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Biological Gender, Sexual Orientation and Gender Role in Eating Disorders

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1. Introduction

Richard Morton, an English physician, provided the first medical description of an eating disorder, disordered man in 1689 (Morton, 1694). The patient was described as "The Son of the Reverend Minister Steele." At the age of 16, he began to fast. Morton attributed his "want of appetite" to "studying too hard" as well as to the "passions of his mind": Morton prescribed him to abandon his studies and move to the country. The doctor was successful with his patient, who followed his advices.

During the last century, information on eating disorders in men has been mostly limitated to single-case reports (Falstein et al., 1956; Leger et al., 1969; Beumont et al., 1972). Only since the late 1980, researchers have reported some studies of moderate sample size (Pope et al., 1986; Schneider & Agras, 1987; Fichter & Daser, 1987).

Yet, despite eating pathologies have been traditionally associated with females, they are not rare among males: it is estimated, in fact, that 5-10% of anorexia nervosa patients (Oyebode et al., 1998) and 10-15% of bulimia nervosa patients are men (Carlat & Camargo, 1991). Hoek et al. (2003) found a 0.8 incidence rate (female: male ratio = 27:1) for bulimia and below a 0.5 incidence rate for anorexia in a population of 100,000 subjects. However, eating disorders may be increasing among males: compared to the past, in fact, other studies point out a prevailing upward trend (Carlat et al., 1997; Nelson et al., 1999; Kjelsas et al., 2004).

So, researches examining both sexes have been conducted to investigate the peculiar features – if any – of anorexia in men, and gender differences in eating pathologies. The onset of the disorder, that Hilde Bruch (1973) believed to occur at an earlier stage in male subjects, is actually similar to that in females (Fichter et al., 1985; Crisp et al., 1986). Forman-Hoffman et al. (2008) have found that the eating disorders age of onset in males appeared to have a single peak at about the age of 14. Patients with older ages of onset, unlike those with younger ages of onset, reported lower percentage of mean matched population weight and a longer period of disorder. This study, according to the authors, confirmed the results of previous studies carried out on female samples.

Similar clinical pictures for male and female patients with eating disorders have been described (Hall et al., 1985; Crisp et al., 1986; Braun et al., 1999). Olivardia et al. (1995), in a study designed to assess the characteristics of eating-disordered men, concluded that eating

psychopathologies appear to display noticeably similar features in affected individuals of both genders. However, differences have also been found.

Males are more preoccupied by food, weight, and show more hyperactivity, more achievement orientation and more sexual anxiety than females (Fichter et al., 1985). In a review on bulimia nervosa in men, Carlat & Camargo (1991) have found higher prevalence of premorbid obesity, homosexuality and asexuality, and less concern with strict weight control in bulimic males than females.

Therefore, homosexuality appears to be more frequent among men, especially among those who develop bulimia nervosa (Carlat et al., 1997; Grabhorn et al., 2003). Furthermore, males with an eating disorder differ from females because there is the occurrence of a stronger psychiatric comorbidity and a higher rate of suicide attempts (Bramon-Bosch et al., 2000).

Higher rates of premorbid obesity and overweight result to be more common in males than in females (Sharp et al., 1994; Fernández -Aranda et al., 2004), as well as a higher perfectionism and interpersonal distrust (Joiner et al., 2000). As Lewinsohn et al. (2002) have indicated in their study, excessive exercising is more frequent in men than in women. Moreover, the absolute proportion of individuals wanting or having sought treatment is very low in both groups but, at comparable levels of problematic eating behaviors, females are more likely to have sought treatment than males.

In addition to eating pathology, men may show signs of "muscle dysmorphia" or "reverse anorexia" (Harvey & Robinson, 2003). This disorder is characterized by the drive to increase their muscle mass, which may cause distress, body dissatisfaction, and feeling of ineffectiveness, occupational dysfunction, impaired social activities and relationship. Although the studies aimed at monitoring comorbidity between reverse anorexia and eating disorders highlight the resemblance of some traits (Davis & Scott-Robertson, 2000; Olivardia et al., 2000; Goldfield et al., 2006), no studies are available up to date which can explain this similarity in empirical terms. Conceptually, reverse anorexia is included in the body dysmorphic disorder, and the concern for not being muscular enough may be determined by a distorted perception of one's own body image (H.G. Pope et al., 1997; Olivardia et al., 2001; C.G. Pope et al., 2005). Even though there are no epidemiologic works indicating the spreading of this disorder (Olivardia, 2001), it is believed that 5% of males who do body building suffer from reverse anorexia (Pope et al., 1997) and that 9% of the subjects with body dysmorphism focus their feeling of ineffectiveness on muscles (Pope et al., 2000).

Even if the most relevant researchers on this disorder, as Pope and Olivardia, finally believe those features closer to dysmorphism than to eating disorders, the relevance in reverse anorexia patients psychopathology of the drive to increase their muscular mass could be considered the proper "reverse" of the anorectic drive for thinness. Consequently, the cultural bond between muscle mass and virility, if compared with the bond between thinness and the lack of feminine body shape, could open, in our opinion, a fertile topic of research and theoretical investigation on the importance of gender, sexual orientation, sexual impairments on body identity features.

2. Sexual orientation and eating disorders in male population

The studies mentioned so far have shown that features such as homosexuality and asexuality may be distinctive of male eating disorders, so, these topics have attracted

researchers increasing attention. The emphasis on sexual orientation suggests that there may be an association with eating psychopathologies. In literature, ample evidence supports this suggestion: in fact, among the studies of eating-disordered men, those that report sexual orientation of subjects show that a considerable number of these men are homosexual, bisexual or asexual.

Anorexic and bulimic males report greater problems in terms of sexual isolation, sexual inactivity and conflictual homosexuality than anorexic and bulimic females (Herzog et al., 1984).

Five of the 9 male patients with bulimia nervosa, described by Robinson & Holden (1986), showed atypical sexuality, while only a little evidence of increased homosexuality or "sexual conflict" in 15 male bulimic patients, was found by Pope et al. (1986). Nevertheless, the definition of "homosexual activity" as at least one homosexual experience to orgasm within the preceding five years, which study assessment was based on, could be considered only partially adequate.

In their study, Fichter & Daser (1987) have found that male and female anorexia nervosa patients share more features in common than dissimilarities on symptomatology. However, they observed that anorexic men also show several signs of disturbed psychosexual and gender identity development. Therefore, the authors concluded males with uncertain gender identity have a remarkably higher risk of developing an eating disorder during adolescence than males with a less indefinite gender identity.

A comparison between a sample of 15 bulimic male subjects and one of 15 bulimic female subjects has highlighted a statistically significant difference about marriage and sexual preference. Most females, in fact, were married and most males declared a homosexual or bisexual preference (Schneider & Agras, 1987). Therefore, sexual identity concerns seem to be a distinctive feature of males with eating disorders (Farrow, 1992).

Carlat et al. (1997) carried out a research on 135 subjects diagnosed with an eating pathology: 42% of the bulimic male patients were identified as homosexuals or bisexuals, and 58% of the anorexic patients were identified as asexual.

2.1 Studies on natural samples of homosexual males

The findings of clinical samples researches have lead to further investigations on the bond between sexual orientation and increased risk for eating disorder symptoms in natural samples, in order to hypothesize the why and how of the higher eating disorders prevalence among gay and bisexual males.

Homosexual orientation is associated with dysfunctional eating patterns and higher rates of body dissatisfaction (French et al., 1996); furthermore, it appears to be a specific risk factor for eating disorder psychopathology in males (Russel & Keel, 2002).

A research study carried out by Yelland & Tiggemann (2003) compared a group of 52 homosexual males with a control group of heterosexual males and a group of 55 heterosexual females. The outcomes showed concern about physical appearance and psychological characteristics typically associated with eating disorders, which made the sample of homosexual males more similar to heterosexual females than to the control males.

Moreover, homosexuals showed higher values than controls with regard to the drive to increase muscle mass.

Kaminski et al. (2005) have used, for their study, a self-report instrument specifically designed to assess men's eating attitudes and behaviors, exercise, and body image (Male Eating Behavior and Body Image Evaluation). The authors found gay men to be more likely to experience poor body image and related eating disorders symptomatology than straight men.

In a study on sexually active male adolescents, Ackard et al. (2008) found eating disorder symptoms were more prevalent among males who reported a greater number of sexual partners, irrespective of gender of sex partner, and those who reported having male sexual partners.

According to some authors, attending to a gay recreational group is related to lower levels of eating disturbance, so, it may be considered as a protective factor against eating problems (Williamson & Spence, 2001). Actually, Feldman & Meyer (2007) have showed that the participation in the gay community is significantly associated to higher subclinical eating disorders' prevalence.

In conclusion, several empirical studies confirm homosexuality to be a risk factor *per se* in the development of an eating disorder in males. The most recurrent explanation for this findings is that gay are more worried about their look and, therefore, less satisfied with their bodies and more vulnerable to eating problems in order to attract other men. In fact, men give more importance to physical beauty than women, when choosing their mate. So, the homosexual man who has to attract another man is more preoccupied about his physical appearance (Siever, 1994). In this supposition gay culture and gay communities have also been implicated, as within these great emphasis is placed upon the importance of physical attractiveness. Males may feel themselves pressured to conform to this value that, increasing vulnerability to body dissatisfaction, could make them more prone to eating pathologies (Beren et al., 1996; Yelland & Tiggeman, 2003; Hospers & Jansen, 2005).

3. Sexual orientation and eating disorders in female population

Researches aiming to investigate the relationship between sexual orientation and eating pathology in female population have produced heterogeneous and unclear results.

First, lesbians appear to be less exposed to risk of eating disorder symptoms. Homosexual women's greater body satisfaction and lower concern with weight and appearance may contribute to their lower rates of eating disorders (Siever, 1994). As support to this assumption, some researches revealed fewer dysfunctional eating attitudes and behaviors in homosexual women than in heterosexuals (Schneider et al., 1995; Lakkis et al., 1999; Strong et al., 2000).

Herzog et al. (1992) found that homosexual women were less concerned with weight than heterosexual woman, they were more satisfied with their bodies, had a significantly higher body weight ideal and consequently a lower drive for thinness. Similarly, heterosexual females showed greater concern with their weight and physical appearance, higher anxiety

about being overweight, and more dieting behavior **(**Gettleman & Thompson, 1993). Brand et al. (1992) reported higher concern with body weight and dieting in heterosexual women and homosexual men. Actually, in this study, gender was more strongly related to body satisfaction than was sexual orientation. Lesbians and heterosexual women, in fact, showed more body dissatisfaction and reported greater frequency of dieting than gay or heterosexual men. A comparison between samples of heterosexual, homosexual and bisexual males and females has showed major differences between homosexual and heterosexual males with regard to body dissatisfaction, the resort to compensatory strategies and binge eating episodes. The sample of homosexual females showed lower body dissatisfaction than heterosexuals, even though they were not less likely to report dieting, binge eating or unhealthy weight control behaviors (French et al., 1996).

Lesbian subcultures have been described to downplay the importance of physical attractiveness and traditional ideals of beauty (Striegel-Moore, 1990). Within this context, one hypothesis has been that lesbians generally do not suffer from body image problems or disordered eating because they are not vulnerable to cultural pressures to be thin as most heterosexual women do (Brown, 1987). Some researchers argue that lesbians may be subject to less pressure with regard to their physical attractiveness and, consequently, are less dissatisfied with their bodies (Brown, 1987; Barron, 1998) and less vulnerable to eating disorders than heterosexual women (Siever, 1994). LaTorre and Wendenburg (1983) found that women who reported same-sex sexual experiences were generally more satisfied with both their sexual activities and activities and their bodies than were women who only reported heterosexual experiences. By contrast, emphasis on appearance has been thought to put homosexual males at risk from body dissatisfaction and eating problems (Carlat & Camargo, 1991; Herzog et al., 1992; Siever, 1994; Russell & Keel, 2002).

These evidences support a model where lesbianism might be seen as a protective factor against disordered eating attitudes. Other studies, conversely, have found no major differences between hetero- and homosexual women concerning body dissatisfaction (Beren et al., 1996; Striegel-Moore et al., 1990), with regard to the presence of dysfunctional eating attitudes and behaviors (Streigel-Moore et al., 1990; Beren et al., 1996; Share & Mintz, 2002; Moore & Keel, 2003) or in rates of eating disorders (French et al., 1996). For example, Heffernan (1996) reported that lesbians were not significantly different from heterosexual women in attitudes concerning body weight and appearance or dieting. In addition, no bulimia nervosa prevalence differences, among lesbians and heterosexual women, were found, but binge eating disorder resulted more frequent.

In contrast, Striegel-Moore et al. (1990) found a stronger association between body esteem and self-esteem in homosexual women and higher rates of bingeing in homosexual women compared to heterosexuals. Particularly, lesbian undergraduates students reported lower self-esteem, higher interpersonal distrust and difficulties in identifying their own emotions, than heterosexual students did. Body esteem was found to be related more closely with self-esteem in lesbians, than in heterosexual students. Similar results have been found by Wichstrøm (2006): a same-sex sexual experience, among a natural female population increased the prevalence of bulimic symptoms in a 5-year follow-up.

These findings seem to support the hypothesis that lesbian experience is associated with greater body dissatisfaction and abnormal eating behaviors.

4. Body dissatisfaction, abnormal eating behaviors and eating disorder attitude in homo and heterosexuals

Starting from these considerations, we have conducted a study to assess the body satisfaction, the presence of abnormal eating behaviors and the presence of eating disorders psychological characteristics in a natural population of homosexuals and heterosexuals, both male and female (Cella et al., 2010).

We screened 110 homosexuals (85 males and 25 females) and 121 heterosexuals (85 males and 36 females), aged 18-50, by means of: a) an *ad hoc* socio-demographic schedule; b) the *Eating Disorders Inventory 2* (Garner, 1991); c) the *Eating Disorders Inventory 2 – Symptom Checklist (*Garner, 1991); d) The *Body Uneasiness Test* (Cuzzolaro et al., 2000).

Overall, the results obtained appear to be similar to those reported in the literature. No significant differences have emerged between hetero- and homosexual females with respect to the presence of dysfunctional eating attitudes and behaviors (Table 1, 2). Conversely, in the homosexual male sample, higher concern is expressed about body image and those psychological features the literature often considers being related to, or indicators of, a risk factor for ED onset. Furthermore these features make the sample of homosexual males more similar to the group of females (homo- and heterosexuals) than to the heterosexual males (Schneider et al., 1995). Despite having a lower BMI, homosexual men show a higher body dissatisfaction, drive for thinness and ineffectiveness than the sample of heterosexual males; moreover they show a smaller ability to recognise and distinguish feelings and emotions, a lower ability in the impulse regulation and a higher social insecurity (Table 2). Regarding to

		Average scores			
	p	**Homosexual men (N=85)**	**Heterosexual men (N=85)**	**Homosexual women (N=25)**	**Heterosexual women (N=36)**
Age	.841	27.54	28.75	28.68	27.94
Body Mass Index	**.001**	24.02	25.89	26.93	23.43
			N (%)		
Socioeconomic background	.192				
Low		56 (67%)	47 (55.3%)	12 (48%)	25 (71.4%)
High		27 (32.5%)	38 (44.7%)	13 (52%)	10 (28.6%)
Abnormal eating behaviors					
Diet	.163	22 (26.5%)	22 (26.2%)	12 (48%)	12 (33.3%)
Binge eating	.139	45 (54.2%)	51 (60%)	10 (40%)	16 (45.7%)
Compensatory Strategies	**.002**	12 (14.6%)	0	4 (16%)	3 (8.6%)
Weight control	.504	45 (58.4%)	53 (64.6%)	6 (26.1%)	11 (31.4%)
Drive for thinness ≥ 14	**.019**	8 (9.4%)	2 (2.5%)	3 (12%)	7 (19.4%)
Cut-off GSI	**.000**	29 (34.5%)	10 (11.8%)	11 (44%)	14 (38.9%)

Table 1**.** Socio-demographic characteristics and eating behaviors of the male homosexual (N=85), male heterosexual (N=85), female homosexual (N=25) and female heterosexual (N=36) sample

dysfunctional eating behaviors, they show a higher trend towards the binge eatings and the use of strategies to compensate weight gain than heterosexuals (Table 1). In all these areas they do not show any major differences from both groups of hetero- and homosexual women. Unlike the data reported in the literature (Feldman & Meyer, 2007), this sample showed no difference as a consequence of being or not being members of an association of homosexuals. The presence or absence of a stable relationship appears, furthermore, as an important variable in differentiating the homosexual men with a greater body image concern, which may lead to disordered eating. The results indicate that homosexual men not engaged in a sentimental relationship, if compared to those who are engaged, show higher concern for their physical appearance, higher levels of avoidance behaviors related to the body image and feelings of detachment and alienation in relation to their body, deeper feelings of ineffectiveness, lower capacity to accurately recognise and distinguish feelings and emotional states and a lower ability in the impulse regulation (Table 3). It seems plausible that the presence of a stable relationship may lead these individuals towards a

		Average scores			
	p	**Homosexual men (N=85)**	**Heterosexual men (N=85)**	**Homosexual women (N=25)**	**Heterosexual women (N=36)**
EDI 2 scales					
Drive for thinness	**.000**[a]	4.38	2.09	6.52	6.42
Bulimia	**.001**[a]	2.55	.93	3.04	2.75
Body dissatisfaction	**.001**[b]	5.34	5.13	9.20	8.66
Ineffectiveness	**.000**[a]	4.72	2.08	6.24	4.78
Perfectionism	.861	4.17	3.68	3.88	4.00
Interpersonal distrust	.422	4.05	3.56	4.28	3.03
Interoceptive awareness	**.000**[a]	5.73	2.05	4.48	4.17
Maturity fears	.588	6.02	5.42	4.80	5.25
Asceticism	.846	3.62	3.75	4.20	3.92
Impulse regulation	**.000**[a]	6.09	2.89	5.88	3.36
Social insecurity	**.002**[c]	5.14	3.44	6.44	5.97
BUT scales					
Weight Phobia	**.000**[a]	1.48	.86	1.74	1.76
Body Image Concern	**.000**[a]	1.20	.74	1.56	1.55
Compulsive Self Monitoring	**.000**[a]	1.24	.59	1.03	1.10
Avoidance	**.002**[a]	.66	.23	.74	.45
Depersonalization	**.000**[a]	.79	.31	.97	.75
Global Severity Index	**.000**[a]	1.0	.57	1.27	1.34

[a]= homosexual men = homosexual women = heterosexual women ≠ heterosexual men
[b]= homosexual women = heterosexual women ≠ homosexual men= heterosexual men
[c]= heterosexual men ≠ homosexual women = heterosexual women; homosexual men = homosexual women = heterosexual women

Table 2. The comparison between male homosexual (N=85), male heterosexual (N=85), female homosexual (N=25) and female heterosexual (N=36) sample in the individual Eating Disorders Inventory 2 (EDI-2) and Body Uneasiness Test (BUT) scales

greater acceptance of their body image and to a lower suffering related to the uneasiness this may generate. From this point of view, homosexual relationship may promote satisfaction and acceptance of one's own body; is an alternative explanation possible? It could be possible to hypothesize that subjects who experience greater body image satisfaction and who show lower concern with their own body weight and shape, tend to be more interpersonally oriented and likely to have a sexual partner and to engage a stable relationship. Actually, considering the homosexual women, no differences emerged with respect of these variables.

Our findings seem to support the hypothesis, therefore, that homosexual orientation is associated with greater body dissatisfaction and abnormal eating behaviors in males, in particular among those who claimed they were not in a stable sentimental relationship.

Our hypothesis, from a psychodynamic point of view, is that the biological gender is not a risk factor per se, as reported in the literature, but rather the feminine component of the sexuality. Obviously, the femininity is present, in different proportion, in every subject, both male and female, both homo and heterosexual. This topic although suggested in theoretical terms (Cotrufo, 2005), has not been the subject of reliable empirical studies and, in our opinion, would require further analysis. Moreover, future studies might benefit from research on the relationship between sexual orientation and eating disorders, which considered the subjects' femininity/masculinity as variables independent of gender and sexual orientation.

		Average scores	
	p	**Sentimental relationship (N=18)**	**No sentimental relationship (N=63)**
EDI 2 scales			
Drive for thinness	.265	2.67	4.90
Bulimia	.096	.94	2.86
Body dissatisfaction	.070	2.94	5.79
Ineffectiveness	**.024**	2.00	5.37
Perfectionism	.267	2.72	4.63
Interpersonal distrust	.261	2.67	4.46
Interoceptive awareness	**.027**	2.39	6.67
Maturity fears	.295	4.39	6.32
Asceticism	.115	2.56	4.00
Impulse regulation	**.026**	2.89	6.90
Social insecurity	.396	3.89	5.63
BUT scales			
Weight Phobia	.199	1.02	1.63
Body Image Concern	**.023**	.58	1.40
Compulsive Self Monitoring	.901	1.00	1.30
Avoidance	**.034**	.22	.80
Depersonalization	**.028**	.29	.94
Global Severity Index	.064	.61	1.21

Table 3. Influence of a "sentimental relationship" on the individual Eating Disorders Inventory 2 (EDI 2) and Body Uneasiness Test (BUT) scales in the male homosexual sample (N=85)

5. Gender role orientation and eating disorders: the role of masculinity and femininity

As widely described, women are more vulnerable to develop eating disorders than men (Hoek et al., 2003) and, traditionally, disordered eating has been considered as a "women's matter" (Pritchard, 2008).

The prevalence of this disease in males, therefore, is much lower than that found in females: the proportion reported in recent studies is almost one anorexic male every twenty-seven females (Hoek et al., 2003). However, numerous empirical contributions, in the literature, suggest that if you take into consideration only the homosexual males, rates rise significantly. As a consequence, a discrete series of studies aimed to understand and deepen the relationship between eating pathology and sexual orientation. Our personal contribution of research fits into this line of study, confirming most of the previous empirical evidence: there is a greater vulnerability of gay men towards eating disturbances.

Unlike biological gender, some researchers, interested in considering the relationship between sex-role orientation and eating psychopathology, are starting to suggest that gender differences in disordered eating behaviors might be best explained by the constructs of masculinity and femininity. However, studies on gender role orientation and eating disorders have not produced conclusive results. In general, femininity was associated with high levels of eating psychopathology, whereas masculinity was negatively related to abnormal eating behaviors and attitudes. In a study of interest, carried out by Meyer et al. (2001) on a group of 100 university students (40 homosexuals and 60 heterosexuals), the results showed – for the whole sample and for the group of homosexuals alone – significant correlations between the scores obtained at the EAT and the "Femininity" scale of the Bem Sex Role Inventory (Bem, 1974), and between the "masculinity" scale and healthy eating behaviors. The authors hypothesize that, unlike the masculine attitude, femininity is an important risk factor in the onset of an eating disorder, and that previous findings among homosexual groups may have been mystified by levels of femininity. Similarly, Johnson et al. (1996) found students with higher levels of self-rated social desirability and lower levels of masculinity reported higher levels of eating problems. Regarding clinical populations, research on associations between eating disturbances and gender role orientation also provides similar results. Femininity emerged as the main trait of gender identity in subjects with eating disorders, in contrast to androgynous (high scores on masculinity and femininity scales) or undifferentiated (low scores on masculinity and femininity) scales showed by male and female subjects without eating disorders (Behar et al., 2002, 2003). Eating disordered women described themselves more often as feminine (Steiger et al., 1989) and scored significantly lower on the masculinity items on the Bem Sex Role Inventory than controls (Sitnick & Katz, 1984). A meta-analytic review showed that women and men with eating disorders reported higher levels of femininity and lower of masculinity than normal controls. However, the relationship between gender role orientation and eating pathologies was small and the studies reviewed were quite heterogeneous methodologically, i.e. in terms of diagnostic criteria of anorexia or bulimia nervosa and inclusion of clinical (small samples) and nonclinical populations (mainly college students) (Murnen & Smolak, 1997). Other authors have analysed the role of femininity in eating disorders with largely similar results (Cotrufo et al., 2007).

However, some studies do not support the view that femininity is a risk factor for the development of an eating pathology. For example, in a study, carried out by Lewis & Johnson (1985) normal control women scored higher than bulimic patients on the femininity scale, so the bulimic participants did not show more feminine self concepts than healthy women. However, when subjects were classified into the four gender role types suggested by Bem (1977), the authors found more bulimic women in the "undifferentiated" category and more normals into the "androgynous" category. They concluded that this pattern could be an indicator of low self-esteem or bulimic patients' difficulties with self-definition. Similarly, in a study carried out on 68 women with anorexia nervosa and 123 women with bulimia nervosa (Hepp et al., 2005), a negative relationship between masculinity and Drive for Thinness, Bulimia and Body Dissatisfaction Eating Disorder Inventory scales was, while femininity was not associated with unhealthy eating attitudes and behaviors. However, when masculine and feminine traits were considered together, in term of the four gender role orientation categories suggested by Bem (1977), subjects with high levels of "androgyny" reported lower levels of eating disorder symptomatology than "undifferentiated" individuals, who showed higher levels of symptoms. Similarly, Behar et al. (2001) found more "androgynous" women in the control group (with no eating disorders) if compared with the eating disordered sample.

Other types of relationships between sex-role orientation and eating disorders have also been reported. In some studies, a higher masculinity is associated with higher levels of abnormal eating attitudes and behaviors (Cantrell & Ellis, 1991; Pritchard, 2008), and not in others (Williams & Ricciardelli, 2001).

Results reported in the literature on gender role orientation and eating pathology are rather contradictory and a comprehensive interpretation of those remains difficult. Methodological and theoretical heterogeneity across studies suggest the need for more accurate theorizing and more careful operational definitions (Murnen & Smolak, 1997).

6. Eating disorders and gender identity disorders

If it is true that it is not homosexuality *per se* that acts as a risk factor in developing an eating disorder, but rather the feminine component of sexuality, we should expect to find an association between femininity and eating disorder symptoms, regardless of biological gender, or sexual orientation of the subject. Consequently, it would be acceptable to assume a greater vulnerability to eating disorders in men who experience a strong and persistent identification with the opposite sex and who live a constant discomfort with their biological sex or sense of alienation from the sexual role of that sex, in other words in those men who suffer from a gender identity disorder (American Psychiatric Association, 2000).

The evidence of a possible coexistence between gender identity disorders and eating disorders comes from published single case studies (Fernández-Aranda et al. 2000; Hepp & Milos, 2002).

For example, Winston et al. (2004) have reported two cases of anorexia nervosa and gender identity disorder in biological males who accessed to an eating disorders service.

Vocks et al. (2008) have carried out one of the few existing studies (on a moderate sample size), to our knowledge, to discover whether individuals with a gender identity disorder (88 male-to-female transsexuals and 43 female-to-male transsexuals) differ from controls of both sexes (56 males and 116 female) and from eating-disordered individuals (62 females) in terms of eating and body image disturbances. The authors found that male-to-female transsexuals reported a higher degree of disturbed eating behavior and body image than controls of both sexes. In this regard and in contrast to male-to-female transsexuals, female-to-male transsexuals did not differ from female controls but only from male controls.

Male-to-female transsexuals performed more body checking than did female-to-male transsexuals; however, no further differences emerged between the two groups. Finally, both male-to-female transsexuals and female-to-male transsexuals showed a significantly lower degree of body image and eating disorder pathologies on each scale compared to the females with eating disorders.

Starting from those evidences, the authors have hypothesized that people with a gender identity disorder, especially male-to-female transsexuals, have a significantly higher risk of developing an eating disorder. So, it would be desirable to verify, through further studies, if these data can be confirmed, in particular datum if the indication that biological male individuals with gender identity disorders are at enhanced risk of developing eating disturbances can be empirically confirmed. Since literature on eating disorders reports a relationship between femininity and eating disorder pathology in individuals without gender identity disorder, in our opinion, it would be interesting to examine if there is an association between gender role orientation and eating disorders in individuals with gender identity disorder too.

7. Conclusion

Is it possible to attempt a discussion of the data we have reported?

Can these empirical evidences be included in a theoretical construct, which may give these figures a meaning?

The empirical evidence of a positive correlation between femininity and eating disorders symptoms is, in our opinion, full of implications and also provides relevant insights from a theoretical perspective.

What is it that links eating disorders and feminine sexuality? Is the hypotheses of the thinness has female ideal body shape promoted by media sufficient to give us an answer?

Is the social-cultural role progression of women involved, since the beginning of ‘900? Can we argue a reaction of the femininity, starting from the feminist movement in ‘60s, years of the great increasing of eating disorders incidence, which modify the female ideal body shape?

In a recent study, we described the importance of pubertal body transformation (Cotrufo et al., 2007) especially for female, in the eating disorders onset: it could be the “embodied” femininity itself that causes distress?

In our opinion, the answer could be the rejection of femininity/passivity, and the failure, by contemporary adolescents, of identification process in their mothers that seems to be the core of eating disorders. It is possible that this relationship is also true for males, because there is not always correspondence between psychological sex and anatomical sex: the first is not the simple cast of the second. It may be that anorexia is a disease of the femininity, rather than a disease of the female gender (Cotrufo, 2005).

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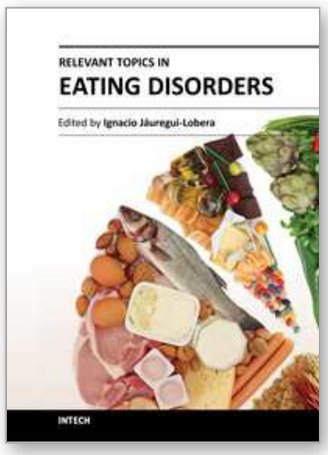

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Eating disorders are common, frequently severe, and often devastating pathologies. Biological, psychological, and social factors are usually involved in these disorders in both the aetiopathogeny and the course of disease. The interaction among these factors might better explain the problem of the development of each particular eating disorder, its specific expression, and the course and outcome. This book includes different studies about the core concepts of eating disorders, from general topics to some different modalities of treatment. Epidemiology, the key variables in the development of eating disorders, the role of some psychosocial factors, as well as the role of some biological influences, some clinical and therapeutic issues from both psychosocial and biological points of view, and the nutritional evaluation and nutritional treatment, are clearly presented by the authors of the corresponding chapters. Professionals such as psychologists, nurses, doctors, and nutritionists, among others, may be interested in this book.

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