

Intention

All beliefs significantly correlated with intention: six behavioral beliefs (r_s (204) = -0.25 to 0.66), five normative beliefs (r_s (204) = 0.25 to 0.58), and four control beliefs (r_s (204) = -0.19 to -0.23). Multiple regression analyses identified two behavioral beliefs (Enjoyable, $\beta = 0.58$, and Time consuming, $\beta = -0.23$) and three normative beliefs (Friends

(injunctive), $\beta = 0.21$, Friends (descriptive), $\beta = 0.17$, and Family (injunctive), $\beta = 0.33$) as key beliefs relating to intention.

Behavior

Two behavioral beliefs ($r_s(93) = -0.26$, and 0.33), and five normative beliefs ($r_s(93) =$ 0.18 to 0.30) significantly correlated with behavior. No control beliefs significantly correlated with behavior. Multiple regression analyses identified both behavioral beliefs (Enjoyable, $\beta =$ 0.28, and Time consuming, $\beta = -0.27$) as key beliefs relating to behavior. None of the significantly correlated normative beliefs predicted behavior. Intention to participate in sport significantly correlated with behavior ($r_s(93) = 0.51$, $p < .001$).

[Table 2 and Table 3 near here]

Discussion

The aim of the study was to identify the key beliefs associated with recreational sports participation using the TPB. The identification of such beliefs should then be used as intervention targets. The study found all behavioral, normative and control beliefs correlated with intention and two behavioral and five normative beliefs correlated with behavior. The multiple regression highlighted two behavioral beliefs and three normative beliefs as independently predicting intention, and two behavioral beliefs independently predicting behavior.

Behavioral beliefs

The correlation between all behavioral beliefs and intention suggests a number of attitudinal factors influence student participation in recreational sport. More significantly, the findings revealed two beliefs predicting intention and behavior. Participation in recreational sport has been found to be underpinned by factors of enjoyment (Cooper et al., 2012; Webb & Forrester, 2015), thus it is not surprising this was a significant behavioral belief. Indeed, these

types of campus recreational activities provide students with a fun experience outside of academic study (Forrester, 2015). The key belief relating to time constraints is also unsurprising given a lack of time has been found to be the most important barrier to participation in recreational activities (Spivey & Hritz, 2013; Young et al., 2003). Indeed, first-year students have the choice of many academic and social activities whilst also making significant life transitions and adapting to new environments (Bray & Born, 2004). Thus, such time constraints have an influence over whether recreational sport is undertaken.

Normative beliefs

The findings identified a number of normative beliefs to be associated with student participation in recreational sport. Beliefs relating to friends, family members, and academic staff all correlated with intention and behavior, thus suggesting these referents influence students' decision participation. The three beliefs found to predict intention offer guidance on the most influential referents. The approval of both friends and family members suggests these referents exert great influence on students' decision to participate in sport. Due to the opportunities recreational sport provides for social groups, particularly amongst those students adjusting to life in their first academic year, the findings suggest students are more likely to participate in sport if friends approve of their participation. With regards to family members, it is clear that these referents still exert influence over students' decisions during the first year of study. Students are still making the transition to university during this period and the opinion of family members can influence rates of participation. Thus, doing what family members and friends would approve of appears to be influential in this decision. Finally, the importance of friends' participation rates was also a key predictor. This suggests student participation in recreational sport is influenced by whether friends themselves participate. That is, students may only participate in this type of sport if they believe friends do also.

Control beliefs

The study found all control beliefs correlated with intention, although none were predictive of intention or behavior. These findings suggest participation in recreational sport is influenced by behavioral and normative factors rather than issues of control. Nevertheless, these beliefs could still be influential in students' decision to participate. For example, with regards to awareness, it is important that students are aware of the recreational sports as an offering (Masmanidis Gargalianos & Kosta, 2009), especially as students making the transition into university are not familiar with their surroundings and are presented with vast amounts of information. Furthermore, the unpredictable nature of first year study and the availability of other activities may lead motivation towards recreational sports participation to fluctuate. Similar to Cowie and Hamilton (2014), it could be that the transition into university leaves students feeling demotivated.

Can these beliefs be changed?

In addition to identifying the key beliefs, it is also important to establish whether there is scope to change the beliefs (i.e. there is no ceiling effect) and whether it is actually possible to change the beliefs (Hornik & Woolf, 1999). As the behavioral belief related to issues of time showed a low mean score (mean = 2.91 out of 7), there is clear room to improve this belief within interventions. However, the mean score concerning the enjoyable nature of recreational sport was above the scale mid-point (mean = 4.67 out of 7) which perhaps suggests students already hold this belief. Despite this, the belief did demonstrate the lowest mean score when compared to the other behavioral belief advantages. This suggests the belief is a fruitful target for intervention as other advantages of recreational sport are perceived more strongly amongst the population. Regarding the normative beliefs, the low mean score of perceptions of friends' rates of participation (mean = 3.27 out of 7) suggests this belief has scope for improvement within an intervention. Moreover, the approval of both friends and

family members demonstrated mean scores around the mid-point, with scores of 4 and 4.25 gained (out of 7), respectively. This suggests that interventions targeting the perceptions of these referents have room to manipulate the key normative beliefs.

Compared to the decision about the scope for change that can be made quantitatively, judging the possibility of changing the beliefs is a decision made subjectively (Hornik & Woolf, 1999). Changing perceptions of the enjoyable nature of recreational sport may prove possible given students in their first year of study would lack previous experience of participating in this type of sport at university. Thus, given students would not necessarily be aware of the positive experiences that could be achieved from participation and would perhaps equate previous experiences of sport with competitive sport, interventions may find it possible to alter this belief. This could be achieved through allowing students to experience participation in the behavior, with positive experiences resulting in the realization that sports participation is enjoyable. Given the many responsibilities students have, particularly in the first year of study, it is evident why a lack of time may be a concern. However, due to the fact students are experiencing new situations, these beliefs (potentially inaccurate) may be modifiable, potentially through time management (McDermott, Oliver, Iverson, & Sharma, 2016) and planning strategies (Gollwitzer, 1999). Finally, students may be unaware of those who participate in recreational sport, especially given the novelty of the behavior. The same reasoning can be given for the approval of family members and friends. That is, since recreational sport is a novel behavior, students may incorrectly perceive these referents to not approve. Thus, interventions providing normative information about the participation and approval of significant referents could effectively attend to the identified normative beliefs. This could be achieved by having friends demonstrate the behavior or by drawing attention to the behavior of others to allow comparison with their own behavior.

Strengths and limitations

There are a number of strengths attached to the study. The main strength of the studies was the adoption of a relevant theoretical framework to identify specific belief-based intervention targets. The majority of studies using the TPB to develop behavioral interventions fail to undertake the relevant formative research and thus may not necessarily target appropriate beliefs. This work is vital for the development of behavior change interventions. Second, the behavior of interest was one that, despite its many benefits, has received little theoretical attention. Third, the studies targeted a subgroup of the student population that despite often undertaking unhealthy behaviors, are amendable to change. Indeed, students transitioning to university are in the process of developing behavioral habits and interventions intervening during this period can thus have significant health benefits.

Despite these strengths, the study is not without limitations. First, the study used an initial small sample size, with attrition at T1 (53.9%) resulting in an even smaller number of participants eligible for full analysis. Nevertheless, the study achieved the suggested minimum sample size (Francis et al., 2004) and there were no significant differences between those completers and non-completers at T1 regarding key psychological measures. Second, the study used a cross-sectional design meaning casual statements cannot be made (Weinstein & Rothman, 2005). Experimental work is needed to provide this evidence. Third, the study used self-report to assess behavior and discrepancies between self-report and objective measures have been found (Basterfield et al., 2008). Future research should seek to utilize more objective measures of behavior such as registers or swipe cards. Fourth, study findings may not be generalizable to other institutions, particularly as beliefs were obtained from a specific sample of interest. Finally, the study only considered the expectancy arm of beliefs, rather than both expectancy and value components. Although the multiplicative approach and expectancies often show no significant difference (Chan et al., 2015), there is the possibility that the value component within some beliefs did not align with the expectancy component.

For example, students may be unaware that family members approve of their participation in recreational sports, yet simply do not value their opinion.

Conclusion

The study identified the key behavioral, normative, and control beliefs associated with student's participation in recreational sport. Interventions developed to promote participation in recreational sport should specifically target the beliefs relating to the enjoyable nature of sport, the approval of friends and family members, the participation of friends, and time constraints. Successfully manipulating these beliefs could lead to an increase in the number of students participating in recreational sport at university.

Declaration of interest

The authors declare no conflict of interest

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Table 1. *Descriptive statistics of study participants*.

Demographic		(*N* = 206)	Percentage (%)	M	±s
Age (years)				19.04	2.35
Sex	Male	88	42.7		
	Female	118	57.3		
Area of study	Business	30			
	Childhood Studies	37			
	Film and Television Production	25			
	Media	22			
	Philosophy, Ethics and Religion	12			
	Physical Education and Sports Coaching	31			
	Psychology	30			
	Sport, Exercise, Health and Nutrition	19			

Table 2. *Means, SD, and correlations of behavioral, normative, and control beliefs related to university students' sporting participation*.

Beliefs	Mean ±s Total (*N* = 206)	Intention (r_s) Total (*N* = 206)	Behavior (r_s) Total (*n* = 95)
Behavioral beliefs			
Health and fitness	5.46 (1.43)	0.35***	0.11
Enjoyable	4.67 (1.58)	0.66***	0.33**
Opportunities to meet new friends	5.26 (1.41)	0.40***	0.05
Improves mental well-being	4.72 (1.57)	0.45***	0.20
Time consuming	2.91 (1.49)	-0.28***	-0.26**
Study distractions	3.71 (1.55)	-0.25***	-0.13
Normative beliefs			
Friends (injunctive)	4.00 (1.74)	0.58***	0.27**
Family (injunctive)	4.25 (1.89)	0.58***	0.30**
Academic staff (injunctive)	3.60 (1.85)	0.40***	0.20*
Friends (descriptive)	3.27 (1.85)	0.42***	0.18*
Academic staff (descriptive)	3.12 (1.56)	0.25***	0.18*
Control beliefs			
Time restrictions	3.14 (1.76)	-0.21**	-0.00
Lack of motivation	3.15 (1.49)	-0.23**	-0.10
Study related	3.25 (1.83)	-0.19**	-0.01
Awareness	3.32 (1.81)	-0.23**	-0.14

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 3. *Summary of the multiple regression analyses*.

	Key beliefs	β	R^2	Adjusted R^2
Intention	Behavioral beliefs		0.49	0.47
(*N* = 206)	Health and fitness	0.04		
	Enjoyable	0.58***		
	Opportunities to meet new friends	-0.09		
	Improves mental well-being	0.11		
	Time consuming	-0.23***		
	Attention taken away from studies	-0.06		
	Normative beliefs		0.41	0.39
	Friends (injunctive)	0.21*		
	Family (injunctive)	0.33***		
	Academic staff (injunctive)	0.07		
	Friends (descriptive)	0.17*		
	Academic staff (descriptive)	-0.05		
	Control beliefs		0.07	0.05
	Time restrictions	-0.07		
	Lack of motivation	-0.14		
	Study related	-0.05		
	Awareness	-0.16		
Behavior	Behavioral beliefs		0.16	0.14
(*n* = 95)	Enjoyable	0.28**		
	Time consuming	-0.27**		
	Normative beliefs		0.14	0.09
	Friends (injunctive)	-0.00		
	Family (injunctive)	0.26		
	Academic staff (injunctive)	0.04		
	Friends (descriptive)	0.03		
	Academic staff (descriptive)	0.16		

Note. *$p < .05$, **$p < .01$, ***$p < .001$

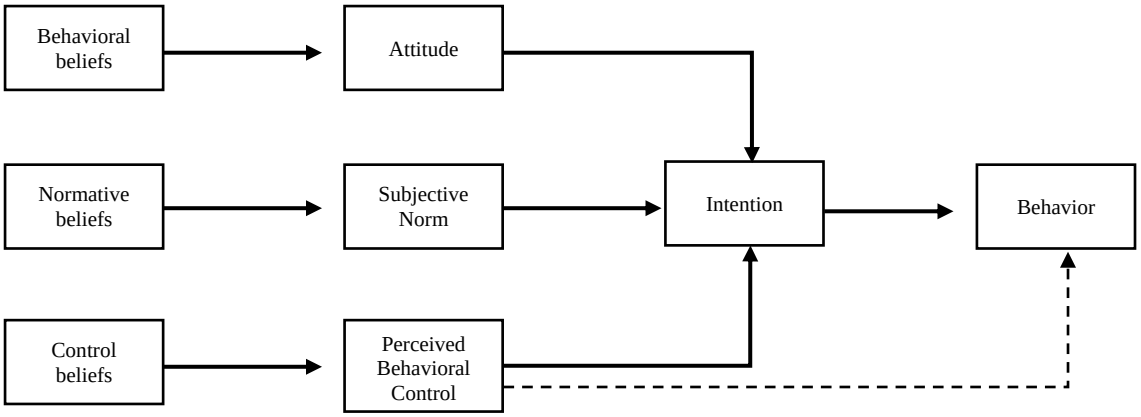

Figure 1. The Theory of Planned Behaviors (Ajzen, 1985).