

Article

Motivation for Physical Activity in University Students and Its Relation with Gender, Amount of Activities, and Sport Satisfaction

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Abstract: Background: Motivation can be considered a critical factor in encouraging and maintaining physical activity. Despite the many health benefits offered by physical activity, a significant percentage of university students do not meet recommendations. University years are a critical time for promoting and maintaining an active lifestyle. This study aimed to analyze motivations for engaging in physical activity among university students and their relationship with gender, amount of sports activity, and satisfaction with sports activity. Methods: The sample consisted of 1099 Vizcaya university students (45.3% men and 54.7% women), aged between 18 and 29 years old ($M = 20.4$; $SD = 1.7$ years). Sports motivation, the number of weekly hours of physical activity, and the level of satisfaction with sports were analyzed. (3) Results: Significant differences were found in intrinsic ($d = 0.36$, $p = 0.000$) and external regulation ($d = 0.19$, $p = 0.002$), men having a higher motivation level compared to women in these dimensions, but not in participants' level of satisfaction. The effect of gender on the amount of physical activity was mainly direct, but motivation was significantly mediating. In addition, there was not a significant effect of gender on level of satisfaction, but analyzing its limited effect in the sample, the mediation of intrinsic regulation was significant. (4) Conclusions: To understand the variance of the amount of physical activity and satisfaction in university students, the direct effect of gender must be considered as well as the mediating role of some dimensions of motivation.



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Keywords: motivation; university students; satisfaction; physical activity; sedentary lifestyle

1. Introduction

It is widely recognized that physical activity is vitally important in young people's development and in maintaining a healthy lifestyle [1]. Currently, there is solid evidence that demonstrates the many benefits associated with participating in sports or physical activity on a regular basis at a physical, psychological, aesthetic, and social level [2–5]. Regular exercise has been confirmed to counteract fragility and sarcopenia; reduce the risk of many chronic diseases; reduce the incidence of depression and dementia; and improve general well-being [6–12]. Social concern for supporting routine exercise places a strong emphasis on youth sports participation [13,14] because sedentary lifestyles during childhood and youth are more likely to result in medical and psychosocial problems for adults and seniors. A lack of physical activity increases the chances of developing cardiovascular disease, hypertension, type II diabetes, colon cancer, breast cancer, and osteoporosis [15]. Different studies show that dropping out of organized sports is associated with a 10–20% increased risk of being diagnosed with a psychiatric disorder within three years [16]. For example, when compared to non-athletes, student athletes report better mental health, self-esteem, clarity of self-concept, emotional regulation, psychological endurance, and well-being [17].

Given its significance, the World Health Organization (WHO) offers guidelines for adolescents to achieve these benefits. The WHO recommends that adolescents engage in 60 min or more of moderate-to-vigorous physical activity every day and at least 150 min every week for adults [18]. Physical activity is a strong protective factor for all of the previously noted disorders [19]. This can be defined as any type of muscular activity that substantially increases energy consumption [20]. Currently, physical activity shows greater levels of complexity and forms of organization, with new activity and physical-sports trends becoming increasingly varied [21–23]. Given the certainty of the benefits of sports, it is crucial to identify the different factors that can contribute to people quitting this routine, such as a lack of intrinsic motivation, concern for perceived physical appearance, social anxiety while exercising, or a lack of enjoyment [24–27]. A recent meta-analysis determined that this progressive decline in physical activity at moderate-to-vigorous levels of intensity occurs even before adolescence, beginning between early and middle childhood [28].

The previously described positive effects lead to promotional actions in populations with the greatest impact (minors, adolescents, and older adults), and groups that are in institutionalized environments are of special interest [29]. Within these groups, the university population is considered vulnerable, owing to the ease of withdrawing from the habits acquired that are related to physical activity [30]. This can be due, among other factors, to the lack of opportunities to practice physical activity in university spaces because of the limited provision of spaces and programs, which is needed to promote the creation and implementation of intervention programs focused on improving the adherence to the practice of physical activity by university students [31,32]. This need is increased in the case of Spanish universities where there are hardly any specific physical activity programs [33], unlike other European countries (e.g., “Starting Active, Staying Active”). This is also the time when individuals will take on other behaviors that will significantly affect their adulthood [34]. We can define this stage as the last period of adolescence [35], in which all the physical changes have occurred, but important maturity-related, socio-affective, and cultural changes that are typical in the adult stage have yet to be established [36,37]. Similarly, individuals gain requirements to enter the labor market, making it a stressful adaptation period. As a result of all these changes, during the university stage, there is an increase in individuals withdrawing from active lifestyle practices [38,39] and a decrease in their engagement in physical activity [40]. Those affected report a lack of time among the most common factors. The reduction of physical activity indices appears to vary unevenly by gender, as this decline is reflected more among women [41]. Apart from the reduction due to lack of time, reflected in both genders, in the case of women, other aspects are identified as the main reasons for physical inactivity, such as physical social anxiety linked to body image, fatigue or laziness, or the environment and lack of facilities [39]. Owing to the above, this group is a target population for further research.

Motivation is critical among the psychological variables that determine the adoption and maintenance of physical activity. A clear understanding of motivation can help us understand the decision to be active and maintain this practice, or provide perspective on reducing or withdrawing from engagement [42]. We understand motivation as the psychological processes that cause the arousal, direction, and persistence of behavior [43].

Why does a person start participating in sports? Which reasons cause them to maintain this practice or even increase their engagement? Physical activity has to satisfy a wide variety of needs. People have specific interests, and each person becomes involved in this activity for considerably specific and different reasons [44]. The reasons university students exercise do not differ substantially compared to the general population [45]. The literature [46,47] indicates reasons related to group involvement, friendship, and pleasant activities as the most common and consistent, along with reasons related to competition, gaining skills, adventure, and fitness associated with body image [48–51]. The reasons vary based on personal interests and differentiating population groups with different purposes, and they are relative to the characteristics of the individuals in particular age ranges, keeping the influence of environmental factors in mind [22,52]. Thus, it is important to

analyze the differences within age groups, as age is a differentiating element in studying why people engage in physical activity [53]. In addition, the scientific literature has shown that motivations for engaging in physical activity differ between men and women [54].

Since the 1980s, psychological self-determination theory (SDT) [55,56] has been the most significant theoretical approach to try and explain motivation in aspects such as health [57], work [58], and physical activity [59]. In terms of physical activity, the theory is based on the quality of the motivation influencing whether the individual will participate in and maintain physical activity and health [56].

The objective of this study is to analyze the motivations for engaging in physical activity among university students using a short version of the Spanish version of the Behavioral Regulation in Exercise Questionnaire (BREQ-2) [60] to study their relationship with gender, the volume of sports activity, and level of satisfaction. The study will also examine the mediating role of motivation in the effect of gender on the level of physical activity and satisfaction.

2. Materials and Methods

2.1. Subjects and Design

In total, 1289 questionnaires were administered to university students enrolled in different university degree programs at universities in Vizcaya. Students were asked if they were physically active, to which 1099 students (601 women and 498 men) answered affirmatively and filled out the questionnaire, while 190 participants answered negatively or did not provide enough answers. As the latter did not engage in physical activity, they could not report on their motivations for doing so; consequently, many questions were left blank. Thus, these participants were excluded from the study. The participants' ages ranged between 18 and 29 years old ($M = 20.4$; $SD = 1.7$). Participating in the study was voluntary, and there was no reward for doing so. All participants provided informed consent after receiving a detailed explanation on the nature and objectives of the study.

2.2. Instruments

After reviewing the literature, we found that the BREQ-2 [61] is the most widely used instrument to measure motivation and evaluate the SDT with regard to participation in sports. The Spanish adaptation [60] of the test consists of 19 questions and five subscales (intrinsic regulation, identified regulation, introjected regulation, external regulation, and demotivation). The most self-determined form of regulating behavior is intrinsic regulation (or intrinsic motivation), because the behavior is consistent with a person's values and needs. Second, identified regulation implies that the behavior is performed because it is valued even though the activity is not pleasant. Third, introjected regulation represents the motivation to participate in physical activity owing to pressure and to avoid negative feelings. Fourth, external regulation implies that actions satisfy an external requirement in the absence of internalization. Finally, demotivation is a behavior defined by a lack of intention to participate in physical activity. Various studies connect intrinsically motivated behaviors with healthy, active, and physical-activity-oriented lifestyles, while less self-determined behaviors are those related to less recommended behaviors [57,62].

For this study, four of the subscales were used: intrinsic regulation, identified regulation, introjected regulation, and external regulation. The items of the demotivation subscale were not included in the model. This decision is based on the fact that, empirically, it is difficult to distinguish demotivation from identified or introjected regulation [63]. We selected only two items in each subscale, following as criteria the correlation that they had shown with the total scores in previous investigations [60]. In this way, we tried to reduce the length of the questionnaire without excessively compromising the reliability of the measurements. These eight items were drafted in an illustrative manner and suggested five Likert scale response options with scores from 1 to 5 (from completely disagree to completely agree). The BREQ-2 is considered a way to analyze SDT worldwide, and its validity and reliability have been assessed in different countries with good psychometric

measures, and assessed specifically in the Spanish university context [64–67]. The Spanish adaptation by Murcia, Gimeno, and Camacho [60] obtained good reliability coefficients (Cronbach's alpha) for the dimensions as follows: intrinsic regulation ($\alpha = 0.89$), identified regulation ($\alpha = 0.81$), introjected regulation ($\alpha = 0.82$), and external regulation ($\alpha = 0.86$). In addition, the psychometric properties of the BREQ-2 have been assessed in the university context [68–70]. In this study, Cronbach's alpha, correlation between items, and composite reliability were calculated, with lower levels of internal consistency.

To ascertain the amount of physical activity, we asked which sports the participants took part in and how many hours they dedicated weekly to each sport (including games, training, competitions, etc.). The participants were told that the question referred to all kinds of sports activities (training or playing, riding a bike, hiking in the mountains, running, skateboarding, etc.) that they engage in by themselves (alone, with friends, family, etc.) or as part of an organization, outside of class hours, on weekends, during vacations, and so on. In addition, the participants were asked to indicate their level of satisfaction with each of these activities. We used a single item with a 10-point Likert-type scale. Other investigations [71] provided a rationale for the use of single-item scales which, similarly to this item, have a high face validity and have been used in previous research in sport [72].

2.3. Procedure

Before administering the questionnaire, we completed the suitability request for the Ethics Committee at the Universidad de Deusto, which was granted with the code "ETK-24/17-18." Once the questionnaire was obtained, and the Committee approved the research, we reached out to the University of the Basque Country and the University of Deusto to collaborate and obtain permission to administer the questionnaire. Once permission was received, the data were collected.

Data were collected during student breaks between classes at the different university campuses. To collect the data and ensure that the questionnaires were administered and completed correctly, the researcher in charge was present to resolve any issues. At that time, prior to administering the questionnaire, all participants were informed that participation was voluntary and that the data collected would remain confidential. Note that the participants did not receive any type of incentive. The data were collected between February and March, 2018.

2.4. Statistical Analysis

Exploratory analyses and bivariate analyses (Pearson's correlations and *t*-test) were calculated using IBM's SPSS software (v.26). Effect size in mean differences was estimated using Cohen's *d*. The level of significance used was 0.05.

IBM AMOS software (v. 27) was used to calculate the goodness of fit indices in relation to the measurement model of the BREQ-2 scale, by performing a confirmatory factor analysis, and testing measurement model invariance between gender groups and the indirect effects mediated by the BREQ-2 scale factors. The individual parameters in CFA and means comparison and the significance of indirect effects were tested using bootstrapping procedures.

3. Results

3.1. Descriptive Statistics and Correlations

The BREQ-2 scale measurement model was tested using a confirmatory factor analysis that provided adequate goodness of fit indices [73,74] (SRMR = 0.033, RMSEA = 0.077, CFI = 0.972, NFI = 0.967). In Figure 1, correlations show that intrinsic motivation is the dimension that shares more variance with the other types of motivation, followed by identified regulation and, third, introjected regulation. The connection between intrinsic regulation and identified regulation is especially strong. External regulation is weakly associated with the others and has a negative association with intrinsic motivation. The

four types of motivation are organized concentrically, with intrinsic motivation in the most central position and external regulation in the farthest position.

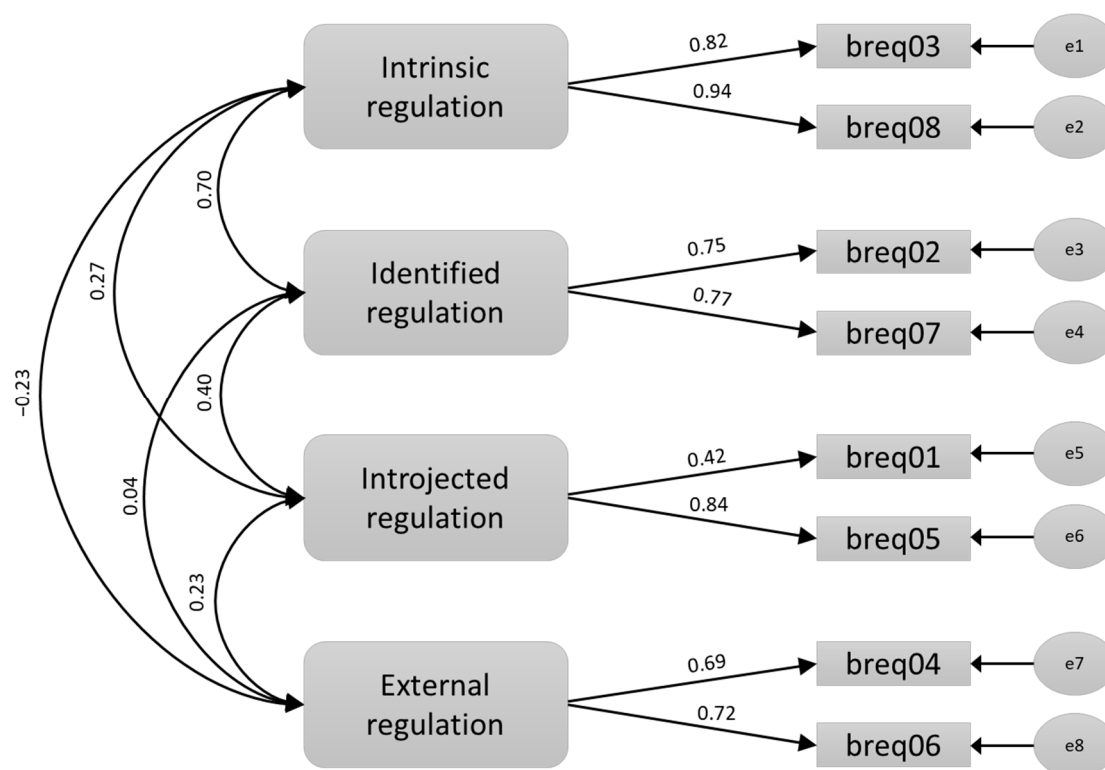


Figure 1. Measurement model of BREQ.

There was no univariate non-normality (with no skewness values above 2, nor kurtosis values above 7), but there was multivariate non-normality (Mardia's kurtosis = 21.95). Therefore, bootstrapping was adopted as a solution for several calculations.

We examined the invariance of the measurement model in the female and male groups. First, we tested the fit indices separately among females and males. Indices were acceptable in both groups (Table 1).

Table 1. Goodness of fit indices of the measurement model in the whole sample, in female group, and in male group.

	SRMR	RMSEA	CFI	NFI
Total	0.0327	0.077	0.957	0.951
Females	0.0385	0.081	0.950	0.939
Males	0.0320	0.059	0.977	0.965

Fit statistics associated to configural invariance model were adequate (SRMR = 0.036, RMSEA = 0.054).

Metric invariance was tested, comparing fit indices in the configural invariance model and having constrained factor loadings (Table 2). The reduction of fit indices between both models was not important (Δ SRMR = 0.003 and Δ RMSEA = 0.003) because of the enforcement of the factor loading equality constraints. These scores are well below the limits recommended in the literature and indicate metric invariance.

Table 2. Goodness of fit indices of measurement model in invariance levels.

Invariance Levels		Metric Invariance		Scalar Invariance		
Models and Difference	Configural Invariance Model	Constraining Factor Loadings	Δ	Constraining Factor Loadings	Constraining Intercepts	Δ
SRMR	0.036	0.039	0.003	0.039	0.045	0.006
RMSEA	0.054	0.051	0.003	0.051	0.065	0.014

We constrained intercepts for testing scalar invariance and estimated new fit indices (Table 2). The resulting score reduction was also under the limits recommended by several authors (Δ SRMR = 0.006 and Δ RMSEA = 0.014).

We completed the validity examination, analyzing the discriminant validity by calculating the heterotrait–monotrait ratios of correlations (HTMT) [75] and incorporating them in Table 3, below the diagonal. Results ranged from 0.06 and 0.70. These values are clearly smaller than one, even if a conservative criterion (0.85) is used, providing evidence of discriminant validity [72].

Table 3. Heterotrait–monotrait ratio of correlations (HTMT).

	BREQ-2 Intrinsic Reg.	BREQ-2 Identified Reg.	BREQ-2 Introjected Reg.	BREQ-2 External Reg.
BREQ-2 Intrinsic reg.				
BREQ-2 Identified reg.	0.702			
BREQ-2 Introjected reg.	0.271	0.501		
BREQ-2 External reg.	0.126	0.058	0.296	

Table 4 shows the central tendency measures and dispersion of the items and factors of the BREQ-2 scale, and the indicator of the volume of sports activity and of satisfaction with it.

Table 4. Sample size, mean, standard deviation of study variables, and internal consistency of BREQ-2 scales.

	N	Mean	SD	Skewness	Cronbach's Alpha	Inter-Item Correlation	Composite Reliability
Age	1099	20.40	1.73	1.25	-	-	-
BREQ-2 item 01	1099	2.94	1.38	−0.09	-	-	-
BREQ-2 item 02	1099	4.28	0.89	−1.50	-	-	-
BREQ-2 item 03	1099	4.24	0.95	−1.41	-	-	-
BREQ-2 item 04	1099	2.44	1.33	0.43	-	-	-
BREQ-2 item 05	1099	3.20	1.31	−0.30	-	-	-
BREQ-2 item 06	1099	1.89	1.16	1.08	-	-	-
BREQ-2 item 07	1099	4.22	0.90	−1.38	-	-	-
BREQ-2 item 08	1099	4.33	0.92	−1.57	-	-	-
BREQ-2 Intrinsic regulation	1099	4.28	0.88	−1.50	0.86	0.76	0.87
BREQ-2 Identified regulation	1099	4.25	0.77	−1.35	0.66	0.49	0.66
BREQ-2 Introjected regulation	1099	3.07	1.13	−0.17	0.59	0.41	0.60
BREQ-2 External regulation	1099	2.17	1.04	0.57	0.56	0.40	0.59
Weekly hours engaging in sports	1099	5.81	4.75	0.77	-	-	-
Average satisfaction with engaging in sports	938	8.50	1.32	−1.16	-	-	-

Higher levels of intrinsic, identified, and introjected motivation are significantly associated with spending more time participating in sports in the same order of magnitude. Intrinsic regulation is the most strongly related to the number of weekly hours of sports (Table 4) activity ($r = 0.297$), followed by identified regulation with a small correlation ($r = 0.171$), and introjected regulation with a very small effect size, significant but close to 0 (0.088). The relationship between external regulation and the number of hours is practically zero and is not statistically significant.

The relationship between the dimensions of motivation and the level of satisfaction follows a similar pattern (Table 5). The students who were most satisfied with physical activity were those who had a greater intrinsic regulation ($r = 0.261$), identified regulation ($r = 0.110$), and introjected regulation ($r = 0.088$). By contrast, a greater external regulation was associated with a lower satisfaction with physical activity ($r = -0.074$). This is a considerably small but statistically significant correlation.

Table 5. Correlations between gender, BREQ-2 dimensions, amount of sports activity, and satisfaction with sports activity, and divergent validity evidence for BREQ-2 dimensions.

	BREQ-2					
	Intrinsic	Identified	Introjected	External	W.Hours	A.Satis.
Intrinsic regulation	1	0.528 **	0.190 **	−0.091 **	0.297 **	0.261 **
Identified regulation	0.702	1	0.309 **	0.039	0.171 **	0.110 **
Introjected regulation	0.271	0.501	1	0.170 **	0.125 **	0.088 **
External regulation	0.126	0.058	0.296	1	−0.019	−0.074 *
Weekly hours engaging in sports					1	0.151 **
Average satisfaction with engaging in sports						1

Correlations are displayed above the diagonal and heterotrait–monotrait ratios of correlations (HTMT) are displayed below the diagonal. * p -value < 0.05 (2-tailed), ** p -value < 0.01 (2-tailed).

Regarding motivation, the main statistically significant difference between women and men was in intrinsic regulation (Table 6), with a small difference ($\nu = -0.293$) favoring men. Men also had significant but slightly higher external regulation ($\nu = -0.202$). No statistically significant differences were found between men and women in the levels of identified regulation and introjected regulation.

Table 6. Gender comparison on BREQ-2 dimensions, sport practice hours amount, and satisfaction, with means.

		Means				
	Male ¹	Female ¹	Difference		C.R. ²	<i>p</i> -Value
BREQ-2	0.00	−0.293	−0.293		−5.737	<0.001
Intrinsic regulation						
BREQ-2	0.00	−0.021	−0.021		−0.443	0.658
Identified regulation						
BREQ-2	0.00	−0.040	−0.040		−0.768	0.443
Introjected regulation						
BREQ-2	0.00	−0.202	−0.202		−3.490	<0.001
External regulation						
	Male	Female	Difference	Cohen's d	<i>t</i> -test	<i>p</i> -value
Weekly hours engaging in sports	7.13	4.71	2.42	0.51	8.53	0.000
Average satisfaction with engaging in sports	8.57	8.43	0.14	0.10	1.58	0.114

¹ Bootstrap estimates (ν) of latent motivation variables' means, having constrained the male group mean to 0 and freely estimating for women. ² Critical Ratio.

The group of men spent much more time engaging in sports ($d = 2.42$ h) (Table 6). Compared to women, men spend more than two hours per week more participating in sports on average. However, while the sample shows the mean level of satisfaction of men who participate in sports as slightly higher than that of women, this difference is not statistically significant.

3.2. Mediation Analyses

Next, we analyze the mediating role of motivational factors in the effect of gender on time spent exercising and satisfaction with it.

The measurement model for the first one (weekly hours engaging in sports) (Figure 2) had acceptable model fit indices (SRMR = 0.046, RMSEA = 0.072, CFI = 0.951, NFI = 0.942).

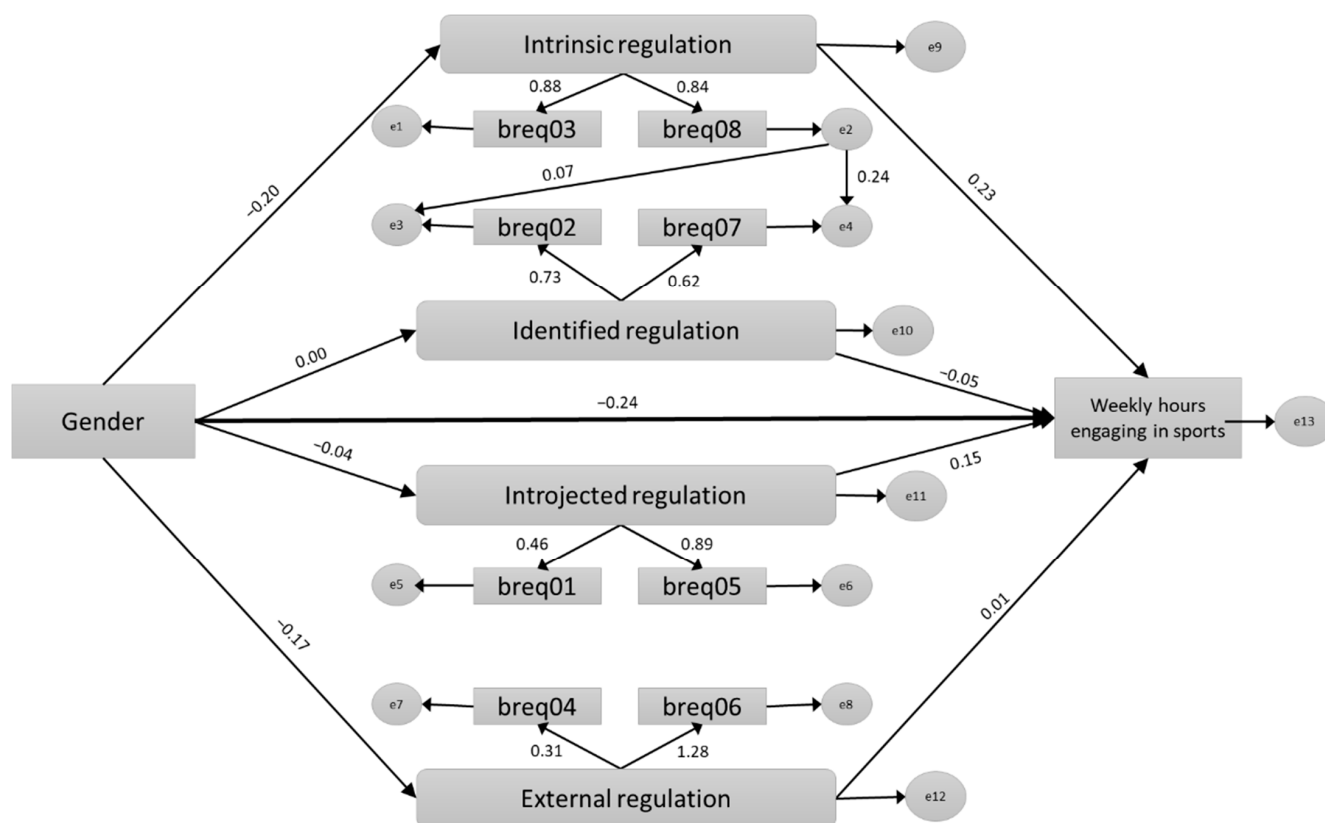


Figure 2. Path analysis from gender to sport practice hours' amount with the mediation of BREQ-2 factors.

Gender had a larger direct effect on the number of hours spent engaging in sports (standardized direct effect = -0.240 , $p = 0.002$) compared to its overall indirect effect (standardized indirect effect = -0.054 , $p = 0.002$) (Figure 2). This limited indirect effect was significant only through intrinsic regulation (estimate = -0.388 , $p = 0.001$) (Table 7).

Table 7. Indirect effects from gender to hours spent engaging in sports with the mediation of BREQ-2 factors.

Mediator	Estimate	Lower Bound	Upper Bound	p-Value
Intrinsic regulation	−0.388	−0.639	−0.214	0.001
Identified regulation	−0.001	−0.083	0.055	0.842
Introjected regulation	−0.054	−0.225	0.101	0.302
External regulation	−0.013	−0.140	0.095	0.600

Lower and upper bounds correspond to a confidence level of 95%.

Model fit indices when considering satisfaction as the dependent variable were substantially similar to the previous one (SRMR = 0.044, RMSEA = 0.072, CFI = 0.948, NFI = 0.938), but the mediation pattern was different for satisfaction with engaging in sports (Figure 3). First, as shown in Table 8, gender differences in satisfaction had a considerably small effect size in this sample and were not statistically significant. Nevertheless, we decided to explore the possible effects of mediation, albeit within the limits of the sample. In this case, the direct effect of gender on satisfaction (standardized direct effect

= 0.008, $p = 0.599$) was almost nonexistent and statistically nonsignificant, but its indirect effect, while notably small (standardized indirect effect = -0.051 , $p = 0.024$), was statistically significant (Table 8). Once again, intrinsic regulation was the only significant mediating dimension from gender to BREQ-2 factors.

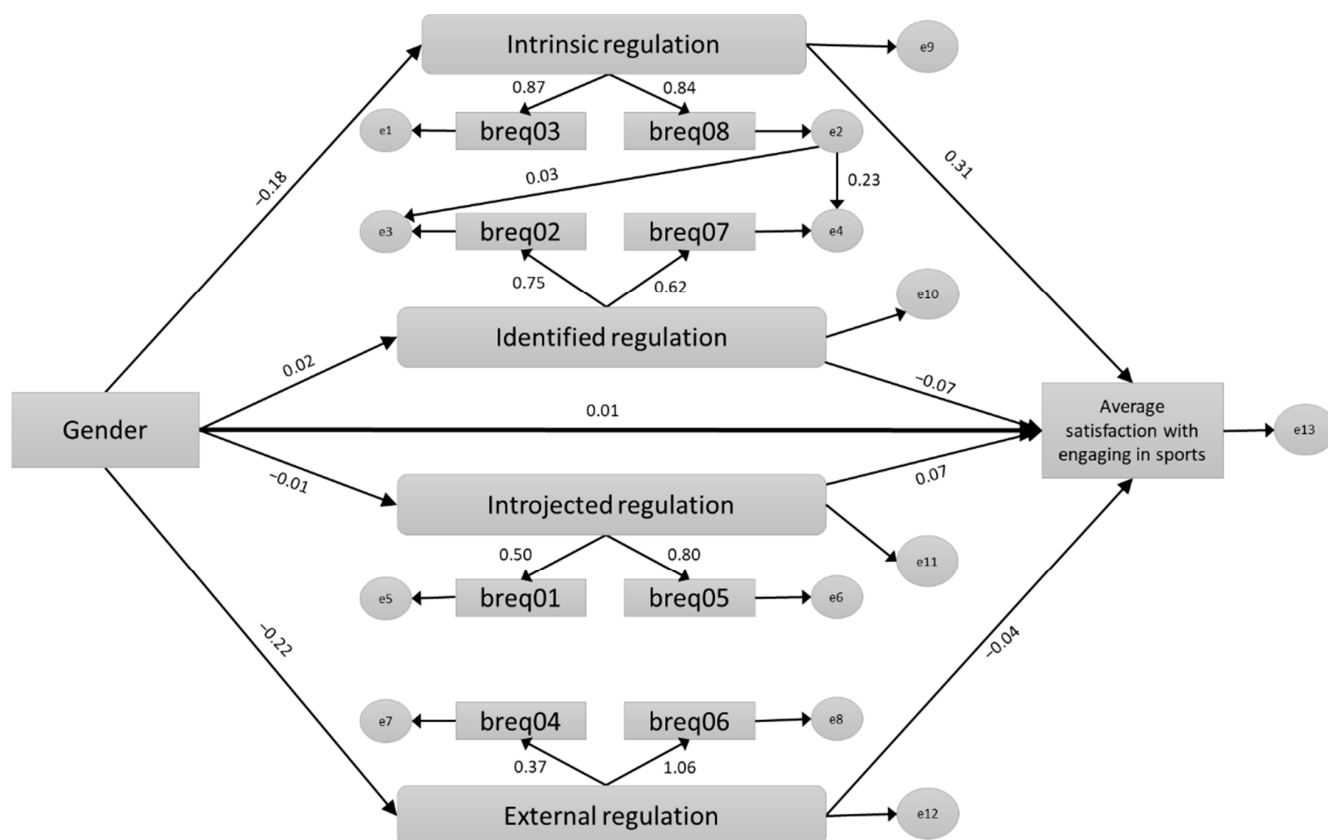


Figure 3. Path analysis from gender to satisfaction with sport practice with the mediation of BREQ-2 factors.

Table 8. Indirect effects from gender to satisfaction with sport practice with the mediation of BREQ-2 factors.

Mediator	Estimate	Lower Bound	Upper Bound	p-Value
Intrinsic regulation	−0.150	−0.273	−0.083	0.001
Identified regulation	−0.003	−0.051	0.009	0.441
Introjected regulation	−0.002	−0.033	0.028	0.614
External regulation	0.023	−0.019	0.094	0.330

Lower and upper bounds correspond to a confidence level of 95%.

4. Discussion

The objective of this study was to analyze the motivations for engaging in physical activity among university students using a short version of the Spanish version of the Behavioral Regulation in Exercise Questionnaire (BREQ-2) [60], to study their relationship with gender, the volume of sports activity, and level of satisfaction. The study also examined the mediating role of motivation in the effect of gender on the level of physical activity and satisfaction. It also examined the mediating role of motivation in the effect of gender on the level of physical activity and the level of satisfaction.

In a similar study [76] carried out with students from the three Spanish universities, the results obtained regarding the reasons for participating in sports and the difference between genders were an essential factor in creating motivational strategies so that students with sedentary and unhealthy habits would try to maintain a physical activity routine.

This BREQ-2 version could be used in situations in which these variables are to be measured, in contexts in which they are measured together with many other variables, to avoid excessively long questionnaires and improve participation, and when they are to be applied to large samples. Naturally, the use of a greater number of indicators for the measurement of latent variables has important psychometric advantages.

The results obtained show that students' physical activity levels were at 7.13 h (SD = 5.1) for men and 4.71 h (SD = 4.17) for women, which is in line with various studies reporting more physical activity in men compared to women [77–80]. By contrast, we did not find significant differences in the level of satisfaction based on gender (8.57 for men; 8.43 for women), as in other studies [81,82]. Some of these other studies used samples of participants belonging to athletics clubs, whereas our study is a general university population. It could be that the differences in satisfaction between genders occur differently in specialized and competitive sporting environments, compared to the general population.

The results obtained reflect significant differences in favor of men with intrinsic regulation. This finding indicates more self-determined behaviors in men, similar to the results published in previous studies [83–87]. By contrast, other authors [88–91] found that women obtained higher scores in intrinsic regulations.

In this study, we found that the less self-determined regulations (external and introjected) had the lowest levels of agreement among the participants, while the more self-determined regulations (intrinsic and identified) had higher levels. These results can be compared to other similar studies [68,85,92,93]. However, previous studies have also indicated that identified regulation was a stronger predictor for women compared to men [94] in terms of time spent participating in sports. Different studies [95,96] compare the reasons for engaging in physical activity and the frequency of exercising, analyzing the duration and frequency, suggesting that the most active students were those who also obtained higher scores in the intrinsic factors and lower ones in external regulations.

Regarding the relationship between motivation and satisfaction levels, similar to other studies [97,98], students with higher scores in intrinsic regulation participate for positive reasons, show higher levels of satisfaction with the physical activity, as opposed to those participating for negative reasons. By contrast, as regulation becomes less self-determined, satisfaction levels decrease, having a small but statistically significant negative correlation.

Moreover, the results of this study show that the direct effect of gender on the amount of physical activity is much stronger than on the participants' level of satisfaction. The frequency of physical activity is higher in the male group, as seen in previous studies [91,99,100]. However, as in previous studies [101,102], we did not find significant differences in the level of satisfaction between men and women. The path analysis indicated that the effect of gender on the frequency of activity is mainly direct, although the mediation of intrinsic regulation was statistically significant [103]. While no statistically significant differences were found in the level of satisfaction between women and men, the potential mediation of motivation in this relationship was explored. The result showed that intrinsic regulation could play a significant mediating role such that the weak relationship between gender and satisfaction was highly mediated by intrinsic motivation.

5. Conclusions

Once again, it was possible to corroborate the magnitude of gender differences in physical activity and its motivation. It is reasonable to assume that female university students would benefit as much as male students if they had the same opportunities to exercise. It seems that they are not having the same opportunities for benefiting in health and quality of life from the effects of physical activity, not only in the short term, but also in the medium and long term.

This study found some interesting results that could guide and direct strategies to promote physical activity. The results could be used by professionals and teams promoting physical activity and health to develop programs that encourage externally regulated and

less self-determined students to change their focus toward intrinsic objectives and/or training, and to communicate the benefits that physical activity can have on their health.

Some of the gender differences in the frequency of physical activity seem to be mediated by intrinsic regulation, so intervention could potentially be effective. The intrinsic regulation dimension is significantly related to identified regulation; thus, knowledge of the benefits of physical activity is connected to intrinsic regulation.

External regulation is perceived more intensely by men, which may be related to cultural aspects characterized by a greater expectation of physical activity by men in aspects such as health, competition, or play [76]. It should be noted that a greater intensity of perception of this external regulation is not associated with greater physical activity, but with less satisfaction to a small extent.

Universities have the ability to influence areas that go beyond the strictly academic, and their importance as a privileged environment to promote physical activity and health should be considered. However, coupled with this and based on a previous study [104], when courses related to physical activity are offered, the students who tend to enroll are those who are more physically active and more motivated. It is necessary to develop strategies to enhance the intrinsic and identified motivation of less motivated students to revert their inactive patterns into more active and healthy patterns.

With a view to future similar research, it would be interesting and would add value to measure behavior modification, as in other research [105,106], using different instruments, and thus increasing the connection between behavior, motivation, and sports practice.

Author Contributions: I.S. developed the study's general design. I.S., J.S. and I.R. formulated the study hypothesis. I.S. collected the data. J.S. and I.S. analyzed the data and interpreted the statistical analyses. I.S., J.S. and I.R. wrote, read, and approved the final version of the document. All authors have read and agreed to the published version of the manuscript.

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