Body uneasiness in gender dysphoria

Giovanni Castellini
PhD, MD

Sexual Medicine and Andrology Unit, Department of Experimental, Clinical and Biomedical Sciences
Psychiatric Unit, Department of Neuropsychiatric Sciences

Florence University School of Medicine, Italy
Agenda

- Which is the meaning of body image disturbance in gender dysphoria?

- Which are the consequences of body uneasiness, in terms of pathological behaviors and psychopathology?

- How to manage body uneasiness and its consequences?
I hate my body, I always think how to change it
Body uneasiness

General population

Normative discontent

Body Image

Feeding and Eating Disorders

Gender Dysphoria

Depression

Psychosis

Premenstrual syndrome

Sexual Dysfunctions

Self-harm

Dysmorphophobia

Social Anxiety
Agenda

- Which is the meaning of body image disturbance in gender dysphoria?
- Which are the consequences of body uneasiness, in terms of pathological behaviors and psychopathology?
- How to manage body uneasiness and its consequences?
Body image

“The picture of our own body which we form in our mind, that is to say, the way in which the body appears to ourselves”

Schilder (1950)
BODY IMAGE DISTURBANCE:
“a disturbance in the way in which one’s body weight or shape is experienced”

Historical Influences

Cultural socialization

Interpersonal Experiences

Physical Characteristics

Personality Attributes

Proximal Events and Processes

Body Image Schemas and Attitudes

(Investment and Evaluation)

Appearance-Schematic Processing

Internal Dialogues

Body Image Emotions

Adjustive Self-Regulatory Strategies and Behaviours

(Cash TF, 2004)
DSM 5: Feeding and eating disorders

- Binge eating
- Purging behaviors
- Restraint
- Sexual dysfunction
- Avoidant behaviors
- Body checking
- Body image disturbance
DSM 5: Gender dysphoria

Gender dysphoria refers to the distress that may accompany the incongruence between one's experienced or expressed gender and one's assigned gender.
…higher degree of disturbed body image among MtF compared to controls of both sexes
Body uneasiness test

100 gender dysphoria persons

- Female to Male; n: 50; 50%
- Male to Female; n: 50; 50%

No GRS
- GRS 50%

No GRS
- GRS 44%

Binge Eating Disorder
- n: 36; 41%

Anorexia Nervosa;
- n: 26; 29%

Bulimia Nervosa;
- n: 26; 30%

GRS: Genital reassignment surgery

107 healthy controls


GRS: Genital reassignment surgery
Gender Identity Disorder and Eating Disorders: Similarities and Differences in Terms of Body Uneasiness

Elisa Bandini, MD,∗ Alessandra Daphne Fisher, MD,∗ Giovanni Castellini, MD, PhD,† Carolina Lo Sauro, MD,‡ Lorenzo Lelli, MD,§ Maria Cristina Meriggioola, MD,∥ Helen Casale, Psy D,*, Laura Benni, MD,*, Nalika Ferruccio, MD,∥ Carlo Faravelli, MD,§ Davide Dettore, Psy D,§ Mario Maggi, MD,∗ and Valdo Ricca, MD†

- Gender Dysphoria persons without GRS
- Healthy controls
Gender Identity Disorder and Eating Disorders: Similarities and Differences in Terms of Body Uneasiness

Elisa Bandini, MD,* Alessandra Daphne Fisher, MD,* Giovanni Castellini, MD, PhD,† Carolina Lo Sauro, MD,‡ Lorenzo Lelli, MD,‡ Maria Cristina Meriggiola, MD,§ Helen Casale, Psy D,* Laura Benni, MD,* Naika Ferruccio, MD,§ Carlo Faravelli, MD,§ Davide Dettore, Psy D,§ Mario Maggi, MD,* and Valdo Ricca, MD†

- Gender Dysphoria persons without GRS
- Eating Disorders
Which is the meaning of body image disturbance?

- Gender Dysphoria persons without GRS
- Eating Disorders
### Similarities and differences between anorexia nervosa patients and controls in body image visual processing

<table>
<thead>
<tr>
<th></th>
<th>Anorexia Nervosa Restricting subtype</th>
<th>Healthy Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n: 18</td>
<td>n: 19</td>
</tr>
<tr>
<td>Age (years, mean ± SD)</td>
<td>24.94 ± 7.75</td>
<td>26.84 ± 1.92</td>
</tr>
<tr>
<td>BMI (mean ± SD)</td>
<td>16.37 ± 1.85 (*)</td>
<td>20.75 ± 1.77 (*)</td>
</tr>
<tr>
<td>Years of illness (mean ± SD)</td>
<td>6.26 ± 7.28</td>
<td>___</td>
</tr>
</tbody>
</table>

Results f-MRI

Body Image Perception: mean activation in patients and controls

<table>
<thead>
<tr>
<th>Anorexia Nervosa patients (n: 18)</th>
<th>Healthy Controls (n: 19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior and inferior parietal lobule (BA 7, 40)</td>
<td></td>
</tr>
<tr>
<td>Middle Occipital (BA37), Inferior Occipital (BA 19), inferior temporal Gyrus (BA 19)</td>
<td></td>
</tr>
<tr>
<td>Inferior Frontal Gyrus (BA 44, 46)</td>
<td></td>
</tr>
</tbody>
</table>

Prefrontal activation and psychopathology

Right Dorsolateral Prefrontal Cortex (BA: 47)
oversize condition

Anorexia Nervosa patients

Healthy Control subjects
Dorsolateral Prefrontal Cortex

Regulation of emotional impulses mediated by limbic and paralimbic structures (Miller & Cohen, 2001).

It is part of cortico-striatal loops, which contribute not only to executive functions, accounting for perfectionist personality traits (Roberts et al., 2007).

A key component of a network sub-serving awareness of self and metacognitive evaluation of the self (Schmitz et al., 2004; Johnson et al., 2002).

“Awareness and experience of the body are the original anchors of our developing sense of self. The mind continues to mature until it can represent and reflect upon its own contents. Ultimately, the self becomes abstracted from the body and is intellectualized as the self-conscious mind.”

Marcel Kinsbourne. In Body Image. Cash & Pruzinsky; 2002
Body and identity in eating disorders

I recognize myself in a thin body, taking weight under control
Body and identity in gender dysphoria

I would recognize myself in a body which mirrors my gender identity
Which is the meaning of body image disturbance in gender dysphoria?
The Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults


Which is the meaning of body image disturbance in gender dysphoria?

Maggi et al., unpublished data

R² = 0.39; p < 0.001
R² = 0.068; p = 0.03

Male to Female without GRS n: 78

Female to Male without GRS n: 40

Body Uneasiness

Gender Dysphoria Questionnaire
Agenda

- Which is the meaning of body image disturbance in gender dysphoria?

- Which are the consequences of body uneasiness, in terms of pathological behaviors and psychopathology?

- How to manage body uneasiness and its consequences?
Behavioral consequences

Male to Female without GRS

Compulsive self monitoring

Gender Dysphoria Questionnaire

Maggi et al., unpublished data

$r^2 = 0.11$; $p = 0.008$
Behavioral consequences

Male to Female without GRS

Body shape avoidance

Gender Dysphoria Questionnaire

Maggi et al., unpublished data

\[ R^2 = 0.09; \quad p=0.014 \]
How to change my body?

Body image disturbance
- Binge eating
- Restraint
- Purging behaviors
- Avoidant behaviors
- Body checking
- Sexual Dysfunction
...MtF might experience pressure to lose body weight, and thus display a higher cognitive control on food intake, resulting in an overconcern with eating, weight, and shape.
How to change my body?

- Male to Male subjects without GRS
- 78 Male to Female subjects without GRS
- 29 Female to male subjects without GRS
- 41 Male to Female subjects after GRS

- Eating Disorder Examination questionnaire
- Restraint Concern
- Eating Concern
- Shape Concern
- Weight Concern

Fairburn & Beglin 1994
Different weight...

<table>
<thead>
<tr>
<th>FtM (n:40)</th>
<th>MtF (n:78)</th>
<th>FtM (n:29)</th>
<th>MtF (n:41)</th>
</tr>
</thead>
</table>

$t=-2.41; p=0.017$

$|t|=1.50; p=0.147$
Patological eating behaviours

- **Eating episodes in the month**: 20.8% yes, 79.2% no
- **Atempt last month**: 7.5% yes, 92.5% no
- **FtM no GRS (n: 40)**
  - Eating episodes in the month: 25.4% yes, 74.6% no
  - Attempt last month: 28.8% yes, 71.2% no
- **MtF no GRS (n: 78)**
  - Eating episodes in the month: 20.8% yes, 79.2% no
  - Attempt last month: 7.5% yes, 92.5% no
Restraint

DE-Q restraint scale

Healthy controls  FtM (n:40)  MtF (n:78)  Eating Disorders

$ t=2.13; \ p=0.034 $
Feminine gender role endorsement is a risk factor in the development of anorexia nervosa in males.

Masculine gender role endorsement is associated with musculature-related eating and body image concerns.
Is there a "real" eating disorder in gender dysphoria persons?
Male to Female: mediation model for restraint

Body uneasiness

β=0.25; p=0.027

Restraint (EDE-Q)
Male to Female: mediation model for restraint

Gender dysphoria (GIDYQ-AA)

Restraint (EDE-Q)

$\beta = 0.37; p = 0.003$
Male to Female: mediation model for restraint

Gender dysphoria (GIDYQ-AA)

BUT

Restraint (EDE-Q)

β = 0.26; p = 0.034
β = 0.37; p = 0.003
Male to Female: mediation model for restraint

Gender dysphoria (GIDYQ-AA)

β = 0.34; p = 0.007

Restraint (EDE-Q)

β = 0.29; p = 0.027

β = 0.10; p = 0.418
Agenda

Which is the meaning of body image disturbance in gender dysphoria?

What are the consequences of body uneasiness, in terms of pathological behaviors and psychopathology?

How to manage body uneasiness and its consequences?
How to change my body...

Gender dysphoria

Genital reassignment surgery

Cross-sex hormonal treatment

Body image disturbance

Discontentment with body

Gender nonconformity
Gender Dysphoria persons without GRS

Gender Dysphoria persons after GRS
Cross-sex hormonal treatment

Cross-Sex Hormonal Treatment and Body Uneasiness in individuals with Gender Dysphoria

Alessandra D. Fisher, MD PhD,* Giovanni Castellini, MD PhD,†† Elisa Bandini, MD,*
Helen Casale, MA,* Egidia Fanni, BA,* Laura Benni, MD,*† Naïka Ferruccio, MD,*†
Maria Cristina Meriggiola, MD PhD,† Chiara Maineri, MD,§ Anna Gualerzi, MD,§
Emmanuele Jannini, MD PhD,∥ Alessandro Oppo, MD,** Valdo Ricca, MD,** Mario Maggi, MD PhD,*
and Alessandra H. Rellini, PhD††
Cross-sex hormonal treatment and Body Uneasiness in individuals with Gender Dysphoria

Alessandra D. Fisher, MD PhD,* Giovanni Castellini, MD PhD,*† Elisa Bandini, MD,*
Helen Casale, MA,* Egidia Fanni, BA,* Laura Benni, MD,*† Naika Ferruccio, MD,*†
Maria Cristina Meriggiola, MD PhD,* Chiara Manieri, MD,* Anna Gualerzi, MD,*†
Emmanuele Jannini, MD PhD,* Alessandro Oppo, MD,* Valdo Ricca, MD,* Mario Maggi, MD PhD,*
and Alessandra H. Rellini, PhD†

Fig. 1. Differences in BUT-GSI Based on Gender (M vs F) and Therapy (CHT vs NoCHT)
Cross-sex hormonal treatment

Cross-Sex Hormonal Treatment and Body Uneasiness in individuals with Gender Dysphoria

Alessandra D. Fisher, MD PhD,* Giovanni Castellini, MD PhD,† Elisa Bandini, MD,*
Helen Casale, MA,* Egidia Fanni, BA,* Laura Benni, MD,† Naika Ferruccio, MD,†
Maria Cristina Meriggiola, MD PhD,* Chiara Manieri, MD,* Anna Gualerzi, MD,*
Emmanuele Jannini, MD PhD,† Alessandro Oppo, MD,‡ Valdo Ricca, MD,** Mario Maggi, MD PhD,*
and Alessandra H. Rellini, PhD†

MtF:

significant difference between subjects with and without CHT

($F(1,60)=7.14, p<0.01, \eta^2=.11$)
Cross-sex hormonal treatment: body parts

Cross-Sex Hormonal Treatment and Body Uneasiness in Individuals with Gender Dysphoria

Alessandra D. Fisher, MD PhD,* Giovanni Castellini, MD PhD,** Elisa Bandini, MD,*
Lina Casale, MA,* Egidia Fanni, BA,* Laura Benni, MD,** Naika Ferruccio, MD,*
Carolina Meriggiola, MD PhD,* Chiara Marleri, MD,* Anna Gualerzi, MD,*
Manuele Jannini, MD PhD,** Alessandro Oppo, MD,** Valdo Ficca, MD,** Mario Maggi, MD PhD,*
Alessandra H. Rellini, PhD†

† Department of Psychology, University of Padova, Padova, Italy
‡ Department of Medicine, University of Padova, Padova, Italy
§ Department of Psychology, University of Bologna, Bologna, Italy
∥ Department of Psychology, University of Florence, Florence, Italy
¶ Department of Psychology, University of Padua, Padua, Italy
Cross-sex hormonal treatment: body parts

- Chest ($\eta^2 = 0.115, p < 0.05$)
- Arms ($\eta^2 = 0.103, p < 0.05$)
- Buttocks ($\eta^2 = 0.082, p < 0.05$)
cross-sex hormonal treatment:

Body parts

Body hair ($\eta^2 = 0.072$, $p < 0.05$)

Chest ($\eta^2 = 0.115$, $p < 0.05$)

Arms ($\eta^2 = 0.103$, $p < 0.05$)

Buttocks ($\eta^2 = 0.082$, $p < 0.05$)
Cross-sex hormonal treatment: body parts

- Body hair ($\eta^2 = .072$, $p < 0.05$)
- Chest ($\eta^2 = .115$, $p < 0.05$)
- Arms ($\eta^2 = .103$, $p < 0.05$)
- Buttocks ($\eta^2 = .082$, $p < 0.05$)
- Smell ($\eta^2 = .123$, $p < 0.01$)
Cross-sex hormonal treatment: body parts

- Body hair ($\eta^2 = 0.072, p < 0.05$)
- Eyes ($\eta^2 = 0.086, p < 0.05$)
- Chest ($\eta^2 = 0.115, p < 0.05$)
- Arms ($\eta^2 = 0.103, p < 0.05$)
- Buttocks ($\eta^2 = 0.082, p < 0.05$)
- Smell ($\eta^2 = 0.123, p < 0.01$)

Male to Female, body weight and CHT

**BMI**

- No CHT
- CHT

\[ t=1.37; \ p=0.17 \]

**WAIST**

- No CHT
- CHT

\[ t=1.77; \ p=0.083 \]

Maggi et al., unpublished data
Male to Female, effect of CHT

Maggi et al., unpublished data
Male to Female, effect of CHT

BMI
WAIST

EDE-Q restraint

Maggi et al., unpublished data
Effects of cross-sex hormonal treatment

- Objective changes of the body
- Subjective perception and self representation of once own body
- Improvement of body uneasiness
- Improvement of eating psychopathology

CHT
Conclusions

- Body Uneasiness is a core dimension in gender dysphoria individuals, and it is the result of the discrepancy between anatomic body and desired body image;

- Eating psychopathology and pathological behaviors are frequent consequences of body uneasiness;

- Both hormonal and surgical interventions modifying sexually dimorphic body characteristics alleviate body uneasiness, and in turn reduce pathological behaviors.
Acknowledgement

• Mario Maggi, PhD, MD
  and
• Alessandra D Fisher, PhD, MD
• Helen Casale, MA
• Egidia Fanni, BA
• Valdo Ricca, MD
MtF: CHT and Gender Dysphoria

\[ t = 2.64; p = 0.017 \]
Male to Female, effect of hormone therapy

EDE-Q shape concern

<table>
<thead>
<tr>
<th></th>
<th>No CHT</th>
<th>CHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>2.19</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>0.034</td>
<td></td>
</tr>
</tbody>
</table>

EDE-Q restraint

<table>
<thead>
<tr>
<th></th>
<th>No CHT</th>
<th>CHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>2.19</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>0.032</td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

- Persons presenting with gender dysphoria should be screened for symptoms of an Eating Disorder.
• Immagine corporea definizione
• In quali disturbi si trova il disturbo dell’immagine corporea
• Corpo cosa significa: corpo oggetto corpo spazio identità
• Corpo nei dca e nei dig nel dsm.
• Nei dca studio neuroimaging: cos’è la distorsione dell’immagine corporea. Da essa dipende la psicopatologia e i pathological eating behaviors. Distorsione dell’immagine corporea e self identity: DLFC. I perceive myself as always in danger to lose control on my body shape and body weight. Studi longitudinali
• Corpo nei dig: studio dig e dca. Slide con overlap: body image disorder
• Specificità nei dig: Da studio dig dca: la terapia chirurgica sembra avere effetto su disturbo immagine corporea
• Studio ormoni: òa terapia chirurgica ha effetto su disturbo immagine corporea
• Overlap con dca sui comportamenti: quanti dig hanno criteri per dca? Riporta anche frasi: voglio perdere peso per assomigliare ad una donna. Voglio prendere peso per avere muscoli: eating restraint e binge eating.
• Difefrenze: con ede ci sono difefrenze tra dca e dig.
• Ede associata a disforia di genere
The body schema can be considered a perceptual model of the body, the body image is a cognitive/social/emotional model. According to Schilder (1950), the body image can be defined as "picture of our own body which we form in our mind, that is to say, the way in which the body appears to ourselves".

Building on Schilder's idea, Allamani et al. refer to body image as a complex psychological organisation which develops through the bodily experience of an individual and affects both schema of behaviour and a fundamental nucleus of self-

I lobi parietali svolgono un ruolo rilevante nella costruzione dello schema corporeo (es. lesioni parietali e disturbi dello schema corporeo).

Le afferenze somestesiche ed il talamo si aggiungono all’attività del lobi parietali...
### Summary of Means and SD for MF and FM participants by CHT group. Table includes results of ANCOVA for all outcome variables.

<table>
<thead>
<tr>
<th>Group</th>
<th>Body Image Concerns</th>
<th>Avoidance</th>
<th>Depersonalization</th>
<th>Overall Dislike of Body</th>
<th>Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>NoCHT</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>MF</td>
<td>2.13</td>
<td>0.69</td>
<td>2.04</td>
<td>0.69</td>
<td>0.50</td>
</tr>
<tr>
<td>CHT</td>
<td>2.16</td>
<td>1.25</td>
<td>2.04</td>
<td>0.69</td>
<td>0.50</td>
</tr>
<tr>
<td>FM</td>
<td>2.06</td>
<td>0.95</td>
<td>1.33</td>
<td>0.69</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Note: All values are adjusted for covariates.
Body uneasiness

Eating Disorders

Gender Dysphoria