



Barriers to the Practice of Sport and Physical Activity from the Perspective of Self-Determination Theory

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Abstract: The practice of sport and physical activity can be hampered by the presence of amotivation, the frustration of basic psychological needs, and barriers to carrying out that practice. Based on the principles of self-determination theory (SDT), the objective of this study was to analyze the relationship of these variables and assess differences based on age, sex, residential independence, academic/employment situation, and prior sport and physical activity. The sample comprised 102 individuals, aged between 18 and 25 (M = 21.61; SD = 2.04), who completed the Behavioral Regulation in Exercise Questionnaire, the Frustration of Psychological Needs in Physical Exercise Scale, and the Self-Perceived Barriers of Physical Activity Questionnaire. Our results showed that participants had high values of controlled motivation, the frustration of the basic psychological need for competence, and high values for the barrier of obligations/lack of time. We found a significant and positive association between the frustration of the basic psychological need for competence and the barriers present in the practice of physical activity. Moreover, we found that women reported experiencing body image/anxiety as a barrier to practicing sport and physical activity more than men and individuals aged 22-25 years experiencing obligations/lack of time as a barrier more than the those aged 18 to 21 years. Practical applications were proposed to avoid the frustration of basic psychological needs, increase the most self-determined forms of motivation, and reduce barriers to the practice of sport and physical activity.

Keywords: self-determined motivation; frustrated basic psychological needs; barriers to practice; sport and physical activity

1. Introduction

The practice of sport and physical activity (SPA) is central to looking after one's health. University students are now acknowledged as an important population for study in research on SPA because the university period is considered a key period for the maintenance of SPA [1].

Self-determination theory (SDT) [2,3] is an established psychological theory for explaining human motivation and can, therefore, be applied to understanding people's motivation to practice SPA. This theory describes the degree to which people perform actions at a high level of reflection and engage in actions with a sense of agency.

SDT posits that motivation can be conceptualized as a continuum of distinct types of motivation (internal motivation, external motivation, and amotivation) and their associated regulatory styles. These styles, ordered from most to least self-determined, are intrinsic regulation (internal motivation); integrated regulation, identified regulation, introjected regulation, and external regulation (external motivation), and non-regulation (amotivation).



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Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). According to Deci and Ryan [4], human behavior is motivated by three basic and universal psychological needs. The need for autonomy reflects a desire to engage in activities of one's choosing, and thus concerns the origin of behavior. The need for competence corresponds to an individual's desire to interact effectively with their environment and to feel capable of producing desired outcomes and avoiding undesirable ones. Finally, the need for relatedness reflects the desire to relate to and care for others, to feel that others have an authentic relationship with themselves, and to experience a sense of satisfaction with the social world. All three needs are innate and universal, and their satisfaction is essential to health and wellbeing [2,5].

Several studies have demonstrated a positive association between the practice of SPA and the more self-determined forms of motivation [2,3,6]. Moreover, the literature typically suggests that self-determined motivation is crucial in predicting physical–sporting persistence [7]. As such, motivation-related variables are highly relevant in the study of human behaviors within SPA [8].

According to SDT, students who feel incompetent are less likely to enjoy SPA and, therefore, are less likely to show low persistence [9,10]. Aligning with this, studies have shown that perceptions that the three basic psychological needs (BPN) are satisfied result in more self-determined motivation and associated positive outcomes such as high levels of enjoyment, persistence in activity, low levels of dropout, less boredom, etc. [11].

It is important to note that need satisfaction must be differentiated from need frustration, the latter referring to negative feelings experienced by the individual when he or she feels that their BPN are being actively limited by the actions of significant others [12]. More specifically, the frustration of BPN reflects more than simply the absence of need satisfaction, instead capturing the perception that BPN are being thwarted by negative psychological experiences. The present study focuses on frustrated basic psychological needs (FBPN) rather than satisfied needs.

Barriers to SPA are defined as situations that provide an excuse for not practicing SPA. As such, barriers to SPA and motives to practice are two constructs to evaluate the relationship with the continuum of self-determined motivation, instead, as a different way to evaluate the motivational profile of an individual related to SPA [13].

In terms of the link between motivation and barriers to practice, research has shown that there is a significant association between the level of self-determination and intention to practice SPA [14]. It follows that those students who do not meet the minimum requirements of SPA are likely to perceive more barriers to practice, and indeed, this has been confirmed empirically [15]. For example, students not meeting the minimum requirements of SPA have been shown to differ from those who do meet the minimum requirements in terms of fatigue and laziness [16].

Research grounded in SDT has indicated that higher levels of self-determined motivation reduce the probability that individuals use the arguments for avoiding practice implicit in the different types of barriers because the satisfaction and pleasure inherent in practice serve to reduce such barriers [17]. Consequently, we hypothesized that the BPN of competence will predict perceptions of barriers to practicing SPA.

In short, the study objectives were (1) to assess the associations among the types of self-determined motivation, frustrated basic psychological needs (FBPN), and the barriers to PSA and (2) to test how the types of self-determined motivation, FBPN, and barriers to PSA differ according to age, gender (male vs. female), residential independence (living with parents or not), academic/employment status (studying vs. in employment), and prior PSA.

2. Materials and Methods

2.1. Study Design

The present study has an empirical quantitative design and employs descriptive and correlational analyses of data obtained in surveys. An intentional sampling method was used [18].

2.2. Participants

The sample comprised 102 individuals, of which 52 were men and 50 were women, aged between 18 and 25 years (M = 21.61, SD = 2.04), who resided in the city of Badajoz (Extremadura, Spain).

To be included in the study, individuals had to be aged between 18 and 25 and to have reported performing SPA less than three days per week (N = 56, 27 men and 29 women). Those who reported performing SPA more than two days a week and with a minimum total of 150 min per week (N = 46) were excluded from the study sample because they were considered physically active.

In terms of academic/employment status, 59.64% of participants were university students, 31.57% were part-time students, and 8.79% were in employment. A total of 42.10% of participants lived with their parents while 57.90% did not.

2.3. Variables and Instruments

Study variables and their associated measures are outlined below:

2.3.1. Motivational Regulation

To assess motivation to practice physical–sporting activity, we used a version of the Behavioral Regulation in Exercise Questionnaire (BREQ-3) [19] validated for the Spanish context by [20]. This scale, headed by the phrase "I exercise because ... ", is composed of 23 items, grouped in six factors, that measure intrinsic motivation ("because it's fun and satisfying to exercise"), integrated regulation ("because it is consistent with my life goals"), identified regulation ("because I think it's important to make the effort to exercise regularly"), introjected regulation ("because I feel a failure when I haven't exercised in a while"), external regulation ("because I feel under pressure from friends/family to exercise"), and amotivation ("I think exercise is a waste of time"). All factors have four items, apart from identified regulation, which has three items. This study was based on the motivation continuum from autonomous motivation (introjected motivation and external regulation), controlled motivation (introjected motivation and external regulation), and amotivation [21]. The response format was a Likert scale from 1 to 5, with 1 corresponding to 'totally disagree' and 5 corresponding to 'totally agree'.

2.3.2. Basic Psychological Needs

We applied the Frustration of Psychological Needs in Physical Exercise Scale [22,23] to evaluate subjects' satisfaction of the BPN for autonomy, competence, and relatedness when practicing SPA. The scale is preceded by the phrase "In my physical exercise ... ", and comprised of 12 items, with 4 items per each of the three subscales: (a) frustration of the BPN for autonomy ("I feel compelled or obliged to follow the decisions of others"); (b) frustration of the BPN for competence ("There are situations in which I feel incapable"); and (c) frustration of the BPN for relatedness ("I feel that other people don't like me"). For each item, participants indicate their response on a 7-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree). Higher scores indicate a higher level of BPN frustration.

2.3.3. Barriers to Practicing SPA

We measured barriers to practicing physical exercise using the 20-item Self-Perceived Barriers of Physical Activity (SPBPA) questionnaire [24] adapted by [13]. Items, preceded by the phrase "I do not exercise because ... ", capture four dimensions: body image/psychosocial anxiety (five items, e.g., "I feel uncomfortable with how I look in sportswear"), fatigue/laziness (five items, e.g., "I am too lazy to exercise"), obligations/lack of time (five items, e.g., "I have to study a lot"), and environment/facilities (five items, e.g., "The state of the exercise facilities is inadequate"). For each item, participants indicate their response on a Likert scale ranging from 0 to 10, with 0 corresponding to 'totally disagree' and 10 corresponding to 'totally agree'.

2.4. Procedure

A Google Docs form was made to collect participants' questionnaire responses. The average completion time of the form was approximately 15 min.

2.5. Data Analysis

First, we calculated descriptive statistics (means and standard deviations) and performed a reliability analysis to evaluate the internal consistency of the items making up the study measures (Cronbach alpha). Next, we carried out the Kolmogorov–Smirnov test to evaluate whether the study variables were normally distributed, and this suggested a non-normal distribution (p-Value < 0.05).

Because the data did not follow a normal or homogeneous distribution, we used Spearman's correlations to determine the associations among variables and used the non-parametric Mann–Whitney U test to assess differences in the different variables as a function of gender, residential independence, and prior SPA. We also used the nonparametric Kruskal–Wallis test to assess how the variables differ as a function of age and academic/employment status, giving specific attention to the variables revealing statistical differences.

All statistical analyses were performed using the statistical program SPSS v.25.

3. Results

3.1. Reliability Analysis and Descriptive Statistics

The reliability analysis (Table 1) showed that most factors had a Cronbach alpha value equal to or greater than 0.70 [25], confirming their reliability. It was noteworthy that it was necessary to delete some items from the amotivation factor to achieve a level of reliability deemed marginally acceptable given the small number of items [26]. The relatedness (FBPN) and the environment/facilities (SPBPA) factors were excluded from the study for having unacceptable internal consistency reliability.

Table 1. Descriptive statistics and reliability analysis.

Variables	Range	Mean	Standard Deviation	Cronbach Alpha
BREQ-3				
Autonomous Motivation	1–5	2.87	0.85	0.889
Controlled Motivation	1–5	3.94	0.74	0.814
Amotivation	1–5	1.40	0.48	0.633
FBPN				
FBPN Autonomy	1–7	4.60	0.91	0.723
FBPN Competence	1–7	5.35	1.04	0.757
FBPN Relatedness	1–7	5.32	1.11	0.371
SPBPA				
B. Body Image/Anxiety	0-10	4.65	2.65	0.958
B. Fatigue/Laziness	0-10	4.74	0.97	0.754
B. Obligations/Lack of time	0-10	7.59	0.84	0.769
B. Environment/Facilities	0–10	9.46	1.82	0.511

Note. FBPN = frustration of basic psychological need; B = Barrier.

3.2. Correlational Analysis

The output of the correlational analysis is presented in Table 2.

Variables	1	2	3	4	5	6	7	8
1.Autonomous Motivation	_							
2.Controlled Motivation	0.317 *	-						
3.Amotivation	-0.296 *	-0.202	_					
4.FBPN Autonomy	0.310	0.420 **	-0.309 *	_				
5.FBPN Competence	0.461 **	0.453 **	-0.183	0.627 **	_			
6.B. Body Image/Anxiety	0.199	0.311 *	0.161	0.125	0.335 *	_		
7.B. Fatigue/Laziness	0.339 *	0.425 **	0.147	0.348 **	0.419 **	0.414 **	_	
8.B. Obligations/Lack of time	0.265 *	0.314 *	-0.145	0.260	0.326 *	0.046	0.147	-

Table 2. Spearman Correlations.

Note. * p < 0.05; ** p < 0.001; FBPN = frustration of basic psychological need; B. = Barrier.

3.3. Mean Differences as a Function of Gender

Significant differences were observed for the body image/anxiety barrier variable, with women reporting higher values than men (Table 3). No other statistically significant differences between men and women were identified.

Table 3. Mean differences as a function of gender.

Mean Score								
Variables	Men	Women	р	Ζ	и			
BREQ-3								
Autonomous Motivation	26.46	30.40	0.365	-0.906	336.500			
Controlled Motivation	25.63	31.17	0.195	-0.129	314.000			
Amotivation	27.35	29.57	0.593	-0.534	360.500			
FBPN								
FBPN Autonomy	27.06	29.84	0.514	-0.652	352.500			
FBPN Competence	26.46	29.57	0.360	-0.914	336.500			
SPBPA								
B. Body Image/Anxiety	17.07	39.14	0.000 *	-5.074	83.000			
B. Fatigue/Laziness	26.11	30.72	0.284	-1.071	327.000			
B. Obligations/Lack of time	25.56	31.52	0.147	-0.144	304.000			

Note. * p < 0.05; M = Mean; FBPN = frustration of basic psychological need; B. = Barrier; p = two-tailed significance; U = Mann–Whitney U coefficient.

3.4. Mean Differences as a Function of Residential Independence

None of the study variables presented significant differences as a function of residential independence (Table 4).

Table 4. Mean differences as a function of residential independence.

Mean Score							
Variables	Not Independent	Independent	p	Ζ	и		
BREQ-3							
Autonomous Motivation	26.15	30.27	0.348	0.939	327.500		
Controlled Motivation	26.13	30.28	0.336	-0.962	327.000		
Amotivation	27.65	29.14	0.721	-0.357	363.500		
FBPN							
FBPN Autonomy	27.25	29.44	0.612	-0.507	354.000		
FBPN Competence	26.88	29.72	0.513	-0.655	345.000		
SPBPA							
B. Body Image/Anxiety	25.27	30.92	0.198	-1.287	306.500		
B. Fatigue/Laziness	26.48	30.02	0.416	-0.813	335.500		
B. Obligations/Lack of time	24.15	31.77	0.081	-1.747	279.500		

Note. p < 0.05; M = Mean; FBPN = frustration of basic psychological need; B. = Barrier; U = Mann–Whitney U coefficient.

3.5. Mean Differences as a Function of Performing Prior SPA

None of the study variables presented significant differences as a function of prior sport and physical activity (Table 5).

Mean Score							
Variables	Prior SPA	No Prior SPA	p	Z	и		
BREQ-3							
Autonomous Motivation	28.12	30.05	0.725	-0.352	230.500		
Controlled Motivation	29.64	23.82	0.279	-1.082	196.000		
Amotivation	29.86	22.95	0.186	-1.323	186.500		
FBPN							
FBPN Autonomy	29.32	25.14	0.436	-0.778	210.500		
FBPN Competence	27.76	31.55	0.484	-0.701	214.000		
SPBPA							
B. Body Image/Anxiety	28.19	29.77	0.772	-0.290	233.500		
B. Fatigue/Laziness	28.47	28.64	0.975	-0.031	246.000		
B. Obligations/Lack of time	27.93	30.82	0.595	-0.531	222.000		

Table 5. Mean differences as a function of prior sport and physical activity.

Note. p < 0.05; M = Mean; FBPN = frustration of basic psychological need; B. = Barrier; U = Mann–Whitney U coefficient.

3.6. Mean Differences as a Function of Age

Table 6 shows that 22–25-year-olds had significantly higher scores for the obligations/lack of time barrier dimension than 18–21-year-olds.

Table 6. Mean differences as a function of age.

	Mean Score					
Variables	M (18–21)	р	Н	M (22–25)	р	Н
BREQ-3						
Autonomous Motivation	15.49	0.577	1.980	13.61	0.636	1.705
Controlled Motivation	13.50	0.336	3.384	15.50	0.743	1.244
Amotivation	13.50	0.473	2.515	15.80	0.865	0.736
FBPN						
FBPN Autonomy	13.50	0.720	1.337	15.41	0.968	0.256
FBPN Competence	13.49	0.728	1.307	15.49	0.682	1.501
SPBPA						
B. Body Image/Anxiety	13.50	0.415	2.853	16.46	0.145	5.391
B. Fatigue/Laziness	13.50	0.142	5.438	15.49	0.783	1.076
B. Obligations/Lack of time	13.50	0.218	4.435	15.50	0.031 *	8.882

Note. * p < 0.05; M = Mean; FBPN = frustration of basic psychological need; B. = Barrier; H = Kruskal–Wallis coefficient.

3.7. Mean Differences as a Function of Academic/Employment Status

None of the study variables presented significant differences as a function of academic/employment status (Table 7).

Mean Score							
Variables	Variables Studying & Studying & Working		p	Н			
BREQ-3							
Autonomous Motivation	31.10	23.03	0.087	217.500			
Controlled Motivation	29.93	27.08	0.550	275.500			
Amotivation	26.68	30.28	0.430	267.000			
FBPN							
FBPN Autonomy	28.88	30.00	0.775	291.500			
FBPN Competence	29.03	28.83	0.961	303.500			
SPBPA							
B. Body Image/Anxiety	28.32	29.22	0.855	296.500			
B. Fatigue/Laziness	28.93	28.78	0.969	304.000			
B. Obligations/Lack of time	25.51	34.81	0.125	4.158			

Table 7. Mean differences as a function of academic/employment status.

Note. p < 0.05; M = Mean; FBPN = frustration of basic psychological need; B. = Barrier; H = Kruskal–Wallis coefficient.

4. Discussion

The university students who made up much of the study sample represent a particular set of individuals experiencing a difficult period for maintaining the practice of sport and physical activity (SPA). Thus, this study is of vital importance for informing intervention strategies designed to help individuals continue or resume practicing SPA.

Concerning our first study objective, we found that the associations observed between variables were consistent with the predictions of SDT. Specifically, they align with the idea that BPN are associated with the types of motivation that regulate behavior. Specifically, individuals with higher perceived satisfaction of BPN are more likely to have more self-determined forms of motivation [27–29] and to experience fewer barriers to practice [14,17].

Oppositely, individuals who do not perceive that their BPN are satisfied may experience basic need frustration; that is, a negative state in which they feel that their BPN are being restricted [12]. According to theoretical proposals of SDT, individuals experiencing BPN frustration are more likely to have less self-determined forms of motivation, which is likely to have negative consequences for sports practice [30].

Intervention programs need to be designed to help young people overcome the many barriers to practicing SPA. To this end, it is vitally important that parents and teachers avoid frustrating young peoples' basic psychological needs to make it easier for them to adopt the most self-determined forms of motivation possible. In real-world contexts, teachers who guide practice should encourage the most self-determined forms of motivation, for example, by giving their students the possibility of choosing activities, clearly explaining the purpose of tasks, and fostering the social relationship between the participants.

Concerning our second objective, our results revealed that women experienced the body image/anxiety barrier to practice significantly more than men and that older individuals (22–25 years) experienced the obligations/lack of time barrier significantly more than younger individuals.

Regarding the type of motivation as measured by the BREQ-3 questionnaire, we found that women reported more autonomous motivation, controlled motivation, and amotivation than men, with the largest difference observed for controlled motivation. These results align with those of a systematic review [31] that concluded that women tend to rely on intrinsic motivation to practice SPA, although also contrast with some previous findings [32].

There were also gender differences in terms of frustrated BPN. Specifically, we found more frustrated autonomy and competency in women than in men. Finally, we found the strongest barrier to SPA for women was the body image/anxiety barrier and, indeed, that this barrier was significantly stronger in women than men. This finding differs somewhat from the results of [33] that lack of time was the most common barrier for both men

and women. We also found that women experienced the barriers of obligations/lack of time and fatigue/laziness more than men. In short, it appears that women generally experience more barriers to practicing SPA than men across different typologies, although we acknowledge that only the body image/anxiety barrier was significantly different in this study. Nonetheless, this finding is consistent with past studies, such as that of [34], that found that women had more barriers to practicing SPA than men.

Another finding of the study was that type of motivation differed as a function of residential independence: participants living with their parents rather than independently reported the highest levels of amotivation. Prior research has shown that higher perceptions of parental support are linked to lower levels of amotivation in children [35]. Several studies have suggested that parents are responsible for modeling behaviors such as interest in SPA in children, implying that parents are key enablers for the practice of SPA [36,37]. However, the present study showed that participants living with their parents had lower levels of autonomous and controlled motivation. One possibility is that the parents of these dependent participants had a controlling profile that adversely influenced the practice of SPA, although this was not measured in the present study. In terms of psychological needs, we found that participants living apart from their parents reported greater frustration of autonomy and competence. According to [35], parents are a strong source of support for children's BPN. Our results suggest that subjects not living with their parents may be losing out on this source of support and, consequently, more likely to have frustrated needs. Finally, we found that participants not living with their parents reported more barriers to SPA than those living with their parents. This aligns with the proposal that change of habitual residence is linked to lifestyle changes that negatively influence the practice of SPA. This may explain why this group of participants reported more barriers to practicing SPA.

Our results showed that younger participants (18–21 years) had more autonomous motivation than older participants (22–25 years). Consistent with this, we also found that the older participants reported that their BPN for autonomy and competence were more frustrated than the younger participants. Finally, we showed that the older participants reported experiencing more barriers to practicing SPA, regardless of their type. Past research on differences in SPA as a function of age in university students has had contrasting findings. For example, while some research has suggested that practice of SPA declines in the early years of university [38], others have identified higher levels of practice in the later years [39].

Finally, our results showed that participants who were full-time students had greater autonomous and controlled motivation than those who studied and worked. In turn, participants who were studying and working at the same time reported more amotivation. In terms of need frustration, we found that participants who study and work had higher frustration of autonomy, while those who only study reported the highest levels of frustrated competence. We also found that subjects who were studying and working reported experiencing obligations/lack of time and body image/anxiety as barriers to practicing SPA more than those who were only studying. This is consistent with results showing the university phase is a difficult period to practice SPA [1] and implies that such practice becomes even more challenging when individuals also work. Indeed, we showed that such participants had more amotivation and more frustrated autonomy and reported more barriers to practicing SPA. Our findings align with those of [40], which showed the transition to working life leads to lifestyle changes that negatively influence the practice of SPA.

To promote the continuation of re-uptake of sport and physical activity, it is necessary that it (a) is a pleasant and positive experience, (b) offers a wide variety of activities that serve different interests and skill levels, (c) provides positive feedback and support for practice, (d) attends to the process rather than the outcome, (e) recognizes the individual progress of each person, and (f) sets realistic and achievable goals [41]. Among the limitations of this study, it should be noted that the cross-sectional design precludes an inference about causal relationships. Further, we did not consider important variables such as the influence of parents or physical education (PE) teachers, which may be necessary to extrapolate conclusions that are more relevant to the real-world practice of SPA. Another limitation of the study is the small sample size, which may mean the sample is unrepresentative of the target population. This small sample may be responsible for the low reliability observed for some of the subscales. We note that the small sample was a result of the inclusion criteria of individuals who did not perform SPA and who were aged between 18 and 25 years.

Based on these limitations, we advise that future research should include adopting longitudinal and experimental designs, acknowledging variables capturing the influence of the social environment, to test motivational interventions to evaluate their effect on participants' perceptions. Additionally, we suggest that future studies should employ larger samples to ensure their representativeness of the Spanish population.

In summary, we conclude that there were significant positive associations between the frustration of competence and barriers to practicing sport and physical exercise. Specifically, women experienced the body image/anxiety barrier to practice significantly more than men. Moreover, older individuals (22–25 years) experienced the obligation/lack of time barrier significantly more than younger individuals (18–21 years).

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