

1 Exploring the effect of external shame on body appreciation among
2 Portuguese young adults:
3 The role of self-compassion
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8 Joana Marta-Simões, M.S.*

9 Cláudia Ferreira, M.S., Ph.D.

10 Ana Laura Mendes, M.S.
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16 CINEICC – Cognitive - Behavioral Research Centre
17 University of Coimbra, Portugal
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24 * Correspondence concerning this article should be addressed to:

25 Joana Marta-Simões

26 CINEICC, Faculty of Psychology and Educational Sciences,

27 University of Coimbra

28 Rua do Colégio Novo, Apartado 6153

29 3001-802 Coimbra, Portugal

30 E-mail: mjoana.gms@gmail.com

31 Telephone: (+351) 239851450

32 Fax: (+351) 23985146

1 **Abstract**

2 Studies on body image-related disturbances have recently embraced a fresh and
3 innovative construct: body appreciation. Body appreciation, an aspect of positive body
4 image, defines as the detention of a balanced, affectionate and health-conscious
5 relationship with one's own body's features. Its exploration is considered to be essential
6 to the success of upcoming prevention and intervention programs in the area of body
7 image and eating disorders.

8 The role of shame, although widely studied in negative body image and eating
9 psychopathology, is yet unknown regarding body appreciation. In this line, a main goal
10 of this study was to explore the effect of external shame on body appreciation in a
11 sample of Portuguese young adults. Also, taking into account the similarities between
12 body appreciation and self-compassion, and since self-compassion is known as a
13 powerful tool against the impact of shame on body image-related disturbances, this
14 study also intended to test the role of self-compassion in the relationship between
15 external shame and body appreciation.

16 Results revealed body mass index and external shame as negative correlates, and
17 self-compassion as a positive correlate of body appreciation. Also, path analysis
18 showed that external shame holds a significant effect on body appreciation, both
19 directly and indirectly. Specifically, this analysis revealed that self-compassion acts as a
20 mediator between shame and body appreciation.

21 Present findings seem to support the pertinence of programs to promote an
22 affectionate and healthy relationship with one's own body image, which may benefit
23 from the target of shame and the inclusion of self-compassion practices.

24

25 **Highlights**

- 26 • Correlates of body appreciation were explored
- 27 • A negative association was found between external shame and body appreciation
- 28 • External shame impacts directly and indirectly on body appreciation
- 29 • Self-compassion significantly mediates shame's effect on body appreciation
- 30 • Novel and integrative model explained 49% of body appreciation

31

32 **Keywords**

33 External shame; body appreciation; self-compassion; young adults.

1 **1. Introduction**

2 It is unquestionable that research on body image has a rich history, of almost one
3 hundred years (e.g., Cash, 2004). Over time, scientific research has gathered valuable
4 knowledge on body image correlates, predictors and consequences, being almost
5 entirely focused on pathology, i.e., mostly designed to understand negative body image
6 (Smolak & Cash, 2011; Tylka, 2012). This approach to body image, although allowing
7 the creation of successful therapeutic methods to alleviate symptoms of negative body
8 image (Smolak & Cash, 2011), may have led to the neglect of the study of ways to
9 promote positive body image, and thus have compromised the development of more
10 effective body image-related prevention and treatment programs (Tylka & Wood-
11 Barcalow, 2015b). In this line, current approaches recommend a greater investment on
12 adaptive and healthy body image, as being vital to upcoming research on the field
13 (Smolak & Cash, 2011). This investment may be crucial to the prevention and
14 therapeutic of body image disturbances, helping healthy individuals and patients to
15 respect, enjoy, and honor their bodies, which may largely contribute to the effectiveness
16 and maintenance of therapeutic gains (Smolak & Cash, 2011; Tylka & Wood-Barcalow,
17 2015b).

18 Positive body image, an emergent and innovative construct, is indeed distinct
19 from negative body image (Tylka & Wood-Barcalow, 2015b). Body appreciation, an
20 aspect of positive body image, does not correspond to the contrary of body image
21 dissatisfaction (Tylka & Wood-Barcalow, 2015b). Instead, body appreciation implicates
22 an attitude of acceptance, love and protection toward all body's features, functionality
23 and health (Avalos et. al., 2005), regardless of the experience of a certain and normative
24 degree of body dissatisfaction (Tylka & Wood-Barcalow, 2015b). Moreover,
25 encouraging body appreciation implicates an adaptive investment in appearance, that is
26 the systematic engagement in self-care behaviors, which enriches one's natural features,
27 without being moved by the need to comply with external standards of beauty, or
28 threatening one's balance and health (Cook-Cottone, 2015; Tylka & Wood-Barcalow,
29 2015b). This adaptive and holistic relationship with the body also includes the rejection
30 of societally prescribed malign ideals of beauty, and thus the capacity of filtering
31 information in a body protective manner (Tylka & Wood-Barcalow, 2015b; Wood-
32 Barcalow, Tylka, & Augustus-Horvath, 2010).

1 Shame is a very powerful self-conscious emotion which emerges from the
2 experience of being seen by others as flawed, inferior, inadequate, or powerless (e.g.,
3 Tangney & Dearing, 2002). This socially contextualized emotion is defined as external
4 shame, that is the unsafe perception that others view one's own inner self and outer
5 body's features as negative, which may lead to being ignored, criticized or rejected by
6 others (e.g., Goss, Gilbert, & Allan, 1994). According to Gilbert (2002), these negative
7 evaluations about how one thinks others see the self can be internalized. In this line,
8 internal shame refers to when feelings and negative judgments become self-directed,
9 i.e., when one starts to view oneself in a devaluing manner. Although shame is a
10 universal experience which holds a relevant defensive function due to its capacity of
11 signaling interpersonal danger (e.g., the possibility that others perceive one's own
12 unattractiveness, powerlessness and undesirableness; Gilbert, 2003), experiencing high
13 levels of shame has been associated with different mental health conditions, namely
14 eating disorders (Goss & Gilbert, 2002; Pinto-Gouveia, Ferreira, & Duarte, 2014;
15 Troop, & Redshaw, 2012). Indeed, although shame experiences are not necessarily
16 related to body image, this emotion has been regarded as central in eating
17 psychopathology (Gee & Troop, 2003; Mustapic, Marcinko, & Vargek, 2015).
18 Regarding the association of shame with positive body image variables, namely body
19 appreciation, a recent study showed that feelings of inferiority in social comparisons
20 and low appearance-related self-worth are associated with lower body appreciation
21 (Homan & Tylka, 2015). In fact, these feelings of inferiority and low self-worth can be
22 conceptualized as internal shame domains (i.e., the translation of a negative self-
23 evaluative style, and of the presence of feelings of inferiority and devaluation; Gilbert,
24 2002). Nevertheless, external shame is yet unexplored in association with body
25 appreciation.

26 The association between self-compassion and positive body image dates back to
27 one of the roots of positive body image, Buddhism (Tylka & Wood-Barcalow, 2015b).
28 This Asian philosophy highlights the role of mindfulness abilities when dealing with
29 internal experiences, and is thought to be related with an appreciative and balanced
30 relationship with one's own body via psychological flexibility (Hayes et al., 1999) and
31 self-compassion (Neff, 2003). Specifically, self-compassion not only supports the
32 practice of mindful attitudes toward internal experiences, but also the capability of
33 being kind to oneself in times of suffering, and perceive pain as a common experience

1 shared among the human condition (Neff, 2003). Thus, as positive body image and its
2 body appreciation aspect can be regarded as the detention of a compassionate attitude
3 towards one's own body image (i.e., the ability to be kind and understanding to
4 perceived flaws in appearance, and recognize them as shared by all), and recent research
5 has attempted to associate body appreciation and self-compassion, (Homan & Tylka,
6 2015; Kelly & Stephen, 2016; Marta-Simões et al., 2016; Wasylikiw, MacKinnon, &
7 MacLellan, 2012). Specifically, a recent study by Homan and Tylka (2015) highlighted
8 the emotion regulation role of self-compassion, by reporting that self-compassion acts
9 as an enhancer of body appreciation in the presence of body image-related threats. In
10 addition, Kelly and Miller (2014) have reported that higher levels of self-compassion
11 are associated with a lower impact of body mass index on body image flexibility (Tylka
12 & Wood-Barcalow, 2015b). Although self-compassion is not yet widely studied in
13 relation to positive body image variables, its positive effects on negative body image-
14 related disturbances are widely reported, namely the relationship between higher self-
15 compassion and a lower impact of body image dissatisfaction on the overall well-being
16 and health (Ferreira, Duarte, & Pinto-Gouveia, 2014; Duarte, Ferreira, Trindade, &
17 Pinto-Gouveia, 2015), and also a lower likelihood of being driven by the pursuit of
18 thinness and engaging in disordered eating attitudes and behaviors (Ferreira, Pinto-
19 Gouveia, & Duarte, 2013). Self-compassion has also been referred by several studies as
20 an efficient tool against shame (Ferreira et al., 2013; Gilbert & Procter, 2006; Neff,
21 2011). Specifically, a study by Daye, Webb and Jafari (2014) found that self-
22 compassion can attenuate both body shame and body surveillance.

23 Taking together previous data on the valuable role of cultivating a more
24 appreciative, compassionate and protective relationship with one's own body image
25 (e.g., Wood-Barcalow et al., 2010) and inner self (e.g., Neff, 2003), and also the
26 relevance of investing in the study of mechanisms to promote positive body image, this
27 study intended to reach a greater clarification of this emerging construct by exploring
28 the relationship between body appreciation and central variables in the study of eating
29 psychopathology, namely body mass index, shame and self-compassion. Furthermore,
30 the major aim of this study was to examine the role of self-compassion in the
31 association between external shame and body appreciation. Specifically, we aimed at
32 testing the adequacy of a model which hypothesizes that the tendency to treat oneself
33 kindly, with care, and in a more understanding manner, acts as a mediator of the

1 aforementioned relationship, on a sample of young male and female adults. Although
2 some emotion regulation mechanisms are already explored in relation to body
3 appreciation, specifically self-compassion (Homan & Tylka, 2015; Kelly and Stephen,
4 2016) and body image flexibility (Webb et al., 2014; Webb, 2015), the hypothetical
5 linking role of self-compassion in the association between external shame and body
6 appreciation was yet unexplored. Additionally, the present study aimed at analyzing sex
7 differences on the associations established between the variables in study. For a long
8 time, body image appeared to be more important to women, i.e., women tended to use it
9 more as a preferable dimension to evaluate themselves and others (Goss & Gilbert,
10 2002). However, recent literature has been showing that body image may be either
11 important to men (e.g., Griffiths et al., 2016) and that the prevalence of body image-
12 related disturbances in males is significantly growing (e.g., Strother, Lemberg, Stanford,
13 & Turberville, 2012), which may justify an investment on the study of the correlates of
14 body appreciation among men.

16 **2. Method**

18 **2.1. Participants**

19 The present study comprised 155 participants, 44 males and 111 females.
20 Participants' ages ranged between 18 and 35, with males and females' mean ages
21 presenting significant differences, but of small size effect, as indicated by Cohen's *d*
22 value ($t_{(153)} = 2.20$; $p = .03$; $d = .36$). Specifically, males' mean age ($M = 22.36$; $SD =$
23 3.14) was slightly higher than women's mean age ($M = 21.30$; $SD = 2.54$). The sample
24 presented a mean of years of schooling of 13.69 ($SD = 1.63$), which did not differ
25 significantly between males and females ($t_{(153)} = -.81$; $p = .42$). Concerning body mass
26 index (BMI), participants reported a mean of 22.63 ($SD = 3.57$), which corresponds to a
27 normal-weighted sample (WHO, 1995). Participants' BMI means were different
28 between men ($M = 23.54$; $SD = 3.14$) and women ($M = 22.28$; $SD = 2.99$). Nevertheless,
29 this difference was of small magnitude ($t_{(153)} = 2.30$; $p = .02$; $d = .37$), and reflects the
30 BMI distribution by sex of the Portuguese population (Póinhos et al., 2009).

32 **2.2. Procedure**

1 This study is part of a wider research about body image and mental health in
2 the Portuguese population. In order to achieve a heterogeneous sample in relation to
3 characteristics such as socioeconomic status, sex and level of education, participants
4 were recruited from distinct institutions, namely one private company, one retail service
5 and one higher education institutions. These institutions' review boards provided their
6 approval and were assured that all ethical requirements would be respected by the
7 research team. Participants were fully informed about the study's nature and purposes,
8 namely the voluntary character of their participation and data's confidentiality. After
9 obtaining written informed consent from individuals who agreed to participate, self-
10 report questionnaires were administered in the presence of one of the researchers,
11 during a break authorized by the institutions' boards. Taking into account this study's
12 purpose, i.e., of exploring a theoretical model in a sample of young adults, data was
13 then cleaned to exclude participants older than 35 years old. Also, the cases in which
14 more than 15% of the responses were missing from a questionnaire were excluded from
15 the final sample.

16 17 **2.3. Measures**

18 *Body Mass Index* (BMI). Participants' body mass indexes were calculated by dividing
19 self-reported current weight, in Kilograms, by self-reported height squared, in Meters
20 (Quetelet Index; kg/m^2).

21
22 *Other as Shamer Scale* (OAS; Goss, Gilbert, & Allan, 1994; Matos, Pinto-Gouveia, &
23 Duarte, 2011). The OAS is a self-report measure designed to assess levels of external
24 shame, that is, the way one perceives that others evaluate the self negatively. The scale is
25 composed of 18 items such as "Other people see me as not measuring up to them", rated
26 in a 5-point scale, which ranges from 0 ("never") to 4 ("almost always"). In both the
27 original and the Portuguese studies, the scale showed good reliabilities, with $\alpha = .92$ and
28 $\alpha = .91$, respectively. In the present study, the OAS showed a Cronbach's alpha of .94.

29
30 *Self-compassion Scale* (SCS; Neff, 2003; Costa et al., 2015). The SCS evaluates self-
31 compassion through a positive and a negative component. The positive component
32 gathers self-kindness, common humanity and mindfulness subscales, while the negative
33 component comprises self-judgment, isolation, and over-identification subscales. The

1 26-item self-report scale is rated in a 5-point scale, which ranges from 0 (“Almost
2 never”) to 5 (“Almost always”). SCS has shown good internal reliability, with
3 Cronbach’s alphas of .92 and .89, for the original and the Portuguese versions,
4 respectively. Taking into account the aims of the present study, and empirical support
5 by Phillips and Ferguson (2012) and by Costa and colleagues (2015), the three positive
6 subscales were gathered into a composite measure defined as self-compassion
7 (SCS_SC). The SCS_SC revealed a Cronbach's alpha value of .91.

8
9 *Body Appreciation Scale (BAS-2; Tylka & Wood-Barcalow, 2015a; Marta-Simões et*
10 *al., 2016).* The BAS-2 is an improved version of the BAS, a self-report scale intended to
11 assess positive body image, i.e., the detention of favourable, accepting and respectful
12 attitudes toward one’s own body’s features. This scale comprises 10 items, such as “I
13 respect my body” and “I am attentive to my body’s needs”, and the respondents are
14 asked to indicate whether the question is true about them, using a 5-point scale which
15 ranges from 1 (“never”) to 5 (“always”). The BAS-2 has shown to be a
16 psychometrically sound positive body image measure, with reported Cronbach’s alpha
17 values of .97 and .95, in the original version and the Portuguese validation studies,
18 respectively. BAS-2's Cronbach's alpha value was of .95 in the present study.

19 20 **2.4. Analytic Strategy**

21 Data analyses were conducted using the software IBM SPSS 22.0, and the
22 software Amos 22.0.

23 The sample’s characteristics regarding the studied variables were explored
24 through descriptive statistics (means and standard deviations). In order to explore
25 positive body image’s correlates, product-moment Pearson correlation analyses were
26 conducted to study BAS-2’s associations with body mass index (BMI), external shame
27 (OAS), and self-compassion (SCS_SC).

28 In order to explore assumed structural relations (direct and indirect effects)
29 among variables, a theoretical model was explored through path analysis. Specifically,
30 this model explored whether SCS_SC acted as a mediator of the relationship between
31 BMI and OAS, and BAS-2, while controlling for the effect of age (Figure 1). Taking
32 into account significant differences found between males and females’ mean ages, the
33 variable “age” was included in the path analysis model in order to control its effect. In

1 this line, age, external shame (OAS) and body mass index (BMI) were entered as
2 exogenous variables, self-compassion (SCS_SC) was hypothesized as an endogenous
3 mediator variable, and positive body image (BAS-2) as an endogenous variable.

4 The model's path coefficients' significances were tested, and fit statistic were
5 computed, using the Maximum Likelihood estimation method, with 95% confidence
6 interval. The significance of the direct, indirect and total effects was assessed by Chi-
7 Square tests. In order to test the significance of the mediational paths, the Bootstrap
8 resampling method was used, with 5000 bootstrap samples and 95% confidence
9 intervals (Kline, 2005). Moreover, several goodness-of-fit measures (Chi-Square (χ^2),
10 Normed Chi-Square ($\chi^2/d.f.$), Tucker Lewis Index (TLI), Comparative Fit Index (CFI),
11 and the Root-Mean Square Error of Approximation (RMSEA) assessed the credibility
12 of the overall model, with 95% confidence interval. Finally, using a multigroup
13 invariance analysis, the existence of differences in the final model regarding two groups
14 (male participants and female participants) was tested. Important to note is that although
15 the sample of the present study may be considered of small size, and literature advises
16 caution when conducting studies in relatively small samples (Kline, 2005), the model
17 complexity and the data used followed required assumptions to conduct the analysis.
18 Also, previous simulation studies with samples with comparable sizes (Hair et al. 2010)
19 have proved the estimation technique applied by the authors in the present analyses to
20 present valid and stable results. Furthermore, as the present path analysis model
21 consisted of 18 parameters, and the sample comprised 155 participants, the sample size
22 seems to be adequate, according to recommendations from Bentler and Chou (1987),
23 which suggest the use of a ratio of sample size to the number of free parameters of, at
24 least, of 5 to 1.

25 **3. Results**

26 27 **3.1. Preliminary data analyses**

28 First of all, the suitability of the data for further statistical analyses was tested.
29 The normality of data distribution was confirmed through the analysis of coefficients of
30 Skewness and Kurtosis. Values of Skewness ranged from -0.16 (BAS-2) to 1.84 (Age),
31 and Kurtosis values between -0.40 (BAS-2) and 4.52 (Age), which do not suggest the
32 presence of serious violation of normal distribution, according to Kline (2005).

Furthermore, Variance Inflation Factor (VIF) values ranged between 0.05 (Age) and 1.16 (OAS), which indicates a low probability of multicollinearity issues (Kline, 2005).

3.2. Descriptive statistics

Means and standard deviations are presented in Table 1. Results for this analysis indicate that, while age ($t_{(153)} = 2.20, p = .03; d = .36$) and body mass index ($t_{(153)} = 2.30, p = .02; d = .37$) presented moderate differences between men and women, both sexes did not differ significantly regarding the variables in study, specifically external shame, self-compassion and body appreciation.

Table 1 Means (*M*) and standard deviations (*SD*) using *t*-test for equality of means, on self-report measures (*N* = 155).

	Men (<i>n</i> = 44)		Women (<i>n</i> = 111)		<i>t</i> -test	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Age	22.36	3.14	21.30	2.54	2.20*	0.36
BMI	23.54	3.29	22.28	2.99	2.30*	0.37
OAS	16.64	12.50	19.01	11.90	n.s.	-
SCS_SC	3.28	0.69	3.06	0.69	n.s.	-
BAS-2	3.71	0.78	3.58	0.79	n.s.	-

Note. BMI = Body Mass Index; OAS = Other as Shamer Scale; SCS_SC = Self-compassion positive component of the Self-Compassion Scale; BAS-2 = Body Appreciation Scale – 2.

* $p < 0.050$.

3.3. Correlations

Intercorrelation scores for males and females are presented in Table 2. For male participants, results indicated the presence of a positive and moderate correlation between age and self-compassion. Body appreciation revealed a negative and strong association with external shame, and a positive and strong association with self-compassion.

Regarding female participants, age presented significant associations with body mass index (a positive, yet weak, correlation) and with body appreciation (a negative and weak correlation). Body mass index revealed to be significantly and negatively correlated to body appreciation, with a correlation of moderate magnitude. In relation to body appreciation, a strong and negative association was found with external shame, and a positive association of strong magnitude was revealed with self-compassion.

Table 2 Intercorrelation scores on self-report measures ($N = 155$).

Measures	Age	BMI	OAS	SCS_SC	BAS-2
Age	-	.23*	.13	-.18	-.19*
BMI	.13	-	.10	-.16	-.39***
OAS	-.24	.16	-	-.43***	-.55***
SCS_SC	.33*	.16	-.16	-	.57***
BAS-2	.22	-.24	-.60***	.50***	-

Note. Lower triangle comprises correlations among men ($n = 44$) and upper triangle (in bold) comprises correlations among women ($n = 111$).

BMI = Body Mass Index; OAS = Other as Shamer Scale; SCS_SC = Self-compassion positive component of the Self-Compassion Scale; BAS-2 = Body Appreciation Scale

* $p < 0.050$, *** $p < 0.001$.

3.4. Path Analysis

The theoretical model was firstly tested through a fully saturated initial model consisting of 18 parameters. This model explained 13% of the variance of self-compassion (SCS_SC) and 49% of the variance of body appreciation (BAS-2). Due to the non-significance of one of the paths, that is the direct effect of BMI on SCS_SC ($b_{\text{BMI}} = -.27$; $SE_b = .04$; $Z = -6.76$; $p = .99$), this path was eliminated and the model was readjusted.

Figure 1 represents the readjusted model, which also explained 13% and 49% of SCS_SC and BAS-2' variances, respectively. All path coefficients showed to be statistically significant ($p < .05$), and model fit indices revealed an excellent fit to the

1 empirical data [$\chi^2_{(3)} = .04, p = 1.00, CMIN/df = .01; TLI = 1.08; CFI = 1.00; NFI =$
 2 $1.00; RMSEA = .00, p = 1.00, 95\% CI = .000 \text{ to } .000$].

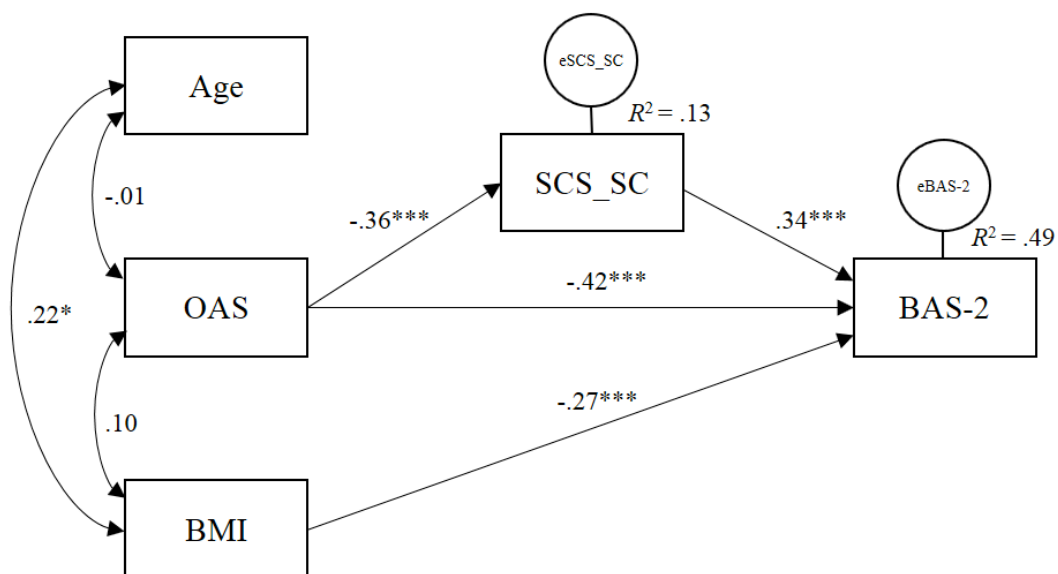
3 Firstly, external shame (OAS) showed direct negative effects on SCS_SC, of -
 4 $.36 (b_{OAS} = -.021 SE_b = .00; Z = -4.74; p < .001)$; and of $-.42$ on body appreciation
 5 (BAS-2; $b_{OAS} = -.27 SE_b = .04; Z = -6.76; p < .001$). Regarding the relationship between
 6 OAS and BAS-2, OAS also showed a negative indirect effect of $-.12$ on BAS-2,
 7 mediated by SCS_SC (95% CI = $-.21 \text{ to } -.06$). Moreover, self-compassion showed to be
 8 directly and positively associated to BAS-2 ($b_{SCS_SC} = 3.87; SE_b = .69; Z = 5.57; p <$
 9 $.001; \beta = 34$), and body mass index revealed a direct negative effect on BAS-2 ($b_{BMI} = -$
 10 $.68; SE_b = .15; Z = -4.77; p < .001; \beta = -.27$). Taking into consideration the high
 11 significance of the presented effects, path analysis' results seem to suggest that,
 12 although there is a powerful direct effect of external shame on body appreciation, this
 13 effect also seems to be mediated by self-compassion, i.e., self-compassion seems to
 14 appear as a mediator between external shame and body appreciation.

15 Finally, a multigroup analysis of the final model was performed in order to test
 16 the model's invariance across two different groups, sample's males and females. This
 17 analysis' results did not show any differences regarding factor weights ($\Delta\chi^2_{(6)} = 8.56; p$
 18 $= .20$), which revealed the model's invariance between the two compared groups.

19

20 **Figure 1** Final path model. Standardized path coefficients amongst variables are
 21 presented.

22



23

1 *Note.* BMI = Body Mass Index; OAS = Other as Shamer Scale; SCS_SC = Self-
2 compassion positive composite of the Self-Compassion Scale; BAS-2 = Body
3 Appreciation Scale – 2.

4 $*p < 0.050$, $***p < 0.001$.

6 **4. Discussion**

7 Building a bridge between external shame and positive body image, this study
8 aimed at exploring body appreciation's positive and negative correlates, and the
9 hypothetical self-compassion's mediational role in the relationship between external
10 shame and body appreciation, used as a measure of positive body image, in a sample of
11 young male and female adults. Moreover, sex differences regarding the relationships
12 between variables and the suitability of a theoretical path analyses model were also
13 explored.

14 Correlation analyses were computed with the intent of exploring body
15 appreciation's correlates. Firstly, since body appreciation presents similarities with and
16 is likely related to the self-compassion construct (Homan & Tylka, 2015; Kelly &
17 Stephen, 2016; Marta-Simões et al., 2016; Tylka & Wood-Barcalow, 2015b; Wasylkiw
18 et al., 2012), we expected that these variables would be significantly and positively
19 correlated. Regarding external shame and body mass index, due to their association with
20 variables such as body image dissatisfaction, drive for thinness and disordered eating
21 behavior (e.g., Duarte et al., 2015; Ferreira et al., 2014; Ferreira et al., 2013), which are
22 somehow antagonistic to the idea of relating positively and healthfully with one's own
23 body image (Avalos et al., 2005; Tylka & Wood-Barcalow, 2015a, 2015b), we expected
24 that body appreciation would correlate significantly and negatively with shame and
25 body mass index. For men participants, correlation results did not follow our
26 expectations, i.e., body appreciation did not associate significantly with self-
27 compassion, as well as with body mass index, although the direction of these
28 associations was the expected. For both men and women, results showed a positive and
29 strong association of body-appreciation with self-compassion, and a negative and strong
30 association between body appreciation and external shame. These results accord closely
31 with background data and with this study's predictions, by highlight the connection
32 between body appreciation and self-compassion (Homan & Tylka, 2015; Kelly &
33 Stephen, 2016; Marta-Simões et al., 2016; Tylka & Wood-Barcalow, 2015b; Wasylkiw

1 et al., 2012), and extend previous literature by exposing the relationship between body
2 appreciation and external shame (Homan & Tylka, 2015).

3 The main aim of the present study was to evaluate if self-compassion could be
4 considered as mediator in the relationship between shame and body appreciation. This
5 hypothesis was made due to the harmful association between the experience of shame
6 and the engagement in body image and eating-related disordered behaviors (Goss &
7 Gilbert, 2002; Pinto-Gouveia, Ferreira, & Duarte, 2014; Troop, & Redshaw, 2012), and
8 also the formerly reported efficacy of self-compassion in the reduction of the malign
9 levels of shame (Daye et al., 2014; Ferreira et al., 2013; Gilbert & Procter, 2006; Neff,
10 2011). In order to evaluate the applicability of such hypothesis, a model in which shame
11 and body mass index were entered as exogenous variables, self-compassion as an
12 endogenous mediator, and positive body image as an endogenous variable, was
13 explored through path analysis. The only path revealed as non-significant was the
14 direct effect of body mass index on self-compassion; nevertheless, this was an expected
15 result, given that, to the extent of our knowledge, there is no stated relationship between
16 body mass index and self-compassion in studies using community samples. Regarding
17 the readjusted model, results revealed both significant direct and indirect effects of
18 shame on body appreciation. Specifically, although external shame holds a significant
19 direct effect on body appreciation, its impact is almost equally powerful at an indirect
20 level, i.e., when mediated by self-compassion. In this line, self-compassion may be seen
21 as an adaptive strategy when facing high levels of shame, i.e., it may be used to
22 successfully prevent negative consequences on the relationship with one's own body
23 image that could emerge from the perception that others see the self as inferior and
24 inadequate. This particular finding is in line with previous research which highlighted
25 self-compassion as an effective mechanism against shame and body image
26 dissatisfaction (e.g., Ferreira et al., 2013), and as an enhancer of body appreciation
27 (Homan & Tylka, 2015; Kelly & Stephen, 2016). Finally, results indicated that the
28 tested model seems to be adequate for both men and women, i.e., for both sexes higher
29 levels of self-compassion seem to attenuate the impact of high external shame on body
30 appreciation. This finding also appears to underline the relevance of the body image
31 dimension not only for women, but also for men, and that the mechanisms which
32 underlie body appreciation might be alike between both sexes.

1 Although promising, present results should be interpreted while considering
2 some methodological limitations. Firstly, the cross-sectional design limits causal
3 inferences, which makes prospective studies necessary in order to validate the nature
4 and direction of the tested model. Moreover, the sample used in this study can be
5 considered to be of small size, which can compromise the generalization of the obtained
6 data. Nevertheless, although the present data followed required assumptions to conduct
7 the analysis, and similar studies with similar sample sizes have proven to provide valid
8 and stable results (Hair et al., 2010), future studies should use a broader sample.
9 Furthermore, it would be interesting to test clinical samples, namely eating disorders
10 samples. The explored model was designed and limited with the specific purpose of
11 exploring the role of self-compassion on the impact of external shame on body
12 appreciation, nevertheless, body image is a multi-determined complex phenomenon,
13 and other variables may be involved and, therefore, explored in upcoming studies. For
14 instance, the authors consider that it would be important to explore the role of internal
15 shame in this model, therefore upcoming studies could analyze the role of shame in this
16 perspective. Finally, it should be taken into account that a counterbalanced research
17 design was not employed, and that the use of self-report measures may compromise the
18 generalization of the data, which leads to the suggestion of using other research
19 methods in upcoming studies, namely structured interviews.

21 **5. Conclusions**

22 The present study was the first to explore the relationship between external
23 shame and body appreciation, and extended previous literature (Homan & Tylka, 2015;
24 Kelly & Stephen, 2016) by exploring whether cultivating a kind and understanding
25 relationship with one's own self holds an impact on the tendency to appreciate, care for
26 and protect one's own body image. The effect of external shame on body appreciation
27 was found to be significant at an indirect level, i.e., carried by the mechanisms of self-
28 compassion. Therefore, present findings seem to suggest that self-compassion may act
29 as mediator of the aforementioned relationship, which not only highlights the power of
30 self-compassion against shame, but mostly underlines the potential connection between
31 self-compassion and body appreciation. The present findings appear to offer important
32 research and intervention implications. Firstly, findings seem to emphasize the
33 pertinence of exploring self-compassion in a positive perspective in future

1 investigations (i.e., as a health-promoting tool) and not only as a mechanism to deal
2 with adversity, and also appear to support the relevancy of targeting shame and self-
3 compassion when developing prevention programs of body image-related disorders, and
4 community programs to promote a compassionate and positive relationship with one's
5 body image and self.

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9 10 **Contributors**

11 Authors 1 and 2 designed the study, conducted the statistical analysis and wrote the
12 protocol. Author 1 and 3 conducted literature searches and provided summaries of
13 previous research. Author 1 wrote the first draft of the manuscript and all authors
14 contributed to and have approved the final manuscript.

15 16 **Conflict of interest**

17 All authors declare that they have no conflicts of interest.

18 19 **6. References**

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