MESTRADO INTEGRADO EM PSICOLOGIA
PSICOLOGIA CLÍNICA E DA SAÚDE

Positive body image, academic achievement, and career aspirations in university students

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2019

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June 2019

LEGAL NOTICES

Acknowledgments

To my parents, for always having my back in every decision I make, no matter how crazy it may seem. For showing me that I can achieve anything I put my mind to and for bringing me up whenever I doubt myself.

To my sister, for being my biggest pillar from the moment we were born and for accompanying me in every step of the way.

To the friends I had the pleasure to meet in my university years, that have become like a second family. These last years would not have been the same without you, especially not as joyful and fun.

To the rest of my family and friends, for showing their care and support.

To my thesis advisor, Professor Sandra Torres, for your motivation and continuous help and support throughout this whole process. For guiding me into accomplishing this work, always showing your availability to elucidate all of my doubts.

Thank you for sharing this journey with me.

Resumo

A imagem corporal tem um impacto significativo no funcionamento psicológico e nas relações sociais, especialmente em adultos jovens. Recentemente, a imagem corporal positiva (ICP) tem sido alvo de um maior foco na literatura, possibilitando a compreensão dos seus efeitos em dimensões como a satisfação com a vida e comportamentos de saúde. Tendo em conta que este é um construto recente, ainda pouco se sabe sobre a sua relação com a dimensão académica.

Assim, o presente trabalho teve como objetivo explorar a relação entre a ICP e o desempenho académico e aspirações profissionais, numa amostra de estudantes universitários ($N = 3690$; 18–35 anos). As análises estatísticas foram conduzidas para explorar diferenças na ICP atendendo ao género, índice de massa corporal (IMC), nível de escolaridade e país. Para além disso, a relação entre a ICP e a autoestima, após controlar os efeitos da idade, género e IMC, foi avaliada. A autoestima foi, adicionalmente, testada enquanto possível mediadora da relação entre a ICP e o domínio académico.

Os resultados mostraram uma correlação positiva entre a ICP e as duas áreas académicas e, ainda, o efeito mediador da autoestima nesta relação. Foram encontrados níveis superiores de ICP no sexo masculino e em sujeitos com um menor IMC. Diferenças na ICP foram, igualmente, verificadas relativamente ao país, mas não relativamente ao nível de escolaridade. As diferenças observadas foram de pequena magnitude.

Este estudo denota a importância de atender à ICP e autoestima no sentido de promover um maior bem-estar nos jovens.

Palavras-chave: Imagem corporal positiva, desempenho académico, aspirações profissionais, autoestima, estudantes universitários.

Abstract

Body image has a significant impact on psychological functioning and social relationships, especially in young adults. More attention has been given to the positive body image (PBI) construct in the literature, making it possible to understand its effect on important areas of people's life, such as life satisfaction and health behaviors. Since PBI is a recent construct, less is known about its relationship with the academic dimension.

Therefore, the present work aimed to explore the relationship between PBI and academic achievement and educational/career aspirations, in a sample of university students ($N = 3690$; 18–35 years old). Statistical analyses were conducted in order to explore PBI differences regarding gender, body mass index (BMI), study level, and country. Furthermore, we assessed the relation between PBI and self-esteem, when controlling for age, gender, and BMI. Self-esteem was then tested as a possible mediator for the relationship between PBI and the academic domain.

Results showed a positive correlation between PBI and both academic areas, and the mediator effect of self-esteem in this relationship was supported. Higher PBI was found in male participants and in subjects with lower BMI levels. Differences in PBI were also observed in respect to country, but not in respect to study level. Group differences were of small magnitude.

This study suggests the relevance of attending to PBI and self-esteem in order to promote greater well-being in young people.

Keywords: Positive body image, academic achievement, educational/career aspirations, self-esteem, university students.

Introduction

It is an established fact that body image plays a vital role in several areas of people's life (Yadav, 2017). The negative consequences of poor body image cut across all key areas of living, including psychological and physical functioning (Wilson, Latner, & Hayashi, 2013). Extensive research links body dissatisfaction to low self-esteem (e.g., Van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010), symptoms of depression (e.g., Tylka & Wood-Barcalow, 2015a; Xie et al., 2010), and negative health outcomes, such as maladaptive eating behaviors (e.g., Etcoff, Orbach, Scott, & D'Agostino, 2006; Markey & Markey, 2005) and reduced exercise behavior (e.g., Grogan, 2006).

In addition to these well-established harmful effects, body image problems have also been hypothesized to undermine academic achievement and educational/career aspirations. Body image dissatisfaction might lead to a high level of class absenteeism due to social anxiety regarding appearance. Concerns about the look, size, weight, and shape can also inhibit attentional processes, such as concentration (Yanover & Thompson, 2008), and diminish confidence (Halliwell, Diedrichs, & Orbach, 2014) and hence performance. Determining the specific role that body image plays in academic performance during the school years is a topic of interest since it seems to be a strong predictor of social and occupational success in adult life (Serbin, Stack, & Kingdon, 2013). Academic achievement is an important determinant of good job opportunities, desired earnings, and higher social status (Tallat, Fatima, Fiza, & Adiya, 2017), and is groundwork to ambition and advancement (Elsherif & Abdelraof, 2018).

There is a significant body of research examining whether weight condition, mainly overweight and obesity, disrupts academic functioning. The basic assumption is that excess weight can be related to lower academic achievement due to the stigmatized nature of obesity (Crosnoe & Muller, 2004) and the possible impact of obesity on cognitive function (Yu, Han, Cao, & Guo, 2010). In fact, some studies have suggested that children and adolescents with excessive weight have lower learning skills, exhibiting poorer executive function, memory, and attention compared with normal weight peers (Li, Dai, Jackson, & Zhang, 2008; Taras & Potts-Datema, 2005). However, a recent systematic review (Santana, Hill, Azevedo, Gunnarsdottir, & Prado, 2017) concluded that there is insufficient evidence to support a direct link between obesity and poor academic performance. It remains unclear whether the association between excess adiposity and poor academic achievement found in

1

some studies is mediated by variables such as socioeconomic status, parental education, and physical activity. In addition, it is possible that causal processes linking school performance and obesity may differ between the development stages.

Substantially fewer studies have examined this link in university students. Globally, they tend to conclude that body mass index (BMI) is negatively correlated with academic performance (Anderson & Good, 2017; Franz & Feresu, 2013), but uncorrelated with problem-solving skills (Anderson & Good, 2017). These findings reinforce the need to explore the effect of BMI on academic performance.

It should be noted, however, that data from research in weight status do not allow to draw conclusions about the connection between body image experience and academic success. To date, the research addressing this topic is limited and covers three educational stages, including middle school (13–14 years old), high school (15–18 years old), and college/university (18–30 years old). Evidence regarding middle and high school students has found that body dissatisfaction is associated with poor academic achievements, mainly due to school avoidance and lack of participation in classes (Etcoff et al., 2006; Halliwell et al., 2014; Mikkilä, Lahti-Koski, Pietinen, Virtane, & Rimpelä, 2003) as well as the perception of being overweight, regardless of actual weight (Florin, Shults, & Stettler, 2011; Xie et al., 2006). This last data, in particular, led to the assumption that body image could influence academic achievement more than the real weight status of students. However, we can also find in the literature divergent results. For instance, Gupta (2012) did not discover any significant relationship between body image and academic achievement in middle school adolescents.

In college students, body dissatisfaction and body concerns appear to be correlated to poorer academic achievement and functioning, as they might result in school absenteeism due to social anxiety about one's physical appearance (Schrick, Sharp, Zyonkovic, & Reifman, 2012; Yanover & Thompson, 2008). Specifically in women, it was observed a significant association between negative body image and academic performance, graduation rates, motivation, and the likelihood of course withdrawing (Knightly & Whitelock, 2007). Complementarily, higher academic achievements have been found in students who were able to reject appearance norms (Schrick et al., 2012) or were less focused on their physical appearance (Miles, 2009; Tallat et al., 2017). In spite of that, these results were not found in Elsherif and Abdelraof's (2018), since the negative correlation between body dissatisfaction and academic behavior did not reach a significance level in their study.

Methodological differences can be an explanation for the contradictory findings here reported. In particular, the use of different measures of academic achievement—such as grade point averages (GPAs; e.g., Crosnoe & Muller, 2004; Mikkilä et al., 2003), standardized tests (e.g., Judge & Jahns, 2007), intelligence quotient (e.g., Li, 1995), school attendance (e.g., Datar & Sturm, 2006; Taras & Potts-Datema, 2005), participation in class (e.g., Schrick et al., 2012), and school functioning (e.g., Swallen, Reither, Haas, & Meier, 2005)—and the absence of male participants (e.g., Halliwell et al., 2014; Schrick et al., 2012) or great gender imbalance.

In respect of the relationship between body image and educational and career aspirations, the current body of research is scarce and also inconsistent. Some data suggest that negative body image could lead to lower expectations for a successful career in girls/women (The Future Foundation, 2012), as a consequence of decreasing participation in secondary education (e.g., avoiding any involvement in school activities) and job (e.g., absenteeism, not going to job interviews) whenever they feel bad about how they looked (Etcoff et al., 2006; Halliwell et al., 2014). In turns, a better body image seems to be associated with greater career decision-making self-efficacy (Woodrow-Keys, 2006). In addition, there is some evidence that women who pursuit, or plan to, a post-graduate education tend to focus less on physical appearance (Miles, 2009) and reveal a lower preference for thin body-ideal messages (Betz & Ramsey, 2017). Altogether, these studies suggest that females high on educational/career aspirations report greater body-protective attitudes. Conversely, there is also a line of research that suggests that professional success is associated with thinness (Jarry, Polivy, Herman, Arrowood, & Pliner, 2006), especially among status aspiring females (Tiggemann, 2001). There is also data documenting that undergraduate women with higher educational/career aspirations report greater body dissatisfaction and ineffectiveness after being exposed to thin targets (Smith, Li, & Joiner, 2011).

In sum, whether body experience interacts with educational aspirations is still an open question. To increase knowledge on this topic more studies are needed with larger samples (Halliwell et al., 2014). Furthermore, the study of body image should encompass a broader exploration of the concept, covering positive body image. This recent construct represents an important shift from a primary focus on body disturbances and extends beyond appearance satisfaction (Avalos, Tylka, & Wood-Barcalow, 2005; Tylka & Wood-Barcalow, 2015b). As a multifaceted construct, positive body image can be defined as a sense of love and respect for one's body, containing aspects of body appreciation and

3

acceptance, body image flexibility, broad conceptualization of beauty, inner positivity, and body functionality orientation (Halliwell, 2015; Holmqvist & Frisén, 2012; Menzel & Levine, 2011; Tylka & Wood-Barcalow, 2015b).

In this study, we sought to explore the predictive effect of positive body image on academic achievement and educational aspirations among university students. We employed the use of a large and diverse sample, including university students from eight countries. We hypothesized that positive body image would significantly predict both academic dimensions (achievement and aspirations). Inherent is the assumption that students having a more positive body image were also more likely to be engaged in career planning (Woodrow-Keys, 2006). Theoretical reasons also exist to expect that positive body image increases the likelihood of higher academic achievement and aspirations. The link between positive body image and variables associated with psychological well-being, such as self-esteem and positive affect (Alleva, Martijn, Veldhuis, & Tylka, 2016; Atari, 2016; Avalos et al., 2005; Swami & Ng, 2015; Swami, Ng, & Barrond, 2016; Swami, Tudorel, Goian, Barron, & Vintila, 2017), can foster students' self-confidence and a more favorable learning context (Brannan & Petrie, 2011; Salami, 2010).

Considering that male gender has been largely neglected in previous research, this study was conducted in both genders, making it possible to detect differences. We also aimed to analyze the variations according to BMI. In fact, it is currently unknown whether the influence of body image on several areas of living could vary according to gender and BMI. Previous findings on body appearance have produced inconclusive results in what concerns to gender differences. Most studies with university students have reported higher scores in men compared to women (Atari, 2016; Kertechian & Swami, 2017; Swami & Ng, 2015; Tylka & Wood-Barcalow, 2015a), but the magnitude of the difference was tendentially small. Moreover, there is also data suggesting higher body appreciation in women (Jain & Tiwari, 2016) or no significant gender differences (Swami et al., 2016). With respect to BMI, research has shown a negative correlation with positive body image (Swami et al., 2017), particularly in women (Swami & Ng, 2015; Swami et al., 2016). Besides, a positive relation has been documented in men as well (Atari, 2016), and no association is also reported (Vally, D'Souza, Habeeb, & Bensumaidea, 2018).

There is also a growing body of evidence proposing that the association between body image and the academic domain can be explained by the influence of other variables. Of those, self-esteem has drawn particular attention given its association with both academic achievement (e.g., Arshad, Zaidi, & Mahmood, 2015; Aryana, 2010; Duraku & Hoxha,

4

2018; Elsherif & Abdelraof, 2018; Hosseini et al., 2016; Saadat, Ghasemzadeh, & Soleimani, 2012) and positive body image (e.g., Alleva et al., 2016; Atari, 2016; Swami et al., 2017; Tylka & Wood-Barcalow, 2015a; Vally et al., 2018) in samples of university students. Based on these considerations, we examined the association of self-esteem with academic variables (i.e., academic achievement and educational/career aspirations) and positive body image. Then, we tested whether and how much self-esteem explains (i.e., mediates) the relationship between positive body image and the academic domain. We predicted that self-esteem is an intervening variable in this relationship, as suggested by Elsherif and Abdelraof (2018).

This study has an increased significance in the particular context of positive body image—a very recent construct—elucidating of its possible impact. In addition, knowing if a connection exists between positive body image and academic success could be beneficial to the professionals involved in creating environments in which students can succeed (Gupta, 2012; Miles, 2009).

Method

1. Participants

The sample consisted of 3690 university students (1037 males and 2653 females), aged between 18 and 35 years old ($M = 21.87$, $SD = 3.26$), from Bosnia-Herzegovina ($n = 337$), Belgium ($n = 158$), Croatia ($n = 417$), Finland ($n = 313$), Greece ($n = 1377$), Ireland ($n = 116$), Israel ($n = 300$), and Portugal ($n = 672$).

2. Measures

2.1. Demographics

Participants provided demographic information regarding age, gender, country, study level (Bachelor's degree, Master's degree, or Doctoral degree), height (in centimeters), and weight (in kilograms). Self-reported height and weight were then used to calculate BMI (kg/m^2).

2.2. Positive body image

Positive body image was assessed using the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015a; for Portuguese validation see Lemoine et al., 2018; Torres, Barbosa, Meneses, Tylka, & Vieira, 2018), a 10-item measure on a 5-point scale ranging from 1 (*never*) to 5 (*always*)—with higher scores representing a more positive body image. The BAS-2 demonstrated good internal consistency in a sample of college men (Cronbach's $\alpha = .93$) and women (Cronbach's $\alpha = .94$; Tylka & Wood-Barcalow, 2015a), which is in accordance with the results observed in the study of Vally et al. (2018), that found good to excellent internal reliability in a group of university students (Cronbach's $\alpha = .89$–$.92$).

2.3. Academic achievement

The Self-Reported Study Performance (SRSP) is a 6-item measure which represents subjective parameters of academic achievement in university (Šverko & Babarović, 2019). The 5-point Likert scale varied according to the item. The score 1 could represent: *Very dissatisfied*; *one of the worst students*; or *not important*. The score 5 could indicate: *Very*

satisfied; *one of the best students*; or *very important*. The SRSP showed good internal reliability (Cronbach's α = .84) in a sample of high school students (Šverko & Babarović, 2019).

2.4. Career aspirations

Career aspirations were measured by the Career Aspiration Scale-Revised (CAS-R; Gregor & O'Brien, 2015), a 24-item Likert scale ranging from on 0 (*not at all true of me*) to 4 (*very true of me*), that includes three subscales (Achievement Aspiration, Educational Aspiration, and Leadership Aspiration). Only the Educational Aspiration subscale (CAS-R/Educational) was used in this study. This subscale assesses the degree to which individuals aspire to have more competencies, training, or advanced education within their career. It revealed good internal reliability in a sample of graduate female students (Cronbach's α = .89; Gregor & O'Brien, 2015)

2.5. Self-esteem

Self-esteem was assessed by the 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; for Portuguese validation see Santos, 2008), answered on a 4-point Likert scale, ranging from 0 (*strongly disagree*) to 3 (*strongly agree*), with higher scores indicating greater self-esteem.

With samples of university students, the RSES has shown good internal reliability. In Atari's (2016) study, the Cronbach's alpha was .84 for men and .81 for women. In Portugal, Santos (2008) found a Cronbach's alpha of .82.

3. Procedures

The present study is based upon work from COST Action Appearance Matters IS1210, supported by COST (European Cooperation in Science and Technology), which aimed to understand the importance of positive body image in educational and vocational outcomes. This project was approved by the Ethics Committee in all countries (Portugal: Ethics Committee of the Faculty of Psychology and Education Sciences of the University of Porto, reference 1-12/2016).

The questionnaires which were not available in participating countries were translated in the respective languages following the Translation, Review, Adjudication, and Documentation (TRAPD) system (Harkness, 2003).

In order to approach the largest possible group of students, invitations to complete the questionnaire were sent by universities. The students received an email, through their institutional account, containing a brief description of the study and a link to the secure online questionnaire. Selecting the link, the participants were informed about the ethical principles (volunteer participation, protecting confidentiality of data, right to withdraw from the research at any time, and principal investigator contact). All participants voluntarily provided written informed consent online prior to participation. Each questionnaire was presented on a new page. The order of the scales was counterbalanced to control for order effects.

4. Data analysis

The multi-group confirmatory factor analyses (MGCFA) was previously performed by the Working Group 2 of the COST Action in order to clarify whether the scales used in this research elicited similar response patterns across all samples—enabling the comparison between them (Brown, Harris, O'Quin, & Lane, 2017). Country invariance was not found in Israel's and Belgium's scores on the RSES and CAS-R/Educational, respectively, and were excluded from statistical analyses. In addition, one item of the CAS-R (#23) and RSES (#7) were excluded in the calculation of the items' mean scores, due to low factor loadings. Good reliability results were observed in all scales (COST Action IS1210, Working Group 2, 2017).

In this study, data were analyzed on the Statistical Package for the Social Sciences (SPSS), version 22. To test the distribution of data we used the Kolmogorov-Smirnov test (with Lilliefors Significance Correction) and the following criteria: Absolute skewness (Sk) and kurtosis (K) values lower than 3.0 and 8.0, respectively (Kline, 2005). Based on these criteria the assumption of normality was met for the total sample. Descriptive statistics were calculated to gender, age, study level, country, and BMI.

Group differences in BAS-2 scores according to gender (independent samples Student's t-test), weight category (independent samples Student's t-test), study level (ANOVA; three groups: Undergraduates, graduates, and postgraduates), and country (Welch's ANOVA;

eight countries) were tested. In respect of weight category, participants were divided into two categories based on World Health Organization's BMI standards (WHO, n.d.): Normal weight (NW; BMI between 18.5 and 24.9 kg/m^2) and overweight/obesity (OW/OB; BMI equal or above 25 kg/m^2). Underweight could not be included in the analysis since the number of participants that fitted in this category were considerably smaller than the rest, leading to a great imbalance. Due to a violation of homogeneity of variance assumption, Welch's ANOVA was used while exploring differences in BAS-2 scores between countries. Post-hoc comparisons were carried out using the Tukey's test with Bonferroni correction when examining differences according to study level. As the homogeneity of variance was not respected, the Games-Howell test was used in multiple comparisons analysis in respect to country (Field, 2013). Effect size was measured by the Cohen's d, Glass's delta (Δ), eta-squared (η^2), and omega squared (ω^2) coefficients. Glass's delta and omega squared were used due to heterogeneity of variance. For Cohen's d and Glass's delta, the following cut-off points were considered: 0.20 (small), 0.50 (moderate), and 0.80 (large effect). Cut-off points for eta-squared and omega squared were: .01 (small), .06 (medium), and .14 (large effect; Cohen, 1988).

Pearson's r correlation coefficients were used to assess the relationship between positive body image, academic achievement, educational/career aspirations, self-esteem, BMI, and age. To determine if positive body image accounted for unique variability in self-esteem, hierarchical regression analysis was performed to evaluate the relationship between these variables, when adjusting for age, gender, and BMI.

Lastly, mediation analysis procedures with bootstrap sampling, as recommended by Preacher and Hayes (2004), were performed. These analyses were conducted using the PROCESS macro (Hayes, 2013), a computational procedure for SPSS, and involved several steps. In the first step, the relationship between the BAS-2 and academic achievement and educational/career aspirations (two different models) was examined. In the second step, the relationship between the BAS-2 and the hypothesized mediator (self-esteem) was explored. The third step included the examination of the relationship between the mediator and academic achievement/career aspirations. The exploration of the insignificance (or the meaningful reduction in effect) of the relation between the BAS-2 and the two outcome variables in the presence of the mediator was assessed in the fourth step. In sum, the direct path was the effect of the BAS-2 on academic achievement and educational/career aspirations, independent of its effect on self-esteem. The indirect effect was the path linking the BAS-2 to the academic domain via self-esteem. In turn, the total effect of the BAS-2 on

the academic dimension was the sum of the direct and indirect effects. Estimates of all paths were calculated using a set of ordinary least squares regressions. As outlined by Preacher and Hayes (2004), mediation is demonstrated when the indirect effect is significant and the confidence intervals do not contain zero (i.e., indicating that the indirect effect is significantly different than zero).

Results

1. Sample characteristics

Descriptive statistics for gender and age by country are presented in Tables 1 and 2, respectively. The distribution by study level is shown in Table 3. Considering the total sample, 2522 participants were undergraduate (70.2%), 984 were graduate (27.4%), and 88 were postgraduate (2.4%) students.

Table 1
Gender According to Country

Country	Male		Female	
	n	%	*n*	%
Bosnia-Herzegovina	89	26.4	248	73.6
Belgium	23	14.6	135	85.4
Croatia	216	51.8	201	48.2
Finland	50	16.0	263	84.0
Greece	337	24.5	1040	75.5
Ireland	25	21.6	91	78.4
Israel	142	47.3	158	52.7
Portugal	155	23.1	517	76.9
Total	1037		2653	

Table 2
Age According to Country

Country	*M* (*SD*)	Min.	Max.
Bosnia-Herzegovina	22.1 (2.17)	18.0	33.0
Belgium	19.3 (1.69)	18.0	25.0
Croatia	22.2 (2.22)	18.0	33.0
Finland	23.9 (3.50)	18.0	35.0
Greece	21.2 (3.20)	18.0	35.0
Ireland	20.2 (2.36)	18.0	33.0
Israel	25.7 (2.63)	20.0	30.0
Portugal	21.2 (3.13)	18.0	35.0

Note. Min. = minimum age; Max. = maximum age.

Table 3
Study Level According to Country

Country	Undergraduate (Bachelor's degree)		Graduate (Master's degree)		Postgraduate (Doctoral degree)	
	n	%	*n*	%	*n*	%
Bosnia-Herzegovina	176	54.3	147	45.4	1	0.3
Belgium	138	87.4	20	12.6	0	0.0
Croatia	147	39.0	225	59.7	5	1.3
Finland	183	61.2	111	37.1	5	1.7
Greece	1174	85.5	164	11.9	36	2.6
Ireland	101	88.6	13	11.3	0	0.0
Israel	234	84.8	36	13.0	6	2.2
Portugal	369	54.9	268	39.9	35	5.2
Total	2522		984		88	

BMI data were only collected in five countries (Bosnia-Herzegovina, Croatia, Greece, Ireland, and Portugal), in a total of 2856 participants. BMI ranged between 14.13 and 53.34 kg/m^2 ($M = 22.55$, $SD = 3.70$) and the global prevalence of underweight, normal weight, and OW/OB in these countries was 7.6% ($n = 216$), 72.1% ($n = 2060$), and 20.3% ($n = 580$), respectively. Weight category distribution by country is reported in Table 4.

Table 4
Body Mass Index and Weight Category According to Country

Country	*M* (*SD*)	UW		NW		OW		OB	
		n	%	*n*	%	*n*	%	*n*	%
Bosnia-Herzegovina	21.93 (1.69)	23	6.9	258	78.0	48	14.5	2	0.6
Croatia	23.15 (3.60)	18	4.4	279	67.9	99	24.1	15	3.6
Greece	22.56 (3.81)	113	8.3	973	71.1	216	15.8	65	4.8
Ireland	23.82 (5.27)	2	2.7	52	69.3	16	21.3	5	6.7
Portugal	22.33 (3.68)	60	8.9	498	74.1	86	12.8	28	4.2
Total		216		2060		465		115	

Note. UW = underweight (< 18.5 kg/m^2); NW = normal weight (18.5–24.9 kg/m^2); OW = overweight (25.0–29.9 kg/m^2); OB = obesity (≥ 30.0 kg/m^2).

2. Group differences in positive body image and associations between variables

Group differences in the BAS-2 were explored in relation to gender, weight category, level of education, and country. Significant differences between male and female participants were found, $t(3660) = 4.74$, $p < .001$, $d = 0.18$, with males ($M = 3.76$, $SD = 0.76$), demonstrating higher body appreciation than females ($M = 3.62$, $SD = 0.76$). The BAS-2's mean score was also higher in normal weight participants ($M = 3.77$, $SD = 0.71$) when compared to the OW/OB group ($M = 3.37$, $SD = 0.81$), $t(839) = 10.49$, $p < .001$, $\Delta = 0.49$. There were no BAS-2's mean differences between study levels, $F(2, 3565) = 2.58$, $p = .08$, $\eta^2 = .001$. Conversely, Welch's ANOVA revealed that positive body image differed significantly between countries, $F(7, 752) = 21.31$, $p < .001$, $\omega^2 = .04$ (see Table 5), however, these differences were of small magnitude. Additionally, Bosnia-Herzegovina ($M = 3.93$, $SD = 0.70$) and Ireland ($M = 3.16$, $SD = 0.81$) evidenced the highest and lowest body appreciation, respectively.

Table 5
BAS-2 Scores According to Country

B&H	BE	CR	FI	GR	IR	IS	PT			
M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	F	ω^2	Post-hoc
3.93 (0.70)	3.48 (0.65)	3.74 (0.76)	3.40 (0.74)	3.68 (0.72)	3.16 (0.81)	3.81 (0.85)	3.61 (0.78)	21.31*	.04	B&H > CR, GR > BE, IR, FI; BE, CR, GR > IR; IL > PT > FI, IR

Note. B&H = Bosnia-Herzegovina; BE = Belgium; CR = Croatia; FI = Finland; GR = Greece; IR = Ireland; IS = Israel; PT = Portugal.
*$p < .001$.

The correlations between study variables are shown in Table 6. The BAS-2 correlated significantly ($p < .05$) with all variables, despite of different magnitude. The association with self-esteem was high ($r = .68$), but the correlations with academic variables were low (between .17 and .26). The association between the BAS-2 and BMI was low and negative ($r = -.25$).

Table 6
Correlation Between BAS-2, SRSP, CAS-R/Educational, RSES, BMI, and Age

Measure	1	2	3	4	5	6

1. BAS-2					
2. SRSP	.26**				
3. CAS-R/Educational	.17**	.28**			
4. RSES	.68**	.40**	.25**		
5. BMI	−.25**	−.08**	−.01	−.07**	
6. Age	.05*	.12**	−.03	.07**	.10**

Note. BAS-2 – Body Appreciation Scale-2; SRSP – Self-Reported Study Performance; CAS-R/Educational – Educational Aspiration subscale of the Career Aspiration Scale-Revised; RSES – Rosenberg Self-Esteem Scale; BMI = body mass index.
*$p < .01$. **$p < .001$.

Hierarchical regression analysis was performed to evaluate the relationship between positive body image and self-esteem, when adjusting for age, gender, and BMI. The final model was significant (see Table 7). Positive body image significantly predicted self-esteem, above and beyond age, gender, and BMI. R^2 change from Step 1 to Step 2 was significant, $\Delta R^2 = .45$, $p < .001$. The BAS-2 is the most important predictor, which uniquely explained 45.0% of the variance in RSES scores.

Table 7
Hierarchical Multiple Regression for Variables Predicting Self-Esteem

| Predictor	*B*	*SE*	β	*t*	*F*	R^2	ΔR^2
Step 1					24.57**	.03	.03
Age	0.01	0.00	.07**	3.68*			
Gender	−0.15	0.03	−.12**	−6.34**			
BMI	−0.02	0.00	−.11**	−5.53**			
Step 2					635.28**	.47	.45
Age	0.01	0.00	.03*	2.04*			
Gender	−0.03	0.02	−.03	−1.84			
BMI	0.01	0.00	.09**	6.27**			
Positive body image	0.53	0.01	.70**	49.04**			

Note. BMI = body mass index.
*$p < .05$. **$p < .001$.

3. Tests of the mediation models

Two mediation models were tested considering the academic achievement (Model 1; Figure 1) and educational/career aspirations (Model 2; Figure 2) separately.
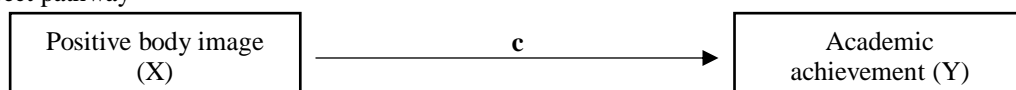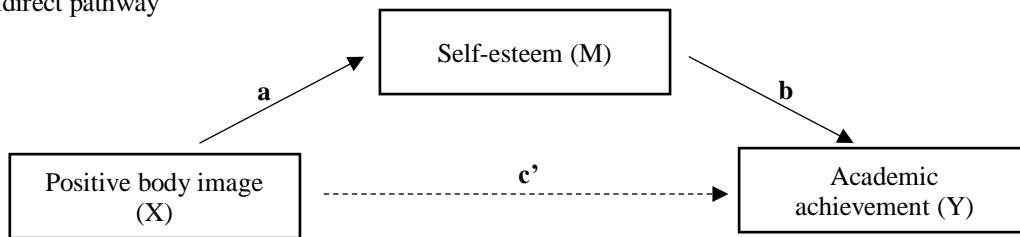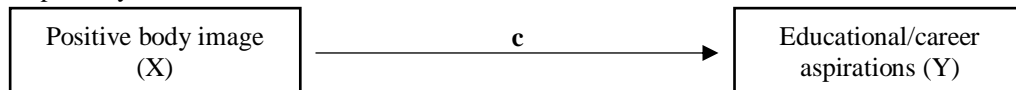
(a) Direct pathway

Figure 1. Conceptual diagram of the mediation model for academic achievement (Model 1); X = predictor variable; M = mediator; Y = outcome variable; a = direct effect of positive body image on self-esteem; b = direct effect of self-esteem on academic achievement; c = total effect of positive body image on academic achievement; c' = direct effect of positive body image on academic achievement, after the mediator (self-esteem) was included; ab = indirect effect of positive body image on academic achievement through self-esteem. Adapted from Preacher and Hayes (2004).
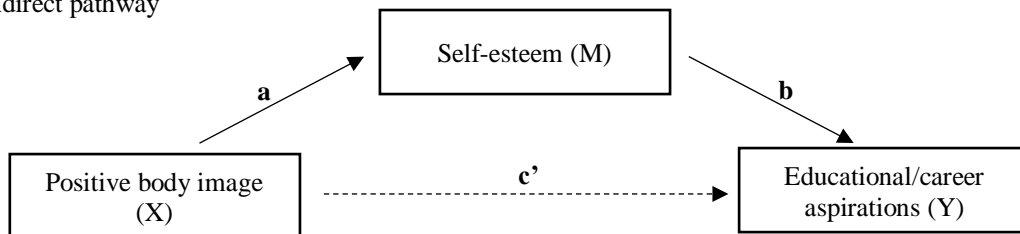
(a) Direct pathway

(b) Indirect pathway

Figure 2. Conceptual diagram of the mediation model for educational/career aspirations (Model 2); X = predictor variable; M = mediator; Y = outcome variable; a = direct effect of positive body image on self-esteem; b = direct effect of self-esteem on educational/career aspirations; c = total effect of positive body image on educational/career aspirations; c' = direct effect of positive body image on educational/career aspirations, after the mediator (self-esteem) was included; ab = indirect effect of positive body image on educational/career aspirations through self-esteem. Adapted from Preacher and Hayes (2004).

Mediation analyses revealed that, together, positive body image and self-esteem were significant predictors of academic achievement, $R^2 = .16$, $F(2, 3340) = 316.85$, $p < .001$ (Table 7), and educational/career aspirations, $R^2 = .07$, $F(2, 3184) = 111.35$, $p < .001$ (Table 8).

In Model 1, positive body image had a medium range (Cohen, 1988) total effect on academic achievement, $B = 0.24$, $t(3341) = 15.43$, $p < .001$, and a significant effect on self-esteem, $B = 0.52$, $t(3341) = 53.74$, $p < .001$. On the other hand, self-esteem was positively related to academic achievement, $B = 0.50$, $t(3340) = 19.22$, $p < .001$. In addition, the analyses showed that the direct effect of positive body image on academic achievement

became non-significant, $B = -0.02$, $t(3340) = -1.18$, $p = .24$, when self-esteem was added to the model, thus suggesting full mediation. Therefore, results confirmed the mediation role of self-esteem in the relation between positive body image and academic achievement, $ab = 0.26$, 95% CI [0.23, 0.29].

Table 8
Predictors of Academic Achievement

				95% CI	
Model	B	SE	β	*LL*	*UL*
Model without mediator					
Intercept	2.75*	0.06		2.64	2.86
PBI → AA (path c)	0.24*	0.02	.26	0.21	0.27
$R^2_{Y,X}$	0.07				
Model with mediator					
PBI → SE (path a)	0.52*	0.01	.68	0.50	0.54
SE → AA (path b)	0.50*	0.03	.42	0.45	0.55
PBI → AA (path c')	–0.02	0.02	–.03	–0.06	0.02
Indirect effect (path ab)	0.26*		.28	0.23	0.29
$R^2_{M,X}$	0.46				
$R^2_{Y,MX}$	0.16				

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit; B = unstandardized coefficient; PBI = positive body image; AA = academic achievement; SE = self-esteem; $R^2_{Y,X}$ = proportion of variance in Y (academic achievement) explained by X (positive body image); $R^2_{M,X}$ = proportion of variance in M (self-esteem) explained by X; $R^2_{YM,X}$ = proportion of variance in Y explained by X and M.
*$p < .001$.

In Model 2, a medium total effect of positive body image on educational/career aspirations was found, $B = 0.21$, $t(3185) = 10.92$, $p < .001$. Positive body image had a significant effect on self-esteem as well, $B = 0.52$, $t(3185) = 52.16$, $p < .001$. In turn, self-esteem evidenced a significant impact on educational/career aspirations, $B = 0.33$, $t(3184) = 9.98$, $p < .001$. Conversely, the direct effect of positive body image on educational/career aspirations, when self-esteem was included, was no longer significant, $B = 0.03$, $t(3184) = 1.37$, $p = .17$. This indicated a full mediation of self-esteem on the relationship between positive body image and educational/career aspirations, since the significance of the indirect effect of positive body image via self-esteem was confirmed, $ab = 0.17$, 95% CI [0.13, 0.21].

Table 9
Predictors of Educational/Career Aspirations

				95% CI	
Model	B	SE	β	*LL*	*UL*
Model without mediator					
Intercept	2.03*	0.07		1.89	2.17
PBI → CA (path c)	0.21*	0.02	.19	0.17	0.24
$R^2_{Y,X}$	0.04				

Model with mediator					
PBI → SE (path a)	0.52*	0.01	.68	0.50	0.54
SE → CA (path b)	0.33*	0.03	.23	0.27	0.39
PBI → CA (path c')	0.03	0.03	.03	–0.02	0.08
Indirect effect (path ab)	0.17*		.16	0.14	0.20
$R^2_{M,X}$	0.46				
$R^2_{Y,MX}$	0.07				

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *B* = unstandardized coefficient; PBI = positive body image; CA = educational/career aspirations; SE = self-esteem; $R^2_{Y,X}$ = proportion of variance in Y (educational/career aspirations) explained by X (positive body image); $R^2_{M,X}$ = proportion of variance in M (self-esteem) explained by X; $R^2_{YM,X}$ = proportion of variance in Y explained by X and M.
*$p < .001$.

Discussion

The present study aimed to examine the relationship between positive body image and academic achievement and educational aspirations in university students, and to clarify previous results regarding positive body image differences according to gender and weight status.

We observed a higher positive body image in male students, as documented in other studies (e.g., Ansari, Clausen, Mabhala, & Stock, 2010; Jovic, Sforza, Jovanovic, & Jovic, 2017; Tylka & Wood-Barcalow, 2015a). Women tend to have a high beauty ideal internalization and are culturally more pressured to reach a thin body; they are also more likely to compare themselves with other women (Fardouly et al., 2017; Medeiros et al., 2018), which can foster body dissatisfaction. On the other hand, there seems to exist greater flexibility regarding men's ideal body stereotype in Western culture, resulting in less social pressure to achieve a specific physical appearance (Buote, Wilson, Strahan, Gazzola, & Papps, 2011). However, the magnitude of this difference was small, which suggests that women's and men's levels of body appreciation become more similar in this stage of life, contrary to what is observed in adolescence (Lemoine et al., 2018). Body appreciation in young adults can be less dependent on social pressures. The divergent results that have been found in this research topic may be due to the overvaluation of the p-value. With a sufficiently large sample, a statistical test will almost always demonstrate a significant difference. Very small differences, even if significant, are often meaningless. For this reason, the effect size should be considered in order to understand the magnitude of the differences found (Sullivan & Feinn, 2012).

In regard to weight condition, we found that OW/OB participants had a lower level of positive body image than normal weight participants. This finding is supported by the negative association between BMI and body satisfaction documented in the literature (Alleva et al., 2016; Gestsdottir et al., 2018; Tylka & Wood-Barcalow, 2015a). However, the small effect size of the group differences, together with the low magnitude of the relationship between the BAS-2 and BMI, suggest positive body image is not simply a polar opposite of body dissatisfaction. In fact, they have been defined as distinct concepts. This construct also involves the ability to relate to one's body in an accepting and loving manner (Tylka & Wood-Barcalow, 2015a).

Interestingly, positive body image did not differ among study levels. Contrary to this finding, Elsherif and Abdelraof (2018) found higher levels of body dissatisfaction in first-year university students, compared to the fourth-year. Costa, Araújo, Diniz, and Almeida (2014) argued that identity construction in emerging adulthood happens in the first two years of college, making the students more sensitive to body image representations. This finding is not supported by our study. According to our data, there are not significant changes in positive body image during this developmental period.

Although differences between countries were found, they were of small magnitude. Similarly, Lemoine et al. (2018) found marginal differences between three European countries as well as a small effect size. Therefore, we can assume that European countries, with similar cultural background, demonstrate relatively identical levels of body appreciation, even though more research is needed to draw solid conclusions.

As hypothesized, positive body image was associated with higher scores in both academic dimensions. Academic achievement and educational/career aspirations were interwoven as well, as supported by Miles (2009), who describes a positive association between academic achievement and intentions to attain an advanced education.

Although scarce, research on this topic suggests that body image exerts influence on academic performance, considering that body dissatisfaction appears to create negative feelings about one's capabilities (Fortman, 2006). Students who report more appearance concerns tend to get lower grades, and those who spend a great amount of time feeling anxious about their appearance tend to underestimate their confidence in achievement and intellectual performance (Halliwell et al., 2014). This seems to indicate that body image experience has meaningful repercussions on academic success (Tallat et al., 2017). On the other hand, students with higher GPAs report focusing less on their appearance (Miles, 2009). Nonetheless, a recent research found that body image concerns were greater in university students with higher grades and that positive body image was not significantly related to students' GPAs (Mendes & Medeiros, 2019). It should be noted that the association between positive body image and academic achievement found in our study was of low magnitude. It is possible that the link between these variables could be moderated by personal and contextual factors, such as self-efficacy and locus of control (Veiga, Galvão, Festas, & Taveira, 2012).

This conclusion can be extended to findings on educational aspirations. Here, we also found a positive and low relationship with positive body image, in agreement with Woodrow-Keys' (2006) observation that women with body satisfaction and positive

appearance evaluation are more likely to engage in career planning. Likewise, negative feelings regarding body image seem to be less frequent when students are focused on career planning (Mendes et al., 2018). But opposite findings do also exist. Miles (2009) found that undergraduate females who aspire further education showed more appearance concerns. Thus, the next step in this area of research should encompass the exploration of potential moderators.

The mediation models tested in this study were based on theoretical hypotheses raised in the literature. When focusing on the possible effect of self-esteem on the relationship between positive body image and the academic areas, our results were consistent with previous studies that supported a positive association between positive body image and self-esteem (Alleva et al., 2016; Atari, 2016; Swami et al., 2017). Nowadays, people tend to be more and more judged by the way they look, and this objectification may lead to a self-evaluation mainly based on physical appearance. Since social appearance standards are generally unreachable, negative feelings about one's body are likely to appear, which in turn can affect self-esteem (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). However, if one experiences positive body image, they will be able to reject or reformulate negative messages regarding their body, and will also feel greater body acceptance and inner positivity. Instead of evaluating themselves based on their appearance and social body ideals, individuals may pay attention to other aspects, such as their body functionality, resulting in higher levels of self-esteem (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010).

As expected, self-esteem proved to mediate the impact of positive body image on both academic achievement and educational/career aspirations. Although some studies did not find a relation between self-esteem and academic outcomes (e.g., Javed, 2018), others have highlighted a strong positive association between them (Arshad et al., 2015; Correlating, 2018; Duraku & Hoxha, 2018), given that it affects motivation to succeed, thus creating behaviors that promote better outcomes (Gupta, 2012). This connection between positive body image and the academic domain through self-esteem can be clarified by the hypothesis that high levels of self-esteem help to develop coping skills, confidence, and feelings of worthiness (Priyadharshini & Relton, 2014) which, in turn, may affect several areas of living, including the academic one.

It is important to mention that the study design does not allow for detection of a causal pathway between positive body image and the academic domain. For this reason, alternative interpretations are also conceivable, including the possibility of academic achievement and educational aspirations facilitating the increase of positive body image (Miles, 2009). The

causal relationship between body image and self-esteem is not also established (Abamara & Solomon, 2014). Thus, longitudinal studies are of major interest to validate the theoretical models explored in this study.

To our knowledge, this was the first study analyzing the link between positive body image and academic achievement and educational/career aspirations, emphasizing the relevance of self-esteem—considered as a variable that helps subjects to focus more on aspects such as internal strength and skills, and less on looks and appearance (Brannan & Petrie, 2011). Another strength of this study was its cross-national design, allowing the comparison between countries. Additionally, it included male participants, which have been excluded in most of the previous studies. We have also focused on university students, differently to past research that has been mostly developed in children and adolescents. Altogether, these methodological characteristics enable the exploration of divergencies found in the literature, including BMI and gender, for example.

Nevertheless, there are some limitations that must be acknowledged. First, our sample consisted mainly of female participants; thus, caution is required when interpreting gender differences denoted in this study. Second, BMI was calculated based on self-report, which can be an underestimation of measured-based BMI. In addition, weight and height data were not available for all countries and underweight students could not be included either (due to sample size imbalance), which restricts the analyses. Future studies should explore if there are different patterns of associations between variables according to weight categories.

Therefore, further research in positive body image should be conducted in more gender-balanced samples, in order to clarify possible distinctions/similarities between them. It is critical to expand the knowledge on the connection between positive body image and the academic dimensions, particularly career aspirations, given that research is only focused on educational aspirations. In particular, dimensions other than educational aspirations (e.g., leadership aspirations, achievement aspirations) ought to be studied in the scope of career aspirations domain. Lastly, future studies should include other measures of positive body image other than body appreciation, targeting other facets such as body image flexibility, body functionality, and inner positivity. They should also control for the effect of possible moderators in the relationship between positive body image and academic domain, such as socioeconomic status, as, per hypothesis, they could be on the basis of country differences in the BAS-2.

In conclusion, our results yielded considerable evidence supporting the role of positive body image and self-esteem in academic and vocational outcomes. Exploring the link

between these domains might motivate schools to address issues regarding this topic and to engage in preventive strategies to promote positive body image and self-esteem, creating an environment favorable to higher achievements. Additionally, it could help parents understand the necessity of contributing to the development of positive body image by meeting their children emotional and intellectual needs and therefore aiding in the growth of a healthy body image (Gupta, 2012; Miles, 2009). Creating positive body image-oriented school programs, which educate students about a realistic body image, may encourage the engagement in health behaviors (Frisén & Holmqvist, 2010; Wood-Barcalow et al., 2010), improving physical and psychological well-being (Tiggemann, 2015).

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