

Original Article

An Assessment of the Relationship between Body Appreciation and Obsessive-Compulsive Symptoms: A Cross-Sectional Study

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Abstract

Introduction: Positive body image influences people in multitude of ways, both in an inner level and in their interpersonal relationships. Very few studies have examined the relationship between positive body image and obsessive-compulsive symptoms in the general population.

Methods: A cross-sectional study was conducted with a sample of 287 individuals (n=287) from Greece's general population. A composite questionnaire was used, including: demographic information, the questionnaire of Body Appreciation Scale (BAS) and the Obsessive Compulsive Inventory-Revised (OCI-R). The statistical program SPSS 21.0 was used for data analysis.

Results: The sample's mean age was 31.94 years, while 36.9 % were men and 63.1 % women. The mean Body Mass Index (BMI) was 23.75. The mean total score of BAS questionnaire was 49.21 and of OCI-R was 23.22. The BAS score of "non-obsessive- compulsive" participants was significantly higher than the one of "obsessive-compulsive". Significant negative correlations were found between body appreciation (BAS) and OCI-R (and OCI-R subscales). The strongest negative correlation was observed between BAS and the subscale Obsession ($r=-0.314$, $p<0.05$), while the weakest negative correlation was observed between BAS and the subscale Checking ($r=-0.162$, $p<0.05$). There was no statistically significant correlation between BAS and the rest OCI-R subscales (Washing, Mental Neutralizing, Ordering). People with higher body appreciation show less obsessive-compulsive symptoms. On the contrary, individuals with obsessive-compulsive characteristics have a less positive body image. In addition, a statistically significant negative correlation was found between BAS and BMI, ($r=-0.232$, $p<0.01$), which shows that increased body weight is related to low body appreciation.

Discussion: Body appreciation is negatively correlated to the presence of obsessive-compulsive symptoms in the general population. More specifically, body appreciation is negatively correlated to Obsession, Hoarding and Checking symptoms.

Conclusion: The development of positive body image can contribute to reduction of some obsessive-compulsive symptoms and to improve an individual's well-being. Future research is suggested, so that further clarification of the study's results to be possible.

Key-words: Body image, body appreciation, positive body image, obsessive-compulsive symptoms, obsession

Introduction

Obsessive-compulsive disorder (OCD) is often the anxiety disorder that affects approximately 2% of the population. This disorder is associated with significant morbidity and dysfunction, and is included in the World Health Organization list of the ten most disabling medical illnesses (Tzavellas, Karaiskos, Ilias et al., 2014). It usually arises in late adolescence or early adulthood and, if left untreated, has a chronic course (Abramowitz, Taylor & McKay, 2009).

Obsessions are recurrent ideas, thoughts, images or impulses which provoke intense subjective discomfort. Afflicted individuals resist them at first, usually by engaging in some repetitive thoughts or actions designed to reduce the level of discomfort provoked by the obsessions. Rituals take the form of washing or cleaning to remove contamination, checking to verify that no damage has occurred, putting things in precise order, repeating actions to prevent some disaster from occurring, hoarding or saving things to retain important information, as well as various types of mental rituals such as praying, repeating thoughts and counting (Steketee & Lam, 1993).

In modern society external appearance is a factor that influences individuals in different aspects of their lives, both on intrapersonal and interpersonal levels. Different behaviours reflect a positive or a negative body image.

It is useful to view body image as a continuum, ranging from no body image disturbance to extreme body image disturbance. Unfortunately, most people experience mild to moderate body image dissatisfaction (Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999). Negative body image is expressed in one or more of the components of body image and is often characterized by dissatisfaction with appearance and engaging in behaviors such as frequent self-weighing or mirror checking, or avoidance of public situations (Menzel, Krawczyk, & Thompson, 2011). Negative body image can result in adverse psychosocial consequences for both sexes, including disordered eating, depression, social anxiety, impaired sexual functioning, poor self-esteem and diminished quality of life (Cash, Morrow, Hrabosky, & Perry, 2004).

Positive body image is distinct from negative body image and from an absence of body dissatisfaction (Tylka, 2011; Tylka & Wood-Barcalow, 2015; Wood-Barcalow, Tylka & Augustus-Horvath, 2010).

One component of positive body image is body appreciation, which is considered to be a factor that tends to prevent negative for mental health results. It is also connected with positive characteristics, like healthy sexual functionality or the attitude of rejection of plastic surgeries (Satinsky, Reece, Dennis, Sanders & Bardzell, 2012). More specifically, body appreciation refers to four aspects, that are considered to be the elements of positive body image and which are: 1) the favorable perceptions of one's body, 2) the acceptance of the body regardless of its shape, 3) the respect of the body's needs, through the adoption of healthy habits and 4) the body's protection by rejecting the non-realistic image standards which are promoted by mass media (Avalos, Tylka & Wood-Barcalow, 2005).

Research on positive, adaptive or healthy body image is essential to the future of the field (Cash & Smolak, 2011). Although much of the body image literature has traditionally stemmed from understanding negative body image experiences, the positive body image literature is growing (Bailey, Cline & Gammage, 2016).

The correlation of negative body image with obsessive-compulsive disorders has been examined in some studies, extensively concerning its relationship with eating disorders (Thompson, 1990). But on the other hand, only a few studies have looked into the relationship between positive body image—more specifically body appreciation—and presence of obsessive-compulsive symptoms in the general population.

The purpose of this study is to examine the possible existence of a relationship between body appreciation and the presence of obsessive-compulsive symptoms in a non-clinical sample. The focus is concentrated on investigating if body appreciation can predict a healthier and more comfortable status of life, concerning the absence of symptoms and if -on the other hand-low body appreciation is a factor linked to the prevalence of obsessive-compulsive behaviours. Finally, it is examined which particular type of those

behaviours (Checking, Ordering, Hoarding, Mental neutralizing, Obsession, Washing, as represented by the OCI-R subscales) is closer related to a low body appreciation.

Methods

A cross-sectional study was conducted with a sample of 287 individuals ($n=287$), of which 218 (76%) live in Athens and 29 (10.1%) in Thessaloniki, while the rest 40 individuals (13.9%) are residents of various regions of Greece. The duration of the study was four months (April - September 2015). According to the selection criteria, men and women aged 18 - 70 years old were included, with a sufficient mental level, to clearly perceive the questions of the psychometric tools. People with serious mental symptoms, who were unable to complete the questionnaires and individuals who didn't wish to participate voluntarily were excluded from the sample. The basic variables were the body appreciation and the presence of obsessive-compulsive symptoms.

Process: A brief description of the purpose of the study was given to all participants along with instructions for the questionnaire. The participants were administered the questionnaires by personal contact in their environment and they had the chance to ask for further clarifications concerning the questions. All participants took part on a voluntary basis and were not remunerated for their participation. Once participants provided consent, they received the questionnaires, which they completed anonymously and individually.

A composite questionnaire was used, including demographic information, the questionnaire of Body Appreciation Scale (BAS) and the Obsessive Compulsive Inventory- Revised (OCI-R). Participants were asked to provide details about their demographic data (age, sex, place of birth and residence, educational, social and financial status, religiousness) and their weight and height were recorded. The last two items were used in the calculation of participants' BMI (kg/m^2).

Body Appreciation Scale-BAS: The BAS is a 13-item scale that measures aspects of positive body image like favorable opinions of one's own body, acceptance of the body in spite of imperfections, the respect for the body, the protection of the body and the rejection of unrealistic ideals. All items are

rated on a 5-point Likert-type scale (1 = Never, 5 = Always). Item 12 of the scale is gender-specific and there is a different question for men and women (for women: I do not allow unrealistically thin images of women presented in the media to affect my attitudes toward my body, for men: I do not allow unrealistically muscular images of men presented in the media to affect my attitudes toward my body). The addition of all 13 items presents an average of an overall body appreciation score, which ranges from 13 to 65. The higher scores reflect higher body appreciation. Previous work has shown that the BAS has good test-retest reliability and construct and discriminant validity (Avalos et al., 2005). In this study the Greek translation of the scale was used. The Greek version of the questionnaire consists of one factor and has satisfactory reliability (Cronbach's $\alpha=0.87$, test-retest reliability= 0.88) and construct validity (Alexias, Togas & Mellon, 2017, unpublished observations). In the present study Cronbach's α was .89.

Obsessive-Compulsive Inventory-Revised (OCI-R): In order to investigate the presence of obsessive-compulsive symptoms the OCI-R was used, which is especially designed to measure the intensity and the magnitude of the variety of symptoms that characterize the Obsessive-Compulsive Disorder (OCD). The questionnaire demonstrates the symptoms' frequency and the grade of anguish or anxiety they caused during the last month's period, while it contributes at the same time to measure the overall severity of the disorder (Foa, Kozak, Salkovskis et al., 1998). It consists of 18 items, which are divided by three into six subscales: Washing (i.e. "I wash my hands more often and longer than necessary"), Checking (i.e. "I check things more often than necessary"), Mental Neutralizing (i.e. "I frequently get nasty thoughts and have difficulty in getting rid of them"), Ordering (i.e. "I need things to be arranged in a particular order"), Hoarding (i.e. "I collect things I don't need") and Obsession (i.e. "I feel I have to repeat certain numbers"). Each item is scored on a 5-point scale (0-4 points) and the total score is the sum of the scores on all items and it ranges from 0 to 72. Moreover there is a score for each subscale. The higher score indicates more intensive existence of symptoms. According to the

authors (Foa et al.,2002) people with OCD typically have a score of 21 points and higher.

This particular questionnaire is used for the evaluation of obsessive- compulsive symptoms' severity both in clinical samples and in individuals without psychopathological state (Huppert, Walther, Hajcak et al.,2007). The OCI-R was shown to have excellent psychometric properties. In original validation internal consistency was high for the total score and for each subscale (.83-.90). Test-retest reliability was also moderate to high for the total score and all subscales (.57-.91). In terms of validity, the OCI-R was moderately correlated with Yale–Brown Obsessive–Compulsive Scale (Y-BOCS; Goodman et al., 1989) ($r=.53$), Global Obsessive–Compulsive Scale (Goodman & Price, 1992) ($r=.66$) and Hamilton Rating Scale for Depression (Hamilton, 1960) ($r=0.58$) scores and strongly correlated with Maudsley Obsessive–Compulsive Inventory (Hodgson & Rachman,1977) ($r=.85$) and Beck Depression Inventory (Beck, Rush, Shaw & Emery, 1979) ($r=0.70$) scores. These findings support the satisfactory convergent and discriminant validity of the OCI-R (Foa et al.,2002).The Greek translation of the questionnaire was conducted by the professor Robert Mellon (unpublished observations), but its psychometric properties have not been examined in Greek population. In this study Cronbach's α was .92.

Data analysis

The statistical program SPSS 21.0 (Statistical Package for Social Sciences) was used for the analysis of data.The analysis included at first the descriptive results. The percentages of the responses in each category of individuals' characteristics were calculated, corresponding to a nominal scale variable (e.g., gender). Characteristics corresponding to quantitative variables (e.g. age) were presented with the following statistical attributes: Mean, Standard Error of the Mean, Standard Deviation (SD), Median, Variance, Mode, Minimum value (MIN), Maximum value (MAX) and Range.

To control the normality of continuous variables the Kolmogorov-Smirnov test or the Shapiro-Wilk test in case of small samples (<50) was used. In addition, a normality control was done by

graphical representations (Normal Q-Q Plot, Detrended Normal Q-Q Plot, Stem and Leaf Plot).

Before the application of any statistical criterion (e.g. t-test) a checking of its assumptions was performed. Pearson's parametric correlation coefficient (r) was used for the investigation of statistical correlation of quantitative variables between two groups. According to Cohen's suggestions for behavioural sciences: $r=0.10$ indicates weak correlation, $r=0.30$ indicates moderate and $r=0.50$ or higher indicates strong correlation (Cohen, 1988).

Statistically significant differences between two variables were checked by t-test for independent samples, while statistically significant differences between more groups were checked by ANOVA. In cases that it was considered necessary to make all possible specific comparisons between variables, an additional control of multiple comparisons was committed with the methods Bonferroni, Tukey, Scheffe or Tahmane's T2.

The statistical significance (p-value) was set to 5%, so the Confidence Interval (C.I.) was 95%.

Results

The mean age was 31.94 years ($M= 31.94$, $SD= 11.95$ Min: 18, Max: 70, Range: 52). About the half of the participants (50.9%) believe that they belong to middle-low socio-economic status, while a large percentage (40.4%) assumed that they belong to the middle status. A small percentage indicated that they are in the highest (4.5%) or in the lowest (4.2%) socio-economic status. As for the religious level, 41.1% believe that they are "somewhat religious" and 34.8% "fairly religious", while 21.6% declared "not at all religious" and 2.4% "completely religious". Concerning the residence place, 218 participants (76%) live in Athens and 29 (10.1%) in Thessaloniki, while the rest 40 individuals (13.9%) are residents of various regions of Greece. The following chart (Table 1) presents the sample's demographic characteristics.

The mean Body Mass Index (BMI) was 23.75 ($M = 23.75$, $SD = 3.99$, Min: 16.61, Max: 39.06, Range: 22.45). The sample's majority (61.3%) is considered of normal weight. About one in four individuals are considered overweight

(23.6%), while in lower percentages the participants are classified in as obese (9.5%) or underweight (5.6%).

The mean total score of BAS questionnaire was 49.21 (MIN: 25, Max: 65, SD: 8.178, Range: 40) and of OCI-R was 23.23 (MIN: 3 Max: 58 SD: 11.016, Range: 55). Table 2 presents the scores of BAS and OCI-R in relation to the sample's demographics. As it is already mentioned individuals who score >21 at OCI-R are characterized "obsessive-compulsive", while those who score <21 are characterized "non-obsessive-compulsive". The mean BAS score of "non-obsessive-compulsive" participants (M: 50, 99, SD: 7.6) was significantly higher than the "obsessive-compulsive" participants' BAS score (M: 47.52) ($t=3.677$, $df=285$, $p<0.001$). That means that "non-obsessive-compulsive" participants show higher body appreciation and as a result a more positive body image than the "obsessive-compulsive".

As for the body appreciation, the results were:

- The effect of *socio-economic status* in body appreciation (as graded by BAS) was found statistically significant ($F_{3,283}=2.734$, $p=0.044$). After the use of Bonferroni post hoc multiple comparisons test it was found that the mean score of participants who belong in "highest status" (M=47.15) was significantly lower than the "lowest status" mean (M=52.41). The mean difference between the rest of the categories was not statistically significant.
- The effect of *level of education* in body appreciation (as graded by BAS) was found statistically significant ($F_{3,283}=4.285$, $p=0.004$). After the use of Bonferroni post hoc multiple comparisons test it was found that the mean score of participants with "middle school education" (M=51.85) was significantly higher than the score of those who are currently "university students" (M=45.65).
- The effect of *occupation* in body appreciation (as graded by BAS) was found statistically significant ($F_{6,280}=2.764$, $p=0.013$). After the use of Bonferroni post hoc multiple comparisons test it was found that the mean score of participants of category "student" (M=46.39) was significantly

lower than the mean scores of categories "civil servant" (M=52.23) and "free-lancer" (M=51.39).

Concerning the OCI-R questionnaire the following statistical significant results were found:

- The effect of the *level of education* in the presence of obsessive-compulsive symptoms (as graded by OCI-R) was found statistically significant ($F_{5,281}=3.151$, $p=0.009$). After the use of Bonferroni post hoc multiple comparisons test it was found that the mean score of participants with "middle school education" (M=31.71) was significantly higher than the mean score of "postgraduates" (M=18.33).
- The effect of *socio-economic status* in presence of obsessive-compulsive symptoms (as graded by OCI-R) was found statistically significant ($F_{3,283}=4.285$, $p=0.006$). After the use of Bonferroni post hoc multiple comparisons test it was found that the only significant mean score's difference was observed between participants of "lowest status" (M=27) and of "middle status" (M=20.68).
- Additionally, the effect of *religious level* in presence of obsessive-compulsive symptoms body appreciation (as graded by OCI-R) was found statistically significant ($F_{5,281}=5.162$, $p=0.002$). After the use of Bonferroni post hoc multiple comparisons test the only significant mean score difference was observed between the categories "not at all religious" (M=18.919) and "fairly religious" (M=25.69).

Table 3 and 4 present the scores of OCI-R subscales in relation to demographics. In Table 5 are presented the correlations between BAS and OCI-R subscales and in Table 6 the correlation between BMI and BAS and the correlations between BMI and OCI-R subscales.

Negative significant correlations were observed between body appreciation (BAS) and OCI-R (and OCI-R subscales). The strongest negative correlation was observed between BAS and the subscale *Obsession*, while the weakest negative correlation was observed between BAS and the subscale *Checking*. There was no statistically significant correlation between BAS and the rest OCI-R subscales (Washing, Mental Neutralizing, and Ordering). It indicates that people with higher body appreciation present less obsessive-

compulsive symptoms. On the contrary, individuals with obsessive-compulsive characteristics have a less positive body image. In addition, a statistically significant negative correlation was found between BAS and BMI,

which shows that increased body weight is related to lower body appreciation. On the other hand, there was no statistically significant correlation found between OCI-R (and each of the subscales) and BMI.

Table 1. Demographics

	Frequency	Relative Frequency (%)
Gender		
Men	106	36.9 %
Women	181	63.1 %
Occupation		
Student	68	23.7 %
Employee	88	30.7 %
Free Lancer	43	15 %
Civil Servant	34	11.8 %
Unemployed	33	11.5 %
Retired	10	3.5 %
Household	11	3.8 %
Age Group		
18-25	119	41.5 %
26-35	77	26.8 %
36-45	48	16.7 %
46-55	28	9.8 %
56-65	12	4.2 %
>65	3	1 %
Level of Education		
Elementary	6	2.1 %
Middle School	7	2.4 %
High School	69	24 %
University Student	66	23 %
Graduate	112	39 %
Postgraduate	27	9.4 %

Table 2. BAS and OCI-R scores in relation to sample's demographics.

	n	Score BAS	Score OCI-R		n	Score BAS	Score OCI-R
Gender				Age Group			
Men	106	49.74	22.16	18-25	119	48.16	23.75
Women	181	48.9	23.85	26-35	77	49.19	22.22
Total	287	49.21	23.22	36-45	48	51.04	22.54
p		NS	NS	46-55	28	50.14	24.10
Occupation				56-65	12	49.16	27.0
Student	68	46.4	23.94	>65	3	53.33	15.33
Employee	88	49.1	22.73	Total	287	49.21	23.22
Free Lancer	43	51.4	19.67	P		NS	NS
Civil Servant	34	52.24	11.91	Socio-economic status (self-evaluation)			
Unemployed	33	49.64	25.73	Lowest	12	52.42	27
Retired	10	49.2	27.10	Middle- Low	146	48.12	25.12
Household	11	48.36	29.73	Middle	116	50.49	20.68
Total	287	49.21	23.22	Highest	13	47.15	21.08
p		p<0.05	NS	Total	287	49.21	23.22
				p		p<0.05	P<0.01
Level of education				Religious Level			
Elementary	6	49.17	31.5	Not at all religious	62	49.16	18.91
Middle School	7	51.86	31.71	Somewhat religious	118	48.75	23.25
High School	69	50	22.71	Fairly religious	100	49.98	25.69
University Student	66	45.65	25.08	Completely religious	7	46.57	25.71
Graduate	112	50.49	22.65	Total	287	49.21	23.22
Post Graduate	27	49.93	18.33	p		NS	p<0.005
Total	287	49.21	23.22				
P		p<0.005	p<0.01				

NS: No significant

Table 3. Scoring of subscales Checking, Obsession και Hoarding of OCI-R questionnaire in relation to demographics.

	n	Checking	Obsession	Hoarding		n	Checking	Obsession	Hoarding
Gender					Age Group				
Men	106	3.60	4.51	3.99	18-25	119	3.69	5.36	4.52
Women	181	3.83	5.12	4.5	26-35	77	3.63	4.8	3.92
Σύνολο	287	3.75	4.89	4.31	36-45	48	3.7	4.5	4.12
p		NS	NS	NS	46-55	28	3.35	4.32	4.6
Occupation					56-65	12	4.41	4.5	4.66
Student	68	3.69	5.3	4.97	>65	3	1.33	2	5.33
Employee	88	3.71	5.07	3.97	Total		3.75	4.89	4.31
Free Lancer	43	3.76	3.81	3.37	p		NS	p<0.05	NS
Civil Servant	34	3.79	3.76	4	Socio-economic status (self-evaluation)				
Unemployed	33	3.57	6.06	4.57	Lowest	12	4	6.33	4.91
Retired	10	4.9	4.3	5.3	Middle- Low	146	4.08	5.37	4.79
Household	11	3.72	5.72	6	Middle	116	3.29	4.26	3.74
Total		3.75	4.89	4.31	Highest	13	3.84	3.84	3.53
p		NS	NS	p<0.01	Total	287	3.75	4.89	4.31
					p		NS	p<0.01	p<0.01
Level of education					Religious Level				
Elementary	6	4.83	5.5	6.5	Not at all religious	62	3.11	3.98	3.74
Middle School	7	5	6.85	5	Somewhat religious	118	3.66	5.3	4.48
High School	69	3.21	4.31	4	Fairly religious	100	4.21	4.89	4.4
University Student	66	4	5.42	5.16	Completely religious	7	4.28	6.28	5.42
Graduate	112	3.82	4.94	4	Total	287	3.75	4.89	4.31
Post Graduate	27	3.66	4.25	3.7	p		p<0.01	NS	NS
Total	287	3.75	4.89	4.31					
P		NS	NS	NS					

NS:No significant

Table 4. Scoring of subscales Washing, Mental Neutralizing και Ordering of OCI-R questionnaire in relation to demographics.

	N	Washing	Mental Neutralizing	Ordering		n	Washing	Mental Neutralizing	Ordering
Gender					Age Group				
Men	106	2.81	2.26	4.97	18-25	119	3.09	2.1	4.97
Women	181	2.91	1.93	5.52	26-35	77	2.7	2.1	5.05
Total	287	2.87	2.05	5.32	36-45	48	2.64	1.89	5.66
P		NS	NS	NS	46-55	28	2.92	1.75	6.14
Occupation					56-65	12	3.33	2.91	7.16
Student	68	2.79	2.11	5.05	>65	3	0	1.33	5.33
Employee	88	2.9	1.96	5.07	Total		2.87	2.05	5.32
Free Lancer	43	2.27	1.86	4.58	p		NS	NS	p<0.01
Civil Servant	34	2.91	1.76	5.64	Socio-economic status (self-evaluation)				
Unemployed	33	3.36	2.51	5.63	Lowest	12	3.33	3	5.41
Retired	10	2.8	2.7	7.1	Middle- Low	146	3.04	2.15	5.67
Household	11	3.9	2.18	8.18	Middle	116	2.63	1.81	4.92
Total	287	2.87	2.05	5.32	Highest	13	2.69	2.3	4.84
P		NS	NS	p<0.05	Total	287	2.87	2.05	5.32
					p		NS	NS	NS
Level of education					Religious Level				
Elementary	6	3	4	7.66	Not at all religious	62	2.2	1.56	4.3
Middle School	7	5.57	2.57	6.71	Somewhat religious	118	2.66	1.88	5.24
High School	69	3.02	2.33	5.81	Fairly religious	100	3.54	2.55	6.1
University Student	66	2.96	2.15	5.36	Completely religious	7	2.85	2.42	4.42
Graduate	112	2.85	1.91	5.1	Total	287	2.87	2.05	5.32
Post Graduate	27	1.59	1.14	3.96	p		p<0.01	p<0.01	p<0.01
Total	287	2.87	2.05	5.32					
P		NS	NS	p<0.05					

NS:No significant

Table 5. Pearson Correlations

	Score BAS	Sig. (2-tailed)
Score OCI-R.	-0.248	p<0.01
Subscale Checking	-0.162	p<0.05
Subscale Obsession	-0.314	p<0.01
Subscale Hoarding	-0.292	p<0.01
Subscale Washing	-0.059	NS
Subscale Mental Neutralizing	-0.080	NS
Subscale Ordering	-0.040	NS

NS:No significant

Table 6. Pearson Correlations

	Score BMI	Sig. (2-tailed)
Score BAS	-0.232	p<0.01
Score OCI-R.	-0.006	NS
Subscale Checking	-0.024	NS
Subscale Obsession	-0.045	NS
Subscale Hoarding	-0.095	NS

NS: No significant

Discussion

The basic result of the study was that body appreciation is negatively correlated to the presence of obsessive-compulsive symptoms in the general population. Primarily, body appreciation is negatively related to the subscale Obsession and follows the correlation with the subscales Hoarding and Checking. The results reveal that individuals, who show less obsessive-compulsive symptoms, present higher body appreciation. Respectively, people with high body appreciation show less obsessive-compulsive symptoms.

The fact that body appreciation is negatively related to Checking and Obsessions, means that behaviours with obsessive characteristics can be observed among people with low body appreciation. This finding is consistent with other studies, which assume that checking and obsessions regarding the body, are important elements in maintaining a negative body image, where thoughts and behaviours are focused on the

negative perception that people preserve for themselves (Fairburn, Cooper & Shafran, 2003). The results confirm the argument, that body checking is a behavioural expression of a negative body image, which is observed both in anorexia nervosa and in obsessive-compulsive disorders (Halmi, Sunday, Klump et al., 2003). Additionally, the results coincide with previous research data, concerning body checking behaviours which have similarities with obsessive-compulsive characteristics and which are observed in eating disorders, but also in non-clinical samples with negative body image. The repeated checking is a way for individuals to control their emotions, similar to what happens with compulsions in Obsessive-Compulsive Disorder (Lydecker, Cotter & Mazzeo, 2014). Apart from that, increased body weight is also related to lower body appreciation and less positive body image. This particular result is consistent with previous studies, according to which BAS and BMI seem to correlate negatively

(Lobera & Ríos, 2011 ; Swami & Abbasnejad, 2010).

Conclusion

Regarding the extension of the research results in public health and clinical application, the development of positive body image can contribute to reduction of some obsessive-compulsive symptoms and to improve an individual's well-being. Therefore, it is easier for mental health professionals to identify the most vulnerable people and to implement various interventions, in order to improve both one's body image and the treatment of obsessive-compulsive symptoms.

As for the research limitations, it must be highlighted that this is a cross-sectional study and therefore the generalization of the derived conclusions requires special consideration. However, the results concerning the different types of obsessive-compulsive symptoms can provide a descriptive view of the corresponding behaviours and also confirm the hypothesis that a low body appreciation is connected to specific symptoms.

Future research is suggested, so that further investigation and clarification of the study's results to be possible, in order to examine the exact causal relations. It is important to see if low body appreciation is a factor that causes discomfort and contributes to the prevalence of particular obsessive behaviours, or if –on the contrary– individuals that tend to present in general obsessive-compulsive symptoms, increase the possibility of displaying behaviours concerning the body, because of the possible existence of general anxiety or a personality trait. Similar research can be conducted with different study designs (i.e. prospective studies) and with larger sample both from general and clinical populations, in order to support the generalization of the results.

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