

Body dissatisfaction differences and similarities among people with eating disorders, people with gender dysphoria and university students

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Abstract: To subjects with gender dysphoria, body image is an important aspect of their condition. These individuals at times report high body dissatisfaction, similar to individuals with an eating disorder. In total, 61 subjects with gender dysphoria, 30 subjects with an eating disorder, and 40 healthy subjects were evaluated. We parted from the hypothesis that gender dysphoria subjects present more body dissatisfaction than the control group, but less than the eating disorder group. Results regarding body dissatisfaction (related to body beauty ideals) showed significant differences between groups. Subjects with gender dysphoria had higher scores in the body dissatisfaction subscale than the general population, but lower scores than people with eating disorders.

Keywords: Body dissatisfaction; body image; gender identity; eating disorders.

Diferencias y similitudes en la insatisfacción corporal entre personas con trastornos alimentarios, personas con disforia de género y estudiantes universitarios

Resumen: Para las personas con disforia de género, la imagen corporal es un aspecto fundamental en su condición. Éstas a veces manifiestan alta insatisfacción corporal, similar a la que pueden tener personas con trastornos de la conducta alimentaria. En total, 61 personas con disforia de género, 30 personas con trastornos de la conducta alimentaria y 40 personas sanas fueron evaluadas. Como hipótesis se esperaba que los sujetos con disforia de género presentaran mayor insatisfacción corporal que el grupo control, pero menos que el grupo de trastornos de la conducta alimentaria. Los resultados sobre insatisfacción corporal (asociada al ideal de belleza) mostraron diferencias significativas entre los grupos. Las personas con disforia de género tuvieron mayores puntuaciones en insatisfacción corporal que la población general, pero menores puntuaciones que las manifestadas por las personas con trastornos de la conducta alimentaria.

Palabras clave: Insatisfacción corporal; imagen corporal; identidad de género; trastornos de la conducta alimentaria

Introduction

Having a negative body image can be a major challenge for many people. Body image is an important part of total self-concept. Over the past several hundred years, there has been a shift towards the body as part of one's identity not in a purely physical way, but as a means of deeper self-expression (Gauntlett, 2008). Body image

dissatisfaction refers to the discomfort and dissatisfaction that a person feels with their body. It includes assessments of specific body parts or the whole body, that tend to overestimate or distort the body proportions with negative connotations (Baile & Velázquez-Castañeda, 2006). Body dissatisfaction (BD) can range from a disgruntled or negative evaluation of some parts of our body, to an extreme obsession with physical appearance that disrupts normal functioning (Baile, Raich & Garrido, 2003).

For many years body image has been related to social success and mass media helped to disseminate the standards of female and male beauty, often showing unreal bodies. While in the 80's, body image concerns

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were a problem reserved for women, recent studies have expressed an increasing concern for male body image (Bucchianeri, Serrano, Pastula & Corning, 2014; Gomzález-Carrascosa, García-Segovia & Martínez-Monzó, 2013; Guðnadóttir & Garðarsdóttir, 2014). Gender differences, as reported in previous studies (Garaigordobil & Magato, 2013), in terms of content and structure of the body's dimensions, are relevant. Men tend to be more concerned about their body strength. The body parts that men are more concerned about are chest, arms and muscle mass. They desire a defined and muscular chest, arms with very muscular deltoids and a flat belly full of abdominals. However, women are more concerned about their weight (Cho & Lee, 2013). They desire a flat stomach, slim waist, prominent breasts, to an overall slim body. Even perfect woman body measurements (90-60-90) were established to provide a definition of ideal proportions. It means a perfect woman is a woman who has a chest circumference of 90 cm, a waist of 60 cm and a hip measurement of 90 cm. For many years now, body ideals have been associated with health problems, as is the case of eating disorders in women. In the last 10 years, and simultaneously with the appearance of the muscular male body ideal, the first cases of vigorexia or muscle dysmorphia in men were documented (Rodríguez-Molina & Rabito, 2011).

Currently, there are no doubts about the relevance of body dissatisfaction for eating disorders. Individuals with eating disorders are not the only ones having problems with their body image. Those with Gender Dysphoria (GD) or transgendered individuals have also been reported to be highly dissatisfied with their body, and it has been suggested that, for many of them, their body is a primary source of suffering (Bandini et al., 2013). High levels of body dissatisfaction have already been reported in the trans population; however, the root of this dissatisfaction, and its association with eating disordered behaviors, has not been studied in depth (Witcomb et al., 2015). Since childhood, many people with GD have had feelings of anxiety related to being completely different from those of the same sex. They prefer playing the games of the opposite sex. They start to wear clothes of the opposite sex from an early age, not for fun but as an expression of the feeling of belonging to that other sex which is not theirs. They do it as a deep secret because they feel guilty and ashamed. Their youth is affected by feelings of alienation and loneliness. In time, they end up discovering that they do not identify with their own sex and they realize that they would be happier if they belonged to the other (gender) (Gooren, 2006).

This dissatisfaction differs from body dissatisfaction due to an internalization of a body ideal, but people with GD could suffer both aspects of body dissatisfaction. It is common that GD manifest a strong desire to change their primary and secondary sexual characteristics (Becerra, 2003). We could find people with GD who were born as men but with a sexual identity corresponding to women (MtF: male to female) and viceversa (FtM: female to male). Both, MtF and FtM make strong efforts to ensure that their bodies suit their identities. These people have a persistent preoccupation with hiding their primary and secondary sexual characteristics, and most of them seek hormonal and surgical treatments to change their bodies. MtFs tend to hide their male genitalia with pressure garments. Since adolescence, FtMs tend to wear male clothes. They often hide their breasts with compression garments, and try to pass as the opposite sex in public (Gómez, Esteva de Antonio & Bergero, 2006). FtM subjects present significant distress during development of secondary sexual features and menarche (Fisher et al., 2010); related to this, the occurrence of anorexia and bulimia nervosa has also been described in single case studies for female-to-male transsexuals in which slimness might be regarded as a possibility to suppress secondary sexual characteristics (e.g., the breasts) and menstruation (Hepp & Milos, 2002).

Gender differences among types of GD could be found as gender differences between general population related to body ideal internalization. Most MtFs tend to seem physically a woman according to the beauty ideal (thin with prominent breasts), and slimness was a way to respond to the female ideal of attractiveness, since the individuals often strive to be a "super female" and therefore tend to accentuate female traits (Hepp & Milos, 2002). Thus, being slim might be put on a par with being female and attractive (Waters, 1998 cited in Vocks, Stahn & Loenser, 2009) and FtMs tend to seem physically a muscular man, according to a current ideal body for males.

When body dissatisfaction appears, for both men and for women (transgender or not) this body dissatisfaction includes cognitive, emotional and behavioral aspects. However, GD subjects have an objective physical problem not related to ideal bodies, but related to identity. In addition to this dissonance between their gender and physical appearance, transgender people also may feel dissatisfied with their bodies by not achieving the prevailing ideals of beauty. There will be MtFs and FtMs recognized as women or men who do not show body dissatisfaction, even though they are not ideal women or men. However, there will be other MtFs or FtMs, who despite being recognized as women or men, may suffer from dissatisfaction if they feel that their

bodies are not close to the ideal for female or male beauty, in each case.

Obviously, aspects related to body dissatisfaction among groups could be different. For example, people with ED could be worried about being fat while people with GD could be worried about their sexual features. However, in similar studies (Rabito- Alcón & Rodríguez-Molina, 2015; Vocks et al., 2009; Witcomb et al., 2015), results showed higher body dissatisfaction in subjects with ED compared to subjects with GD. Body dissatisfaction plays a prominent role in gender dysphoria. In some individuals, body dissatisfaction shows as manifest disordered eating in order to suppress bodily features of natal gender and accentuate features of gender identity. (Jones, Haycraft, Murjan, & Arcelus, 2016).

This study attempts to determine the amount of body dissatisfaction in each of these groups. Our aim is to study the difference of the role of body dissatisfaction in each problem comparing a sample of subjects with GD, a sample of subjects with ED, and a control group in terms of features related to body dissatisfaction. The first aim of the present study was to compare MtFs and FtMs with male and female controls concerning body image. In order to examine differences between the participants with GD and another clinical group, we also included in the study females with ED (see below), since these persons are characterized not only by problematic eating behavior, but also by severe disturbances in body image. As a result of the aforementioned, we propose two hypotheses. Firstly, we expect higher body dissatisfaction in GD than in control subjects. Secondly, comparing the GD group with the ED group, we expect higher body dissatisfaction in the ED group. In people with GD, higher scores in body dissatisfaction are expected than in the general population. However, as this body dissatisfaction is different from ideal body internalization, we expect that body dissatisfaction in transgenders will be less intense than in the case of people with eating disorders.

Method

Participants

The sample consisted of 131 subjects: 61 subjects with gender dysphoria in assessment phase without surgeries (30 FtM and 31 MtF) from the Valencia and Barcelona Gender Dysphoria Units (GDU), 30 subjects with eating disorders (all females) from the Hospital General de Ciudad Real and Adan Psychological Center, and 40 university students from the Psychology Department of the Universidad Autónoma de Madrid who served as the control group.

Instruments

A sociodemographic questionnaire built ad hoc was used. In order to screen for GD we asked about feelings regarding their sexual identity.

Eating Attitudes Test (EAT-26) (Garner, Olmsted, Bohr & Garfinkel, 1982). It was used to screen for eating disorders. EAT-26 is a questionnaire with 26 items. It investigates diet-related disorders, bulimia, and anxiety related to food. More specifically, EAT-26 highlights the perception of one's own weight and physical appearance. The EAT-26 test is a standardized and validated screening tool that can be considered a valuable aid in the diagnosis of eating disorders from a cross-cultural point of view. Each question is scored on a scale from 0 to 3 (based on the replies: always, usually, often, sometimes, rarely and never). A total score is obtained by adding the scores of each item. Possible scores on the EAT-26 range from 0 to 78. A score of 20 or above indicates that a person may have an eating disorder and further evaluation by a mental health professional is therefore recommended. The Spanish validation of the EAT-26 has been carried out by Gandarillas et al. (2003) using a community sample of females aged 15 to 18 who were currently enrolled in school. The psychometric properties of this questionnaire are similar to those described by the original authors: they reported a Cronbach's alpha of .93 for the control group and .92 for the ED group. (Ministerio de Sanidad y Consumo, 2009). In our study, Cronbach's alphas for EAT-26 were calculated for each group: in the GD group it was .87; in the ED group was .82; and in the control it was .90.

The Body Dissatisfaction Subscale of Eating Disorders Inventory (EDI-2), Garner, 1998; Corral, González, Pereña & Seisdedos, 1998). It was used to assess body dissatisfaction. EDI-2 is composed of 91 items (64 items from EDI-1 and another 27 items) (Ministerio de Sanidad y Consumo, 2009). In order to calculate a total score, all the subscale scores can be summed or each subscale score can be used separately. The body dissatisfaction subscale has been used separately as a good indicator of body dissatisfaction. A score of 11 (a more sensitive cutoff) or 14 (a more specific cutoff) indicates that a person presents maladaptive body dissatisfaction (García, Vázquez, López & Arcila, 2003). Other studies consider a score of 16 as cutoff for indicating the possibility of a body image disorder associated with an eating disorder (Baile & Velázquez-Castañeda, 2006). The original authors reported a Cronbach's alpha between .83 and .92 for all subscales except for maturity fears that had a .65 value. In this study, Cronbach's alphas for the body

dissatisfaction of EDI- 2 sub-scale were calculated for each group of the sample: in the GD group it was .82; in the ED group was .77 and, finally, for the control group Cronbach's alpha was .91.

IMAGEN (Solano & Cano, 2010). This questionnaire is used to assess the different components of body dissatisfaction. It allows for obtaining a body dissatisfaction total score and a score of its main components: cognitive-emotional, perceptive and behavioral. The ICE subscale concerns the cognitive-emotional component of dissatisfaction with 21 items referring to one's own thoughts and emotions related with body dissatisfaction, such as the fear of gaining weight. The IPE subscale refers to the perceptive component of dissatisfaction with 10 items that evaluate subjective beliefs about having reached a weight above the desired weight or a deformed figure/body. The ICL subscale evaluates the behavioral component of dissatisfaction with 7 items that measure the frequency of typical behaviors in people with an eating pathology. To evaluate the frequency, a scale with the following categories has been used: 0 almost never/never, 1 rarely, 2 sometimes, 3 many times, 4 almost always/always. *IMAGEN* The questionnaire has neutral questions not only directed at females, as is the case of the Body Dissatisfaction Sub-scale in EDI-2. In the initial study, Cronbach's alpha was .91 for the total score and .92, .87, .64 for ICE, IPE and ICL respectively. In order to interpret percentiles, there are two assessments: one for men/woman without a risk for eating pathology and one for men/woman with a risk for eating pathology. In this study, Cronbach's alphas for the *IMAGEN* questionnaire were calculated for each group. In the GD group it was .95; for the ICE, IPE and ICL subscales the scores were .95, .73 and .84, respectively. In the ED group it was .97; for the ICE, IPE and ICL subscales the values were .94, .95, .89 and, finally, for the control group Cronbach's alpha was .96; and .95, .88 and .81, for the subscales ICE, IPE and ICL, respectively. Alpha values higher than 0.7 are enough to guarantee the questionnaire's reliability (Cronbach, 1951; Huh, Delorme, & Reid, 2006).

Procedure

All the questionnaires were inserted in a unique document. The Gender Identity Unit Clinic Hospital in Barcelona and La Fuente de San Luis Health Center in Valencia, were contacted in order to obtain subjects with GD and they participated voluntarily. Subjects with ED were collected in the Hospital General Universitario de Ciudad Real [*General University Hospital of Ciudad Real*] and Adan Psychological Center in Madrid. The control group was composed of university students from

the Autonomous University of Madrid. All questionnaires were collected from May 2012 to January 2014. All patients gave their informed consent and participated in the study voluntarily. Data analysis was carried out with SPSS (Statistical Package for the Social Sciences) V.15 and the data analysis consisted of ANOVA and Tuckey b as post hoc to analyze the relationship between body dissatisfaction and group.

Results

Table 1 shows the descriptive statistics for all participants. Between MtFs and FtMs there were not statistical differences among sociodemographic variables: age $F(1, 59) = -2.33, ns$; estimated weight $F(1, 59) = -1.66, ns$; BMI $F(1, 59) = .021, ns$; desired weight $F(2.58, 479) = .312, ns$; hours/week practicing sports $F(1,59)=-1.16, ns$. Some differences in sociodemographic variables among groups were found: between GD and ED subjects differences in desired weight were found $F(2, 128) = 5.52, p < .001$; between GD and control subjects differences in age were found $F(2, 128) = -5.88, p < .001$; between ED and control subjects differences in age $F(2, 128) = -5.42, p < .001$ and desired weight $F(2, 128) = 4.48, p < .001$ were found.

Descriptive statistics of each questionnaire were calculated for all participants (as can be seen in Table 2). There were statistical differences among all groups in EDI-2 body dissatisfaction subscale and *IMAGEN* scores. In the EAT-26 questionnaire statistical differences were found between GD and ED subjects and ED and control subjects; however, no statistical differences were found between DG and control subjects. The scores obtained were higher in the ED group on all questionnaires, followed by the GD group. Moreover, statistics were calculated for GD types (Table 3). FtMs obtained higher mean scores than MtFs in the BD subscale of EDI-2 (11.55, $SD = 9.3$ versus 7.67, $SD = 5.94$), but lower on the EAT- 26 (6.76, $SD = 7.22$ versus 9.6, $SD = 7.98$) and *IMAGEN* (34.79, $SD = 25.45$ versus 46.76, $SD = 32.66$).

Regarding age and BMI, correlations with body dissatisfaction were not significant for FtM. However, correlations between BMI and body dissatisfaction by EDI-2 subscale and *IMAGEN* were significant for MtF. Correlations between BMI, age and body dissatisfaction were not significant in female controls. None of the individuals with GD met diagnostic criteria for ED and none of those individuals with ED met criteria for GD. In regards to correlation coefficients of the questionnaires, these were obtained for each group. They can be seen in Table 4 for GD subjects, in Table 5 for ED subjects and in Table 6 for control subjects.

Table 1. Means and SDs (in parenthesis) for all groups of subjects

	Total GD (n = 61)	MtF (n = 31)	FtM (n = 30)	Total ED (n = 30)	Anorexia Nervosa (n = 10)	Bulimia Nervosa (n = 9)	Eating Disorder non specified (n = 11)	Total control (n = 40)	Control males (n = 19)	Control females (n = 21)
Age	27.28 (6.60)	29.20 (6.89)	25.37 (5.8)	32.13 (9.8)	30.5 (10.5)	26.78 (8.93)	38 (7.04)	21.85 (2.24)	22.16 (2.46)	21.57 (2.04)
Estimated weight	67.00 (18.77)	70.83 (21.27)	62.74 (14.58)	55.75 (13.27)	47 (6.40)	57.77 (8.66)	61.27 (17.16)	62.97 (10.67)	70.39 (8.77)	56.61 (7.69)
BMI	25.08 (8.90)	25.06 (10.82)	25.12 (5.22)	21.69 (5.46)	17.39 (2.33)	22.66 (2.54)	25.02 (7.15)	21.59 (2.88)	21.98 (2.79)	21.28 (2.98)
Desired weight	62.83 (11.85)	62.31 (14.63)	63.37 (7.92)	49.86 (5.1)	48 (5.68)	50.94 (5.24)	50.05 (4.6)	60.53 (10.21)	69.97 (6.02)	53.33 (5.93)
Hours/week sports	4.31 (6.25)	5.61 (9.29)	3.38 (2.21)	7.13 (6.69)	7.75 (8.22)	5.4 (2.3)	7.92 (8.19)	4.60 (4.28)	4.56 (4.76)	4.64 (3.89)

Note. BMI = Body Mass Index; ED = Eating disorders; GD = Gender dysphoria; MtF = Male to female.

Table 2. Descriptive Statistics for all questionnaires in all groups.

Questionnaires	GD	ED	Control	GD-Control	GD-ED	ED-Control
	Mean (SD)	Mean (SD)	Mean (SD)			
EAT-26 total	8.18 (7.69)	35.80 (17.39)	4.30 (7.00)	$F(2, 128) = -2.56, p < .05$	$F(2, 128) = -8.31, p < .01$	$F(2, 128) = -9.4, p < .001$
BD/ EDI-2 total	9.55 (7.93)	17.70 (6.49)	4.08 (6.08)	$F(2, 128) = -3.7, p < .001$	$F(2, 128) = -4.89, p < .001$	$F(2, 128) = -9.09, p < .000$
IMAGEN total	40.97 (29.77)	92.70 (34.98)	22.17 (21.02)	$F(2, 128) = -3.46, p < .001$	$F(2, 128) = -7.19, p < .001$	$F(2, 128) = -10.3, p < .001$

Note. BD/ EDI-2 = Body dissatisfaction subscale from Eating Disorders Inventory 2; EAT-26 = Eating Attitudes Test; ED = Eating Disorders; GD = Gender Dysphoria.

Table 3. Descriptive Statistics for all questionnaires in GD subjects

Questionnaires	MtFs	FtMs	
	Mean (SD)	Mean (SD)	
EAT-26 total	9.60 (7.98)	6.76 (7.22)	$F(1, 59) = -1.44, ns$
BD/ EDI-2 total	7.67 (5.94)	11.55 (9.3)	$F(1, 59) = 1.93, ns$
IMAGEN total	46.76 (32.66)	34.79 (25.45)	$F(1, 59) = -1.57, ns$

Note. BD/ EDI-2 = Body dissatisfaction subscale from Eating Disorders Inventory 2; EAT-26 = Eating Attitudes Test; ED = Eating Disorders; FtM= Female to Male; GD = Gender Dysphoria.

To analyze the relationship between body dissatisfaction and group (ED, GD or control group), ANOVA was used. We obtained $F(2, 128) = 54.10, p < .001$ and $F(2, 128) = 31.75, p < .001$, so there were differences in BD between groups using IMAGEN and the body dissatisfaction subscale in EDI- 2 respectively.

Tukey b post hoc analysis was used with groups, and data for the body dissatisfaction subscale in EDI- 2 for ED was 17.7, for GD 9.55 and 4.07 for the control group. Tukey b using IMAGEN was 92.7 in the ED

group, 40.97 in GD subjects and 22.17 in the control group. ANOVA for the ICE IMAGEN subscale was $F(2, 128) = 51.77, p < .001$, using Tukey b the results were 19.85 for the control group, 33.05 for the GD group and 66.17 for the ED group. For the IPE and ICL subscales significances were $F(2, 128) = 43.2, p < .001$ and $F(2, 128) = 63.43, p < .001$. Tukey b results for the control group were 1.55 and 0.78; for GD were 5.45 and 0.87 and, finally, for the ED group 18.6 and 10.77, respectively.

Table 4. Person correlations among questionnaires in GD group

	EAT-26	IC/EDI-2	IMAGEN/ ICE	IMAGEN/ IPE	IMAGEN/ICL
IC/EDI-2	.106				
IMAGEN/ICE	.380*	.400*			
IMAGEN/IPE	.195	.357*	.559*		
IMAGEN/ICL	.474*	.077	.249	.201	
IMAGEN/TOTAL	.598*	.408*	.776*	.665*	.514*

Note. BD/ EDI- 2 = Body dissatisfaction subscale from Eating Disorders Inventory 2; EAT-26 = Eating Attitudes Test; GD = Gender Dysphoria; IMAGEN/ ICE = Cognitive-emotional component of body dissatisfaction in IMAGEN; IMAGEN/ IPE = Perceptive component of body dissatisfaction in IMAGEN; IMAGEN/ICL = Behavioural component of body dissatisfaction in IMAGEN. * $p < .001$.

Table 5. Person correlations among questionnaires in ED group

	EAT-26	IC/EDI-2	IMAGEN/ ICE	IMAGEN/ IPE	IMAGEN/ICL
IC/EDI-2	.769*				
IMAGEN/ICE	.704*	.784*			
IMAGEN/IPE	.667*	.820*	.548*		
IMAGEN/ICL	.737*	.611*	.565*	.620*	
IMAGEN/TOTAL	.722*	.801*	.881*	.763*	.736*

Note. BD/ EDI- 2 = Body dissatisfaction subscale from Eating Disorders Inventory 2; EAT-26 = Eating Attitudes Test; GD = Gender Dysphoria; IMAGEN/ ICE = Cognitive-emotional component of body dissatisfaction in IMAGEN; IMAGEN/ IPE = Perceptive component of body dissatisfaction in IMAGEN; IMAGEN/ICL = Behavioural component of body dissatisfaction in IMAGEN. * $p < .001$.

Table 6. Person correlations among questionnaires in control group

	EAT-26	IC/EDI-2	IMAGEN/ ICE	IMAGEN/ IPE	IMAGEN/ICL
IC/EDI-2	.680*				
IMAGEN/ICE	.714*	.871*			
IMAGEN/IPE	.592*	.704*	.745*		
IMAGEN/ICL	.884*	.475*	.542*	.449*	
IMAGEN/TOTAL	.775*	.870*	.989*	.810*	.627*

Note. BD/ EDI- 2 = Body dissatisfaction subscale from Eating Disorders Inventory 2; EAT-26 = Eating Attitudes Test; GD = Gender Dysphoria; IMAGEN/ ICE = Cognitive-emotional component of body dissatisfaction in IMAGEN; IMAGEN/ IPE = Perceptive component of body dissatisfaction in IMAGEN; IMAGEN/ICL = Behavioural component of body dissatisfaction in IMAGEN. * $p < .001$.

The data confirmed our two hypotheses: body dissatisfaction was higher in the ED group than among the others and higher in the GD group than the control group. Tukey b data showed that this BD was double in each group comparison (BD ED group > BD GD group > BD control group), approximately. GD subjects had more than twice the level of BD than the control group and ED group had almost twice the level of BD than the GD group.

Discussion

In line with our hypothesis, data have shown that transgender individuals present higher levels of body

dissatisfaction than the general population, according to two measures of body dissatisfaction (IMAGEN and the Body Dissatisfaction Subscale of the EDI-2), which is similar to previous studies (Rabito-Alcón y Rodríguez-Molina, 2015; Vocks et al., 2009; Witcomb et al., 2015). However, they presented lower levels of BD than the ED group. These results are the same for each IMAGEN subscale: ICL, ICE and IPE.

Descriptive sample data showed that subjects with ED practice more hours of sports per week and they desire a lower weight than the other two groups. Only in the case of the ED group, the scores of EAT-26 reached 20 points, which indicates that these individuals could

suffer from an eating pathology, as was expected. A cutoff of 11 for the BD subscale in EDI-2 indicates people that are suffering maladaptive body dissatisfaction and the GD group is near this score. If we analyze the gender differences, we find out that FtMs showed a mean score of more than 11, concluding that BD male transgenders present a more maladaptive BD. However, 16 points in BD subscale in EDI-2 suggests the possibility of a body image disorder associated to an eating disorder as in the case of the ED group which had the higher score. In the same way, IMAGEN descriptive data, according to the results of the others questionnaires, show the highest mean score in the ED group (severe BD), followed by the GD group (moderate to severe BD).

Both questionnaires to test body dissatisfaction (BD subscale from the EDI-2 and IMAGEN) correlated significantly in all groups. That implies convergence between both measures on aspects related to body dissatisfaction. Results related to body dissatisfaction in subjects from different groups were statistically significant. In post hoc Tukey b analysis, the ED group was the group with higher BD, followed by GD, and finally with the lowest score was seen in the control group. Perhaps subjects with GD have higher body dissatisfaction than the general population, but this degree of body dissatisfaction is different from people with eating disorders, being higher in the latter. BMI in MtF influence in body dissatisfaction, if BMI increases, body dissatisfaction increases too. This correlation did not occur in female controls. Maybe the explanation is that MtF have higher BMI than non-transsexual females.

We can ask ourselves about the reasons why each group could develop body dissatisfaction. For instance, in the ED group it could be due to a drive for thinness, according to society's beauty ideals. However, for GD, the reasons could be related to their sexual characteristics. There is a discordance between their bodies and their identities and that could be the reason of the body dissatisfaction image for this group. Individuals with GD seem to present "morphological body dissatisfaction" and not a BD due to thinness as in the ED group.

Those individuals with GD hate their sexual characteristics, not their weight. For example, MtFs are not dissatisfied with their weight, but rather that they are dissatisfied with their beard, their genitalia and so on. No differences in body dissatisfaction were found between males and females as Vocks and colleagues found (Vocks et al., 2009). However, in terms of eating pathology, gender differences were reported (Furnhan, Bandini & Sneade, 2002). This finding possibly related to male body ideal has been increasingly gaining importance, nearing

the level of pressure towards the ideal body that women have been dealing with since the 80's. (Rodríguez-Molina & Rabito, 2011).

It is important to note that all GD subjects were in hormonal therapy during the assessment period. It would be interesting to have included the time people with GD took hormonal treatment, however, its influence on surgeries for body dissatisfaction in GD subjects has been contradictory: Vocks and colleagues (2009) found no correlation between the number of stages of the transsexual development undergone and eating and body image disturbance measures among MtF and FtM. This finding contradicts the results of studies by Kraemer et al. (2008) and Pauly and Lindgren (cited in Vocks et al., 2009), in which a positive effect of sex-reassignment surgery on body image was encountered. Future research must conduct an in-depth study of the emotional features related to BD in the different groups, and could improve the sample by including the different types of ED. It may also be interesting to include the duration of hormonal treatment of GD subjects.

Also, future research should answer to what extent individuals with gender dysphoria experience body dissatisfaction due to identity-related problems (i.e., they literally do not experience a sense of "fitting" with their physical bodies) vs. due to pursuit of the thin-ideal (i.e., as might be expected among individuals with eating disorders).

The results in other studies (Vocks et al., 2009; Witcomb et al., 2015) may provide first indications that persons with GID, especially MtFs, might be at an enhanced risk of developing eating and body image disturbances, and interventions aiming at improving body image might be promising in this context. According to this, the findings in a previous review suggested that body dissatisfaction is core to the distress that trans people experience, and that this dissatisfaction may also put some individuals at risk of developing disordered eating. Additionally, the findings appear to suggest that gender dysphoria treatment is successful at increasing body satisfaction and improving body image (Jones, Haycraft, Murjan, & Arcelus, 2016).

In conclusion, GD and eating disorders are characterized by severe body uneasiness, and the body is at the core of this distress in both conditions. Transgender individuals have higher body dissatisfaction than general population, but less than the ED group. There were no gender differences in body dissatisfaction, as found by previous studies. However, FtMs manifest more BD than MtFs. Perhaps, nowadays, the internalization of male body ideals is gaining importance over female body ideals.

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