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Childhood maltreatment in subjects with male-to-female gender identity disorder

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Childhood maltreatment (CM) is quite common and constitutes a nonspecific risk factor for a range of different psychiatric symptoms during lifespan. It has been demonstrated that sexual minorities are at higher risk of maltreatment and abuse, and a high proportion of transsexual subjects report CM. The aim of this study is to evaluate the prevalence of reported CM in a clinical sample of patients with male-to-female Gender Identity Disorder (MtF GID), and to explore the relationship between these early life events, body image and different psychopathological and clinical variables. A consecutive series of 162 patients with male genotype was evaluated from July 2008 to May 2010. A total of 109 subjects (mean age 36 ± 10 years) meeting the criteria for MtF GID and giving their informed consent were considered. The occurrence of CM experiences was evaluated through a face-to-face clinical interview. Patients were asked to complete the Body Uneasiness Test and Symptom Checklist-90 Revised. More than one-fourth of patients reported CM. Maltreated subjects reported a higher body dissatisfaction and display a worse lifetime mental health. The presence of reported CM in these patients has relevant psychopathological implications, and therefore should be carefully investigated.
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Introduction

Childhood maltreatment (CM) is quite common in communities,[1–3] and there is a large consensus on its deleterious—but relatively nonspecific—consequence on adolescence and adulthood mental health.[4–11] In fact, high rates of mental disorders have been documented consistently among individuals exposed to CM. In particular, several clinical and population studies, both retrospective and prospective, suggest that CM plays a role as a predisposing factor for the later onset of different psychiatric symptoms and disorders, such as major depression, post-traumatic stress disorder, drug abuse, anxiety symptoms, dissociation, body dysmorphic and eating disorders, psychotic experiences and personality disorder.[5,12–21] Moreover, several studies have focused on the negative impact of CM on body image, both in a nonclinical sample and in subjects with eating disorders.[17,18,22]

It is often difficult to ascertain the meaningful link between CM and adult psychopathology. This is because of the frequent co-occurrence of other possible risk factors, such as other adverse life events or, conversely, of positive modifying factors (for example, success at school or in sport activities, supportive family environment). Moreover, shared genetic factors might predispose certain parents and their children toward apparently different, but actually related, manifestations of psychopathology.[23] Furthermore, these experiences are frequently assessed on the basis of subjective recall on the part of the victims, which can be exaggerated,

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underreported or even falsely reported.[13] Finally, the mechanism through which these experiences favor the onset of psychopathology is difficult to ascertain.

Gender Identity Disorder (GID) is characterized by a strong and persistent identification with the opposite sex, discomfort with one's own sex and a sense of inappropriateness in the gender role of that sex.[24] Few studies reported that GID subjects are more dissatisfied with their body than subjects nonaffected by GID, even with regard to nonsexual body parts and aspects.[25,26] As far as psychopathology is concerned, the results are mixed: whereas some studies have reported higher prevalence of Axis I and II Disorders,[27,28] others found no differences in the level of psychopathology between GID subjects and controls.[29–32] Only one study has focused on the prevalence of CM in male-to-female (MtF) GID subjects, reporting a higher prevalence of emotional abuse and neglect in comparison with psychiatric inpatients.[33] Accordingly, a previous research performed on a sample of self-defined female-to-male transsexuals found a 60% prevalence of severe child abuse.[34] Devor[34] speculated that transsexualism may be an adaptive extreme dissociative survival response to severe child abuse. On the other hand, a previous research suggested that childhood individual differences, possibly including gender atypicality, may be a causal factor of maltreatment.[35] Moreover, it has been demonstrated that sexual minorities are at a higher risk of maltreatment and abuse.[35] In particular, children with a nonconforming gender behavior may suffer reprisals from parents, as a consequence of their cross-gender behavior. Furthermore, Nuttbrock *et al*.[36] have reported that gender-related abuse is a major mental health problem among MtF transgender subjects.

Beyond speculations regarding the etiological issue, our hypothesis is that CM may modify the presentation of GID, in particular regarding associated psychopathology and body dissatisfaction.

Aims

The aims of our study are:

- to evaluate the prevalence of reported CM in a clinical sample of patients with MtF GID;
- to explore the relationships between CM, body image and different psychopathological and clinical variables.

Materials and methods

A consecutive series of 162 patients with a male genotype was evaluated for gender dysphoria in the Interdepartmental Center for Assistance to Gender Identity Disorder of Florence (CIADIG, Sexual Medicine and Andrology Unit of Florence) and in other dedicated centers in Florence from July 2008 to May 2010. Only the subjects meeting the criteria for MtF GID[24] and giving their informed consent ($n = 109$) were considered. Among the 109 subjects evaluated in the study, 52 patients were from Florence and 26, 23 and 8 from Turin, Bologna and L'Aquila, respectively. All patients provided their written informed consent. The relatively high number of subjects without a GID diagnosis is most likely depending on the fact that Italian centers could receive the referrals directly from general practitioners, without any kind of previous screening from local psychiatric services.

When comparing the 109 participants with GID diagnosis with the 53 without diagnosis, no significant differences in terms of sociodemographic (age, marital status and education level) and clinical variables (puberty onset, associated morbidities, smoking status, current drug use and current and previous substance abuse) were observed (data not shown).

Diagnosis was based on formal psychiatric classification criteria[24,37] and was performed through a face-to-face interview. All the data provided were collected as part of the clinical and psycho-diagnostic routine procedure. All subjects underwent karyotype analysis, as part of the centers' routine procedure, and all showed a 46XY genotype. The occurrence of CM was evaluated through a face-to-face clinical interview (see Appendix), assessing childhood interpersonal maltreatment in three domains: emotional abuse and/or neglect, physical abuse and/or neglect and sexual abuse. Consenting sexual experiences with peers were not included. CM was defined as a specific harmful action toward a child by adults or older children, or the omission of care that an adult has the responsibility to provide.[38] General harmful conditions, such as environmental conditions, are not included. When CM was reported, questions concerning the frequency of these experiences and the perpetrators (for sexual abuse only) involved were evaluated. Because of the relatively small sample size, when the differences between maltreated and nonmaltreated groups were analyzed, reported CM was considered as a dummy (yes/no) variable, irrespective of the kind of maltreatment.

Moreover, in order to explore significant medical history and clinical features, several specific standard questions were used, codifying the answers as a dummy variable (no/yes, 0/1), as follows:

- During childhood, having had a father with a punitive attitude: 'During childhood what was your father's attitude towards you?', rating 0 = warm, detached; 1 = punitive;
- Parents' preference for a daughter: 'In your opinion, do you think that your birth was desired?', rating 0 = yes/no, because my parents had economical difficulties/no, because my

parents already had a lot of children, 1 = no, because my parents wanted a girl;
- Conflicts within the family during childhood: 'During childhood, were there conflicts within your family?', rating 0 = no, 1 = yes;
- Need of psychiatric consultation during childhood: 'During childhood, did you ever need a psychiatric consultation?', rating 0 = no, 1 = yes;
- Cross-gender behavior during childhood: 'During your childhood, which were your favorite games and playmates and how did you want to dress?', rating 0 = not exclusive preference for female games and playmates or female clothes, 1 = exclusive preference for female games and playmates and for female clothes;
- Negative relationship with boys, during childhood: 'During your childhood, how was your relationship with boys?', rating 0 = positive or neutral, 1 = negative;
- Attraction toward females during childhood: 'During your childhood, who was the first person you felt attracted to?', rating 0 = a male or none, 1 = a female;
- Homosexual brothers or sisters: 'Do you have homosexual brothers/sisters?', rating 0 = no, 1 = yes;
- Maltreatment in adolescence: 'During adolescence, were you ever a victim of maltreatment or violence?', rating 0 = no, 1 = yes;
- Neutral or negative relationship with boys, during adolescence: 'During your adolescence, how was your relationship with boys?', rating 0 = positive, 1 = neutral or negative;
- Psychiatric disorders, lifetime: 'Have you ever suffered from psychiatric disorders?', rating 0 = no, 1 = yes;
- Relatives' psychiatric disorders: 'Have your relatives ever suffered from psychiatric disorders?', rating 0 = no, 1 = yes;
- Significant romantic relationships, lifetime: 'Have you ever had a significant romantic relationship in your life?', rating 0 = no, 1 = yes;
- Daily prostitution (before sex reassignment surgery (SRS): 'Have you ever prostituted yourself daily?', rating 0 = no, 1 = yes;
- Sexual encounters with females, lifetime: 'Have you ever had a sexual encounter with females?', rating 0 = no, 1 = yes;
- Exclusive sexual attraction towards males: 'During your life, to whom are/were you sexually attracted?', rating 0 = not exclusively males or not males, 1 = males;
- Exclusive sexual attraction towards females: 'During your life, to whom are/were you sexually attracted?', rating 0 = not exclusively females or not females, 1 = females;
- Sexual attraction towards both males and females: 'During your life, to whom are/were you sexually attracted?', rating 0 = exclusively males or exclusively females, 1 = both males and females;
- Extreme gender dysphoria, before any reassignment treatment: 'Do/did you have deep disgust in looking at yourself in the mirror, do/did you feel uncomfortable if your partner, during a sexual encounter, sees/saw you naked or caresses/caressed you, and do/did you try to hide your sexual features?', rating 0 = never or sometimes, 1 = always.

Childhood was considered as the period of life between birth and 11 years, and adolescence as the period between 12 and 19 years. Social class was assessed through information about educational level and employment status. In particular, social class was considered low if the educational level was lower than 8 years and the subject was unemployed.

A total of 95 patients, enrolled after November 2008, were also asked to complete the Body Uneasiness Test (BUT[39]) and the Symptom Checklist-90 Revised (SCL-90-R[40]). Those who completed the questionnaires did not differ significantly from the rest of the sample in any clinical (including puberty onset, associated morbidities, smoking status, current drug use, current and previous substance abuse or hormonal treatment therapy) or sociodemographic parameters (including age, marital status and education level; data not shown).

The BUT is a self-rating scale exploring different areas of body-related psychopathology, including dissatisfaction with the body and its weight (weight phobia); avoidance; compulsive control behavior (compulsive self-monitoring); experience of separation and strangeness from the body (depersonalization); and specific worries for certain body parts, characteristics or functions. Subjects were asked to rate 34 different body image experiences (BUT A) and 37 body parts (BUT B) on a 6-point Likert-type scale (from 1 = never to 6 = always), indicating how often they happen to dislike each experience or each body part. Higher scores indicate greater body uneasiness. BUT scores were analyzed by considering the total score of the test (Global Severity Index), the number of body parts disliked (positive symptoms total) and the mean intensity of dislike of all disliked body parts (Positive Symptom Distress Index).[41] The internal consistency of BUT is satisfactory in terms of both the significant homogeneity (indicated by the Item-Total Correlations) and the clearly one-dimensional structure shown by each of the subscales according to the analyses of the main components. The levels of Cronbach's α coefficients range between 0.69 and 0.90. The test–retest reliability is satisfactory, as well as the correlation coefficients are >0.7.[39]

The SCL-90-R is a measure of the psychological state using question items that ask, on a 5-point scale, how much a certain problem has bothered the subject over the past 7 days, allowing nine primary symptom scales and three global indices of distress

to be derived. In particular, the nine primary symptom scales are: somatization, obsessive–compulsive, interpersonal sensitivity (feelings of personal inadequacy and inferiority), depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism.[40] The internal consistencies (coefficient α) concerning the nine primary symptom scales range from a low of 0.77 for psychoticism to a high of 0.90 for depression.[42] Test–retest reliability has been reported at 0.80 to 0.90 with a time interval of 1 week.[40] Evidence for the validity of the SCL-90-R was put forward by Derogatis.[40]

Moreover, patients were asked to specify any current pharmacological treatment. In particular, among psychoactive medications, we considered: benzodiazepines, selective serotoninergic reuptake inhibitor antidepressants, serotoninergic–noradrenergic reuptake inhibitor antidepressants, benzamides and antipsychotic agents, and mood stabilizers.

Statistical analysis

Data are expressed as median (quartiles) when non-normally distributed, as mean ± s.d. when normally distributed and as percentage when categorical. Kolmogorov–Smirnov test was used to test the parameter distribution. Correlations were assessed using Pearson's or Spearman's method for normally or non-normally distributed data, respectively. In addition, unpaired two-sided Student's *t*-test was used for comparison of means of normally distributed parameters. In all other cases, Mann–Whitney *U*-test was used for comparisons between groups. Logistic regression and multiple linear regression were used for multivariate analysis, whenever appropriate. All statistical analyses were performed on SPSS 17 for Windows (SPSS, Chicago, IL, USA).

Results

Frequency of CM

The mean age of the subjects included in the study was 36 ± 10 years. Out of 109 subjects, 30 (27.5%) reported CM experiences, often repeated (57.7%, $n=17$), represented by sexual abuse in half of the cases ($n=15$), by physical abuse and/or neglect in 23.3% of the case ($n=7$) and by emotional abuse and/or neglect in 26.7% of the cases ($n=8$).

Considering subjects reporting sexual abuse ($n=15$), 2 subjects (13.3%) reported that the perpetrator was an unknown person, 9 subjects (60%) reported a family friend, 3 subjects (20%) reported a family member and 1 subject (6.7%) reported a parent.

The sociodemographic features, medical history characteristics and clinical features of the sample, according to reported or not reported CM, are shown in Table 1.

Differences in medical history and clinical parameters between subjects with and without CM

When compared with subjects who did not report CM, subjects who reported CM were older (34.9 ± 9.8 and 40.5 ± 9.8, respectively; $P<0.01$), and more often treated with mood stabilizers ($P<0.05$). No differences between the two groups were found in other sociodemographic and clinical variables, such as gender dysphoria level (extreme/not extreme), cross-gender behavior during childhood, sexual preference (assessed by means of a specific question), hormonal and surgical treatment and social class, even after adjustment for age and current psychotropic drugs (see Table 1). Data were adjusted for these control variables because the two subsamples differ in these categories. Conversely, we observed a significant difference in several medical history and clinical parameters, even after adjustment for the aforementioned factors (see Table 2). In particular, about childhood, maltreated subjects more often reported having had a father with a punitive attitude, parents' preference for a daughter, conflicts within the family, the need for psychiatric consultation, a negative relationship with boys and an attraction towards females. Considering adolescence, they reported more often having been victims of maltreatment, and having had a neutral or negative relationship with boys. Regarding familiar factors, subjects with CM reported more often having or having had a relative with a psychiatric disorder, and having homosexual brothers/sisters. Furthermore, they reported more frequently the occurrence of a sexual encounter with females, the absence of any significant romantic relationship during lifetime, and lifetime daily prostitution (before SRS). Finally, they reported a higher prevalence of psychiatric disorders.

Differences in psychometric tests between subjects with and without CM

Differences between the two groups in the psychometric test scores, after adjustment for age, current psychotropic drugs, current hormonal therapy and SRS, are reported in Table 3. Subjects were analyzed at any time of transitional stage. We are aware that transitional stage influences body image perception and satisfaction. Moreover, the presence and the level of psychopathological symptoms may be related to transitional stage. In order to control the effects of transitional stage on these variables, we have adjusted not only for age and psychotropic drugs, but also for current hormonal therapy and SRS. After adjustment, we observed that subjects reporting CM scored significantly higher on the following BUT items: Global Severity Index, specific worries for certain body parts, characteristics, or functions, avoidance, compulsive control behavior, depersonalization, and positive symptoms total.

Table 1 Sociodemographic features, medical history characteristics and clinical features of the total sample and divided according to reported or not reported childhood maltreatment, as derived from patient history

	All N = *109*	*No childhood maltreatment* N = *79*	*Childhood maltreatment* N = *30*
Marital status, % (number)			
Unmarried	86.2 (94)	87.3 (69)	83.3 (25)
Married	5.5 (6)	5.1 (4)	6.7 (2)
Widowed	0.9 (1)	0 (0)	3.3 (1)
Divorced	7.3 (8)	7.6 (6)	6.7 (2)
Current stable relationship, % (number)	36.7 (40)	36.7 (29)	36.7 (11)
Education, % (number)			
None/primary school	33.9 (37)	31.6 (25)	40 (12)
Secondary school	47.7 (52)	49.4 (39)	43.3 (13)
University	18.3 (20)	19 (15)	16.7 (5)
Employment, % (number)			
Student	4.6 (5)	6.3 (5)	0 (0)
Retired	5.5 (6)	2.5 (2)	13.3 (4)
Employed	60.5 (66)	59.5 (47)	63.3 (19)
Unemployed	29.4 (32)	31.6 (25)	23.3 (7)
Low social level, % (number)	10.1(11)	12.7 (10)	3.3 (1)
Maltreatment during adolescence	23.8 (26)	13.9 (11)	50 (15)
Current psychiatric drug use, % (number)	13.8 (15)	11.4 (9)	20 (6)
Hormonal therapy, % (number)			
Current	70.6 (77)	68.3 (54)	76.7 (23)
In the past	15.6 (17)	16.5 (13)	13.3 (4)
Never	13.8 (15)	15.2 (12)	10 (3)
Factor related to transition stage			
SRS performed	25.7 (28)	21.5 (17)	36.7 (11)
SRS not performed	74.3 (81)	78.5 (62)	63.3 (19)
Exclusive attraction toward males	85.2 (92)	88.3 (69)	76.7 (23)
Exclusive attraction toward females	0.9 (1)	1.3 (1)	0 (0)
Attraction toward both males and females	11.1 (12)	7.8 (6)	20 (6)
Attraction toward neither males nor females	2.8 (4)	2.6 (3)	3.3 (1)
Cross-gender behavior during childhood	53.2 (58)	49.4 (39)	63.3 (19)
Extreme gender dysphoria	61.5 (67)	58.2 (46)	70 (21)

Abbreviation: SRS, sex reassignment surgery.
Data are expressed as percentages (the absolute number of subjects is reported in brackets).

Moreover, they scored higher on the SCL-90-R obsessive–compulsive scale ($P<0.05$).

When the same statistical process was applied for every different kind of CM, no associations retained statistical significance (data not shown).

Discussion

This study explores the relationship between reported CM and the psychopathological features of subjects seeking medical care for GID.

We found that any reported CM identifies subjects with a higher level of body image dissatisfaction, worse psychosocial adjustment during childhood and worse lifetime mental health, even in a sample of GID subjects.

In particular, we observed that maltreated subjects reported a higher body dissatisfaction, as shown by higher scores on BUT general parameters. It has been hypothesized that abusive experiences may result in body dissatisfaction, intense feelings of body shame and body image distortion.[43] Moreover, we observed that subjects reporting CM have a higher body compulsive self-monitoring and worry about certain body parts, and higher avoidance. Interestingly, they also report a higher BUT depersonalization score, which describes the experience of separation and strangeness from the body. This is not surprising, as a growing amount of data report the association between CM and adult dissociative psychopathology.[16,44–49] It has been suggested that the development of dissociation, reflecting severe deficits in the integration of the self, can be an outcome of CM,[50] and severity and chronicity of maltreatment have been found to predict future levels of dissociation.[51] In particular, a meta-analysis, evaluating 26 studies with 2108 subjects involved, reports a positive association between CM and dissociation regardless of the type of abuse.[52] On the other hand, the association between

Table 2 Differences in clinical parameters between subjects who reported or did not report childhood maltreatment

Clinical parameters	*No childhood maltreatment (n = 79)*	*Childhood maltreatment (n = 30)*	P-*value*	*HR, 95% CI*[§]	P-*value*[§]
Familiar factors (%)					
Relatives' psychiatric disorders	18.2	45.8	0.021	1.05 (1.01–1.10)	**0.019**
Homosexual brothers/sisters	3.9	20	0.007	5.30 (1.15–24.48)	**0.033**
Childhood factors (%)					
Punitive father	6.5	30	0.001	7.13 (2.02–25.18)	**0.002**
Parents preference for a daughter	2.6	13.3	0.03	6.29 (1.02–38.59)	**0.047**
Conflicts within the family	24.4	50	0.01	3.30 (1.28–8.52)	**0.014**
Need for psychiatric consultation	29.5	53.3	0.021	3.18 (1.23–8.21)	**0.017**
Negative relationship with boys	17.9	36.7	0.039	3.15 (1.11–8.95)	**0.031**
Attraction toward females	14.5	33.3	0.028	3.45 (1.18–10.11)	**0.024**
Adolescence factors (%)					
Maltreatment	13.9	50	0.000	7.07 (2.49–20.13)	**0.000**
Neutral or negative relationship with boys	41	70	0.007	4.09 (1.51–11.03)	**0.005**
Lifetime factors (%)					
Psychiatric disorders, lifetime	37.2	66.7	0.006	3.39 (1.25–9.22)	**0.017**
Sexual intercourse with female, lifetime	18.9	46.7	0.004	3.15 (1.14–8.67)	**0.026**
Significant romantic relationships, lifetime	83.3	63.3	0.025	0.35 (0.13–0.99)	**0.048**
Daily prostitution, lifetime (pre-SRS)	14.1	34.5	0.018	3.00 (1.06–8.50)	**0.038**

Abbreviations: CI, confidence interval; HR, hazards ratio; SRS, sex reassignment surgery.
Data are expressed as percentage and [§]logistic regression analysis after adjustment for age and current psychotropic drugs.
The bold *P*-values indicate significance.

Table 3 Differences in body uneasiness test and symptoms checklist-90 revised score between subjects who reported and did not report childhood maltreatment

Body Uneasiness Test	*No childhood maltreatment*	*Childhood maltreatment*	P-*value*	*HR, 95% CI*[§]	P-*value*[§]
Global severity index	1.29 (0.73–2.39)	1.88 (0.94–3.29)	0.09	1.97 (1.17–3.30)	**0.010**
Weight phobia	1.75 (1.12–2.75)	2.06 (1.40–3.16)	0.29	1.50 (0.92–2.41)	0.100
Body image concerns	1.72 (0.64–3.03)	2.40 (1.05–3.64)	0.06	1.64 (1.08–2.50)	**0.020**
Avoidance	0.58 (0.00–1.87)	1.67 (0.33–2.50)	0.07	1,58 (1.05–2.38)	**0.030**
Compulsive self-monitoring	1.17 (0.67–2.17)	1.33 (0.66–2.62)	0.51	1.66 (1.02–2.68)	**0.040**
Depersonalization	0.80 (0.00–2.25)	1.80 (0.10–3.20)	0.08	2.01 (1.24–3.25)	**0.004**
Positive symptoms total	12 (7–20)	19 (11–27)	0.03	1.08 (1.02–1.14)	**0.007**
Positive symptom distress index	2.82 (2.25–3.50)	3.04 (1.97–3.42)	0.99	0.94 (0.55–1.59)	0.810
Symptoms Checklist-90 Revised					
General symptomatic index	0.47 (0.22–0.76)	0.63 (0.36–1.26)	0.15	1.98 (0.89–4.41)	0.090
Positive symptom total	30 (17.25–46)	31.5 (17.75–63.75)	0.27	1.02 (0.99–1.04)	0.150
Positive symptom distress index	1.36 (1.10–1.78)	1.55 (1.25–2.14)	0.07	2.14 (0.91–5.02)	0.080

Abbreviations: CI, confidence interval; HR, hazards ratio; SRS, sex reassignment surgery.
Data are expressed as median (quartiles) and [§]logistic regression analysis after adjustment for age, current psychotropic drugs, current hormonal therapy and SRS.
The bold *P*-values indicate significance.

CM and body-related concerns could also be related to a greater neuroticism, which makes these subjects more likely to describe both their childhood experiences and their body issues in negative terms.[53] If we focus on the relationship between CM and gender dysphoria, CM may have a causal role on the pathogenesis of gender dysphoria; however, the opposite has also been considered.[34,35,54] In particular, it has been suggested that more gender-variant children are more likely to be maltreated.[35] In fact, different researches have demonstrated that bi- or homo-sexual adults are more likely than heterosexuals to report a childhood history of parental and peer maltreatment.[55] Moreover, it has been reported that gender-related abuse is a major mental health problem among MtF transgender.[36] Regardless of this evidence, we did not find any association between CM and gender dysphoria onset or sexual preference, probably because the gender-related stigmatization, often already present during childhood, may became even stronger during adolescence. Despite the lack of association between the

kind of self-reported sexual preference and CM, subjects with CM more often reported an attraction toward females during childhood and reported having had sexual encounters with females in their lifetime. This could indicate that our measure of sexual preference was not accurate enough and did not take into account all the components of the sexual preference dimension. Moreover, as recently stated by de Vries *et al.*,[56] in GID subjects 'sexual orientation may be obscured by gender dysphoric feeling'. It is also important to note that in our sample, no differences in gender dysphoria level (extreme/not extreme) were found. In fact, given the impact of CM on body image, its influence on gender dysphoria level could have been expected, but this is not the case. However, the cross-sectional nature of our study does not allow us to investigate a causal relationship between CM and GID, if any.

Concerning the psychosocial variables, differences found between subjects reporting and not reporting CM are not surprising, as a growing amount of literature underlines that CM can affect child and adult functioning.[4,10] In particular, we found a higher rate of need for psychiatric care in childhood and a higher level of lifetime psychiatric disorders, as previously observed.[5,9,13,57] These data may be important in studying the occurrence of psychopathology in GID subjects. In fact, the presence of CM in GID samples is quite frequent and may in part explain the nonhomogeneity of results regarding this topic, and should therefore be taken into account in future research. Furthermore, subjects with CM more often reported conflicts within the family during childhood and described their father as having a more punitive attitude. A poor relationship with the respondent's parent is also associated with adult psychopathology,[58] and could represent *per se* a form of emotional maltreatment.[59] Moreover, it has been demonstrated that maladaptive family functioning is a strong prediction of psychological maladjustment (stronger than other childhood adversities).[57] Furthermore, children exposed to interparental violence have a higher risk of mental health disorder in adulthood than those not exposed.[60] In our sample, subjects with CM reported the preference of parents for a daughter. Parental influences, such as mother's preference for a daughter, has been hypothesized to be important in the etiology of GID,[61] through reinforcing cross-gender behavior. On the other hand, it has been speculated that this wish may also be induced by child-related factors, especially in unstable and vulnerable parents.[62] These could explain the positive association, in our sample, between CM and the preference of parents for a daughter.

As far as adolescence is concerned, we found an association between childhood and adolescence maltreatment. This association might be considered in light of the difficulties for a child who experienced a maltreatment to become capable of self-protection.[63] On the other hand, it may be speculated that the same kind of maltreatment, perpetrated often by a member of the family, could have been perpetrated during adolescence. Furthermore, in our sample, subjects who more often reported CM showed a higher rate of psychiatric disorders. These data are in agreement with several investigators reporting higher rates of anxiety disorders, depression, suicide ideation and attempts and self-harm behaviors among young adults and adults with childhood history of maltreatments.[57,64,65] Considering social functioning, subjects with CM reported a worse relationship with male peers during childhood and adolescence. These results seem to confirm previous studies, reporting an association between CM and a poor social functioning in early and middle childhood. In particular, children exposed to maltreatment often avoid or withdraw from social interaction and are less popular with peers.[66,67] However, these data should be considered in light of the special population studied: recently Wallien *et al.*[68] empirically demonstrated, in a sample of gender dysphoric children and their classmates, that gender dysphoric children do not have more interpersonal difficulties, but just less same-sex and more opposite-sex friends. Therefore, beyond the GID-related preference for opposite-sex friends, CM affects the capacity to establish satisfying relationships with peers.

Dealing with adulthood, subjects with CM reported a lower occurrence of significant romantic relationship, confirming that CM is negatively associated with the ability to establish and maintain healthy intimate relationships in adulthood.[67] Moreover, subjects with CM reported more frequently daily prostitution (before SRS), suggesting possible serious difficulties in integrating at work.

Our study has several limitations. First of all, all the information regarding CM is based on retrospective recall and the measurement of maltreatment is based on subjective experience.[69] As sensitivity to maltreatment may differ widely among individuals, this factor could represent a bias. Moreover, in retrospective reports, there is always a risk of memory biases. Current mood state and current psychopathology, different cultural background and 'search for meaning' (by which the subjects tend to search the reasons for the present distress in their past experiences) have all been reported to possibly affect the accurate retrieval of past events.[38,69,70] Furthermore, retrospective studies obtaining data about CM from adults are likely to underestimate the maltreatment because of forgetting. Therefore, it may be possible that we have undercaptured the extent of CM in the sample. Moreover, it is likely that, depending on the criteria of access to treatment in a specific clinical facility, attenders could adjust their biographical data.[71]

However, some evidence of the reliability of retrospectively reported maltreatment has also been presented.[72,73] In fact, it should be taken into account that clinical definitions of maltreatment are more likely to give weight to the victim's perception of the incident in defining an act as maltreatment and, from a clinical perspective, the meaning and interpretation an individual gives about an experience are to be considered highly relevant in determining whether it constitutes maltreatment.[74] The second major limitation is regarding the difference in the qualitative nature of maltreatment items, which might have influenced our results in a critical way. In fact, because we considered just the presence or absence of CM, the group reporting CM is composed of subjects with different kinds and severity degrees of maltreatment. However, some clinicians think that the categories of emotional, physical and sexual abuse are not discrete at all, because many forms of abuse overlap.[38]

Another pitfall of our study is that cross-sectional observations do not allow investigations of causal relationships between CM and GID.

Moreover, having a control group (that is, no-GID sample) would have helped in reaching more interesting results and conclusions.

Some more limitations in the methods should be mentioned:

- Neither the kind of maltreatment nor the perpetrator gender were specified;
- Data concerning gender dysphoria have not been explored with specific instruments, considering all its different dimensions;[75]
- We did not have access to socioeconomical-level data of the sample, which has been demonstrated to affect the occurrence of CM. However, the educational level and employment status was not associated with CM.

Finally, the sample was not representative of all MtF GID patients, because an unknown proportion of these subjects do not undergo professional assessment. Nevertheless, it can be regarded as representative of GID patients seeking professional treatment in accordance with the Standards of Care of the Harry Benjamin Gender Dysphoria Association.[37]

Conclusions

Our results suggest that the history of CM is associated with body image dissatisfaction, worse psychosocial adjustment during childhood and worse lifetime mental health in subjects with MtF GID. Therefore, this study extends to patients with GID the meaningful association between CM and different adverse adult mental outcomes, already observed in other groups of patients. The presence of reported CM in these patients has relevant psychopathological implications, and consequently should be carefully investigated. In addition, approaching thoroughly the issue of CM could enable the patients to reflect about its impact on their lives and, eventually, its relevance on treatment decision.

Conflict of interest

The authors declare no conflict of interest.

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Appendix

Childhood maltreatment, as derived from a clinical interview. The way of raising the questions is reported along with its relative scoring (in italics).

(1) Specific maltreatment

Emotional abuse:
'During your childhood, were you ever shouted at/ insulted/ criticized/threatened/ignored/humiliated?'
Rating: 0 = no, 1 = yes.

Emotional neglect:
'During your childhood, did you have detached and uninvolved parents?'
Rating: 0 = no, 1 = yes.

Physical abuse:
'During your childhood, were you ever beaten/ kicked/burnt/suffocated/cut/shot/locked up?
Rating: 0 = no, 1 = yes.

Physical neglect:
'During your childhood, were you ever deprived of food/clothing/shelter/medical care?'
Rating: 0 = no, 1 = yes.

Sexual abuse:
'During your childhood, were you ever sexually molested by an adult, with or without physical contact?'
Rating: 0 = no, 1 = yes.

(2) Frequency

'Was this experience perpetuated several times?'
Rating: 0 = no, 1 = yes.

(3) Perpetrator (only for sexual abuse)

'Was this experience perpetrated by an unknown subject?'
Rating: 0 = no, 1 = yes.

'Was this experience perpetrated by a family friend?'
Rating: 0 = no, 1 = yes.

'Was this experience perpetrated by a family member?'
Rating: 0 = no, 1 = yes.

'Was this experience perpetrated by one or both parents?'
Rating: 0 = no, 1 = yes.