

**Shapes and Sizes:  
Body Image, Body Dissatisfaction and Disordered  
Eating in Relation to Gender and Gender Identity**

**Monica Ålgars**

Department of Psychology and Logopedics

Abo Akademi University

Åbo, Finland, 2012

ACADEMIC DISSERTATION

**Supervised by**

Professor Pekka Santtila, PhD  
Department of Psychology and Logopedics  
Abo Akademi University  
Finland

Professor N. Kenneth Sandnabba, PhD  
Department of Psychology and Logopedics  
Abo Akademi University  
Finland

**Reviewed by**

Professor Irene Frieze, PhD  
Department of Psychology  
University of Pittsburgh  
United States of America

Professor Tracy Tylka, PhD  
Department of Psychology  
Ohio State University  
United States of America

**Opponent**

Professor Ruth H. Striegel, PhD  
Psychology Department  
Wesleyan University  
United States of America

Cover by Janne Kunttu

*To my mom and dad,  
for everything, everything, everything.*

## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	6
LIST OF ORIGINAL PUBLICATIONS .....	9
SAMMANFATTNING PÅ SVENSKA .....	10
ABSTRACT .....	13
1 INTRODUCTION .....	16
1.1 Definitions and Diagnostic Criteria.....	17
1.2 Body Image and Body Dissatisfaction .....	19
1.3 Sexual Body Image .....	21
1.4 Disordered Eating.....	23
1.5 Body Image, Body Dissatisfaction, and Gender Identity .....	24
1.6 Disordered Eating and Gender Identity .....	25
2 AIMS .....	27
3 MATERIALS AND METHODS .....	29
3.1 Participants .....	29
3.2 Instruments .....	32
3.2.1 Derogatis Sexual Functioning Inventory (Studies I-IV).....	32
3.2.2 Sexual Body Image (Study II).....	32
3.2.3 Eating Attitudes Test (Study III) .....	33
3.2.4 Eating Disorder Inventory (Study IV).....	33
3.2.5 Gender Identity Scale for Males (Study III) .....	34
3.2.6 Female Sexual Function Index (Study II) .....	34
3.2.7 International Index of Erectile Function (Study II).....	35
3.3 Statistical Analyses.....	35
3.4 Qualitative Data Collection and Analysis .....	36
4 RESULTS .....	39

---

4.1 Prevalence of and Gender Differences in Body Dissatisfaction.....	39
4.2 Prevalence of Disordered Eating, and Gender Differences in Disordered Eating and Body Mass Index.....	40
4.3 Prevalence of Gender Identity Conflict.....	41
4.4 Associations between Age and Body Image, Body Dissatisfaction and Disordered Eating .....	41
4.5 Gender Identity, Body Image and Body Dissatisfaction .....	44
4.6 Disordered Eating and Gender Identity.....	46
5 DISCUSSION.....	48
5.1 Gender Differences in Body Image and Body Dissatisfaction.....	48
5.2 Associations between Age, Body Image and Body Dissatisfaction .....	51
5.3 Gender Differences in Disordered Eating .....	52
5.4 Associations between Age and Disordered Eating.....	54
5.5 Body Image, Body Dissatisfaction, and Gender Identity .....	54
5.6 Disordered Eating and Gender Identity.....	56
5.7 Limitations .....	57
5.8 Theoretical Considerations.....	59
5.9 Clinical Implications .....	61
SUMMARY AND CONCLUSIONS.....	63
REFERENCES .....	67

## ACKNOWLEDGEMENTS

This work was carried out at the Department of Psychology and Logopedics at Åbo Akademi University. Studies I-III were conducted within the Center of Excellence in Behavior Genetics, funded by grant No. 210298 from the Academy of Finland and a Centre of Excellence Grant from the Stiftelsen för Åbo Akademi Foundation. My own work was financially supported by the National Doctoral Programme of Psychology, as well as grants from the Stiftelsen för Åbo Akademi Foundation and the Otto Malm Foundation. I am most grateful for this funding that has made my research possible.

I want to express my wholehearted gratitude to every participant of the studies included in this thesis. If the thousands of you hadn't taken the time to fill out questionnaires and reflect on intimate and sometimes even painful issues, this research would not exist. A special thanks belongs to the participants of the interview study. The warmth, generosity, and openness with which you shared your stories with me taught me more than any books or theories could have. Through my research I hope to be able to give you and the transgender community something back.

I am immensely grateful for all the help and support I have received from my supervisor, Professor Pekka Santtila. Without your friendliness, patience, and super brains this thesis would never have been written. Thank you for believing in me, pushing me, encouraging me and, most of all, inspiring me. I am also tremendously grateful for the support of my supervisor Professor Kenneth Sandnabba. You have always provided perspectives that have allowed me to approach problems in new and more fruitful ways. Thank you for encouraging me to be creative and to trust myself.

The feedback of my pre-examiners, Professors Tracy Tylka and Irene Frieze, was invaluable in finishing the final version of this thesis. Thank you for your thorough, constructive, and insightful reviews that helped make this text richer and more profound. Furthermore, I am

grateful and honored to have Professor Ruth Striegel serving as my opponent at the public defense of this thesis.

I am fortunate to work in the best of workplaces, among colleagues and friends who make every day fun, inspiring, and weird. Thank you all at the Department of Psychology and Logopedics for making this such a unique place to work at. I especially want to thank Jan Antfolk, Benny Salo, Emilia Bergen, Patrick Jern, Thomas Nyman, and Yasmin Nyqvist for being there through all the methodological puzzles, statistical breakdowns, coffee, and champagne (or, well, sparkling wine). You're wonderful. I also want to thank Katarina Alanko for the collaboration, the discussions, and the support. I hope for many more opportunities to work with all of you.

I am the luckiest person in the world to have had Juha Nikkilä by my side through the last ten months of this process. Thank you for making my world so much warmer, softer. Thank you for believing in me a hundred times more than I believe in myself. I never wished for happiness like this because I never knew it was possible. I also want to thank my dear sisters Annika and Jessica and their families for always being there, reminding me of the things that are so much more important than work. I am blessed to have more friends than can be mentioned here, but I want to thank each and every one of you for bearing with me, encouraging me, and distracting me through these years. In particular, I want to thank Sami Sjöberg for being there throughout this process, and being there still. In addition, I once made a promise that if I ever actually finish this thesis I will thank Jardin du Luxembourg in which parts of it was written. So, thank you, Paris. And while on this somewhat unorthodox sidetrack of acknowledgements I might as well take the opportunity to thank my gym. Without the dancing, jumping, twirling and kicking I would never have had the patience to do so much sitting, writing and thinking.

Last, but most definitely not least, there are a few more people I want to thank. First, Anna Soveri and Ada Johansson, whose journeys have paralleled mine since our first days as undergraduate students ten years (ten years!) ago. Without you, our friendship, the afternoon

breaks, the unconditional support, the ability to work ourselves into complete hysterics and then help each other through it, none of this would have been possible, or at least not fun.

More than anything I want to thank my parents, Tuula and Rainer, without whom I (in more than one sense) wouldn't be here today. Thank you for always supporting me academically without ever pressuring me. Thank you for all your practical aid, for making years of traveling between two cities possible and endurable. Thank you for telling me when I need to work less and sleep more, and for not turning your back on me when I consistently refuse to follow your advice. Thank you for being proud of everything I achieve, and for loving me all the same if I don't achieve a thing.

Åbo, February 2012

A handwritten signature in black ink, appearing to read 'Monica Ålgars'. The signature is written in a cursive, flowing style with some loops and flourishes.

Monica Ålgars



## LIST OF ORIGINAL PUBLICATIONS

- I. Ålgars, M., Santtila, P., Varjonen, M., Witting, K., Johansson, A., Jern, P., & Sandnabba, N. K. (2009). The adult body: How age, gender, and body mass index are related to body image. *Journal of Aging and Health, 21*, 1112-1132.
- II. Ålgars, M., Santtila, P., Jern, P., Westerlund, M., & Sandnabba, N. K. (2011). Sexual body image and its correlates: A population-based study of adult women and men. *International Journal of Sexual Health, 23*, 26-34.
- III. Ålgars, M., Santtila, P., & Sandnabba, N. K. (2010). Conflicted gender identity, body dissatisfaction, and disordered eating in adult men and women. *Sex Roles, 63*, 118-125.
- IV. Ålgars, M., Onyango, M., Steffansson, M., & Alanko, K. (Submitted). Brief report: Gender identity, body dissatisfaction and disordered eating.
- V. Ålgars, M., Alanko, K., Johansson, A., Santtila, P., & Sandnabba, N. K. (Submitted). Body image and gender identity disorder: A qualitative study.
- VI. Ålgars, M., Alanko, K., Santtila, P., & Sandnabba, N. K. (In press). Disordered eating and gender identity disorder: A qualitative study. *Eating Disorders*

The original articles have been reproduced by permission of the copyright holders.

## SAMMANFATTNING PÅ SVENSKA

KroppsBild, kroppsmissnöje och ätstörningssymptom är komplexa fenomen, relaterade såväl till varandra som till individuella, interpersonella och samhälleliga faktorer. Kön är en sådan faktor som påverkar hur människor uppfattar och förhåller sig till sina kroppar samt försöker forma och förändra dem. Tidigare forskning har visat att kvinnor är mer missnöjda med sina kroppar och i högre grad lider av ätstörningssymptom än män. Dock har deltagarna i de flesta studier inom detta område varit unga, kvinnliga universitetsstuderande. Långt färre studier har undersökt hur äldre vuxna, särskilt män, uppfattar och förhåller sig till sina kroppar.

Könsidentitet är en annan faktor som är associerad med kroppsBild och kroppsmissnöje, samt möjligen även med ätstörningssymptom. Till dags dato har dock endast ett fåtal studier undersökt hur personer vars könsidentitet avviker från normen förhåller sig till sina kroppar samt till mat och ätande.

Syftet med föreliggande avhandling var att empiriskt undersöka kroppsBild, kroppsmissnöje och ätstörningssymptom i relation till kön och könsidentitet. Data samlades in via två olika projekt: en populationsbaserad, kvantitativ frågeformulärsstudie samt en kvalitativ intervjustudie. I frågeformulärsstudiens första fas skickades ett frågeformulär till 10 000 finländska tvillingar i åldern 33 till 43 år. Svarsprocenten var 36 procent, 3604 frågeformulär returnerades. I studiens andra fas skickades frågeformuläret till 23 577 finländska personer i åldern 18 till 49 år (tvillingar och deras syskon över 18 år). Denna gång var svarsprocenten 45 procent, 10 524 frågeformulär returnerades. Därefter kombinerades de två datauppsättningarna. Baserat på detta material undersöktes förekomsten av kroppsmissnöje och ätstörningssymptom. Därtill analyserades könsskillnader, ålderskillnader samt inverkan av könsidentitetskonflikt. Intervjustudien utfördes med 20 finländska personer i åldern 21 till 62 år som identifierade sig själva som transpersoner. Med undantag för fyra personer hade samtliga deltagare fått diagnosen könsidentitetsstörning och hade genomgått eller genomgick vid tidpunkten för intervjuerna könskorrigering behandling. Förekomsten av kroppsmissnöje och ätstörningssymptom bland deltagarna undersöktes, och deltagarnas uppfattningar om orsakerna till sambanden mellan könsidentitet, kroppsmissnöje och ätstörningssymptom

analyserades. Därtill analyserades vilken inverkan könskorrigering hade på deltagarnas kroppsbild och ätbeteenden.

Avhandlingens resultat visade att kroppsmisnöje var vanligt bland både vuxna kvinnor och män. Till exempel uppgav mer än hälften av kvinnorna och cirka en tredjedel av männen att de uppfattade sig själva som mindre attraktiva än de önskade att de var. Kvinnor rapporterade högre nivåer av kroppsmisnöje än män. Också ätstörningssymptom var vanligare bland kvinnor. Mer än hälften av kvinnorna och cirka en tredjedel av männen uppgav att de bantar, och nästan hälften av kvinnorna och en femtedel av männen uppgav att de känner en intensiv rädsla för att vara feta. Självframkallade kräkningar rapporterades av var tionde kvinna och var hundra man. Högre ålder var positivt associerad med att bli mer nöjd gällande somliga aspekter av sin kroppsbild, till exempel gällande huruvida man gillar vissa specifika kroppsdelar. Gällande andra aspekter av kroppsbild var högre ålder associerad med ökat misnöje, till exempel gällande huruvida man uppfattar sin kropp som välproportionerlig. I jämförelse med kontrollpersoner matchade gällande ålder och biologiskt kön rapporterade personer med könsidentitetskonflikt högre nivåer av kroppsnöje. Biologiska kvinnor med könsidentitetskonflikt rapporterade också mer ätstörningssymptom än dessa kontrollpersoner. Majoriteten av de intervjuade transpersonerna uppgav sig uppleva ett intensivt och omfattande misnöje med sina kroppar, i synnerhet gällande sexuell kroppsbild. Majoriteten av intervjustudiens deltagare rapporterade även ätstörningssymptom. Könskorrigeringsbehandling uppgavs huvudsakligen ha en lindrande inverkan på både kroppsmisnöje och ätstörningssymptom.

Resultaten diskuterades i relation till tidigare forskning och teoribildning. Sammantaget visade resultaten att kön och könsidentitet spelar en roll för hur kroppsmisnöje och ätstörningssymptom utvecklas och uttrycks. Könsskillnader diskuterades ur både sociokulturella och evolutionspsykologiska perspektiv. Tidigare studier har funnit stöd för att idealiserade bilder i media, internalisering av utseendeideal och objektifikationsteori kan förklara varför kvinnor i högre grad är utsatta för kroppsmisnöje och ätstörningssymptom än män. I föreliggande avhandling argumenterades dock för att dessa könsskillnader i slutänden möjligen bättre kan förklaras i evolutionära termer. Det visades även att dessa två perspektiv

inte utesluter varandra, utan kan kombineras för att nå en ökad förståelse av kroppsmissnöje, ätstörningssymptom och könsskillnader i dessa.

Förhållandet mellan kön, könsroller och könsidentitet diskuterades även ur ett teoretiskt perspektiv. Det är värt att lägga märke till att transpersonerna i intervjustudien inte primärt beskrev könsidentitet i termer av könsroller, utan uttryckte ett intensivt och omfattande missnöje med sina faktiska, fysiska kroppar. Argumentet att associationerna mellan kropps bild, kroppsmissnöje, ätstörningssymptom, kön och könsidentitet inte enbart kan förstås ur ett sociokulturellt perspektiv framfördes.

Slutligen diskuterades resultatens kliniska implikationer. Vårdpersonal bör vara medveten om att kroppsmissnöje och ätstörningssymptom berör både kvinnor och män, och att dessa problem inte enbart angår ungdomar utan även gäller vuxna. Det är också värt att notera att vuxna människor kan bli mer nöjda med vissa aspekter av sina kroppar då de blir äldre, men samtidigt mer missnöjda med andra aspekter. Därtill förefaller missnöje med de sexuella delarna av kroppen vara relativt vanligt bland vuxna, och bör således inte ignoreras vid bedömning och behandling av kroppsmissnöje. Vårdpersonal som arbetar med transpersoner bör vara medvetna om hur djupt och omfattande dessa personers kroppsmissnöje kan vara, samt även vara medvetna om transpersoners eventuellt förhöjda risk för ätstörningssymptom. Det är också värt att uppmärksamma att könskorrigeringsbehandling kan lindra kroppsmissnöje och ätstörningssymptom hos transpersoner.

## ABSTRACT

Body image, body dissatisfaction, and disordered eating are multidimensional phenomena related to one another as well as to intrapersonal, interpersonal, and societal factors. One such factor affecting how people perceive, relate to, and attempt to shape their bodies is gender. It is known that women are more vulnerable to body dissatisfaction and disordered eating than men are. However, much previous research within this area has been conducted on convenience samples consisting of female college students. Less is known about how older adults, especially men, perceive and relate to their bodies. Another factor related to body image, body dissatisfaction, and possibly also disordered eating, is gender identity. To date, little is known about the body image and eating behaviors of people whose gender identity differs from the norm.

The aim of the present thesis was to empirically investigate body image, body dissatisfaction and disordered eating in relation to gender and gender identity. Data were collected through two different projects: a population-based quantitative questionnaire study and a qualitative interview study. In the first phase of the quantitative study, a questionnaire was sent to 10,000 Finnish twins aged 33-43 years. The response rate was 36%, 3,604 questionnaires were returned. In the second phase, the questionnaire was sent to 23,577 Finnish adults aged 18-49 years (twins and their siblings over 18 years). This time the response rate was 45%, 10,524 questionnaires were returned. The two data sets were then combined. Based on the questionnaire data the prevalence of body dissatisfaction and disordered eating was examined, and gender differences as well as effects of age and gender identity conflict were analyzed. The interview study was conducted with 20 Finnish adults aged 21-62 years who identified themselves as transgender. All but four participants were diagnosed with gender identity disorder and had undergone or were undergoing gender reassignment at the time of the interviews. The prevalence of body dissatisfaction and disordered eating in the sample was assessed, and the participants' understandings of the causes behind the associations between gender identity, body dissatisfaction and disordered eating were analyzed. In addition, the effects of gender reassignment on body dissatisfaction and disordered eating were investigated.

The results showed that body dissatisfaction was common among adults of both genders. For example, more than half of the women and around one third of the men reported feeling less attractive than they would like to be, and disliking parts of their bodies. Regarding sexual body image, half of the women and two thirds of the men reported being satisfied with their genitals. Higher levels of body dissatisfaction were reported by women than men. Disordered eating was also more common among women. Dieting behavior was reported by more than half of the women and around one third of the men, and almost half of the women and one fifth of the men reported intense fear of being fat. Self-induced vomiting was reported by approximately one tenth of the women and 1% of the men. Higher age was associated with increased body satisfaction regarding some aspects of body image, for example disliking parts of one's body, but associated with increased body dissatisfaction on other aspects, such as perceiving one's body as being well-proportioned. When compared to controls matched on age and biological gender, both biological men and women with a conflicted gender identity reported higher levels of body dissatisfaction. Biological women with a conflicted gender identity also reported more disordered eating than controls. Of the interviewed transgender participants, a majority described intense and extensive body dissatisfaction, as well as disordered eating. Participants described deep dissatisfaction with their bodies, especially concerning sexual body image. A majority also described disordered eating such as excessive dieting, bingeing, and purging. Gender reassignment, i.e. hormone treatment and surgery, was primarily perceived as having an alleviating effect on both body dissatisfaction and disordered eating.

The results were discussed in relation to previous research and theoretical frameworks. Taken together, the results show that gender and gender identity are of relevance to the development of body dissatisfaction and disordered eating, and also play a role in how they are expressed. Gender differences were discussed from a socio-cultural perspective, as well as from a perspective of evolutionary psychology. Although previous studies have found support for media exposure, internalization of beauty ideals and objectification theory as explanations as to why women tend to be more dissatisfied with their bodies and experience more disordered eating than men, it was argued that these gender differences may ultimately be better explained in evolutionary terms. It was proposed that these two perspectives are compatible with each other in explaining body dissatisfaction, disordered eating, and gender differences in them.

From a theoretical perspective, the relation between gender, gender roles, and gender identity was discussed. It was pointed out that the transgender participants did not primarily describe gender identity as in terms of gender roles, but expressed intense and extensive dissatisfaction with their actual, physical bodies. It was argued that the associations between body image, body dissatisfaction, disordered eating, gender, and gender identity cannot be fully understood from a solely socio-cultural perspective.

The clinical implications of the results were discussed. Clinicians should note that body dissatisfaction and disordered eating are problems that concern both women and men, and are not only of relevance to young people but continue to affect adults. In addition, clinicians should note that adults may become more satisfied with some aspects of their bodies as they age, and more dissatisfied with other aspects. In addition, sexual body dissatisfaction appears to be common among adults, and should not be overlooked when assessing and addressing body dissatisfaction. It was proposed that clinicians working with transgender persons should pay attention to how severe and extensive the body dissatisfaction of transgender people can be. Clinicians should also be aware of the possibly heightened risk for disordered eating among transgender people. It is also of importance to note that gender reassignment treatment was described by transgender participants as alleviating symptoms of both body dissatisfaction and disordered eating.

## 1 INTRODUCTION

Body image, body dissatisfaction, and eating behaviors are multidimensional phenomena, related not only to one another, but also to a number of intrapersonal, interpersonal, and societal factors (Fairburn & Brownell, 2002; Grogan, 2008). Body image and body dissatisfaction include thoughts, feelings and perceptions of one's body in general, as well as in relation to specific aspects of it. One such aspect of body image is sexual body image, that is, how a person perceives his or her sexual body parts (genitalia and breasts). Another aspect of body image and body dissatisfaction is perceptions, thoughts and feelings about one's size and shape (Grogan, 2008). There is a clear connection between body dissatisfaction and disordered eating. In a meta-analysis of 66 studies in which body dissatisfaction in eating disorders had been investigated, Cash and Deagle (1997) found that the reviewed studies collectively indicated that women with clinical eating disorders had greater body dissatisfaction and perceptual body-size distortion, as compared to women without eating disorders. The effects of body dissatisfaction were large and the level of body dissatisfaction in eating disordered patients exceeded that of 87% of those without these disorders.

To understand the complex ways in which we perceive, relate to, and attempt to shape our own bodies, a number of factors must be taken into account. Two such factors affecting our relationships with our bodies are gender and gender identity. Body image, body dissatisfaction, and eating behaviors are closely connected to our perceptions of ourselves as male or female. A substantial body of research shows that women are inclined to be more dissatisfied with their bodies than men (e.g. Davison & McCabe, 2005; Muth & Cash, 1997; Neighbors & Sobal, 2007), and that women have a higher risk for developing disordered eating (e.g. American Psychiatric Association, 2000; Lewinsohn, Seeley, Moerk, & Striegel-Moore, 2002). The role of gender identity is, however, less explored. Little is known about the body image and eating behaviors of people whose gender identity differs from the norm, and although associations between gender identity disorder and body dissatisfaction (Bozkurt et al., 2006; Vocks, Stahn, Loenser, & Legenbauer, 2009) as well as disordered eating (Vocks et al., 2009) have been indicated, the details of these associations remain unclear.



The present thesis aimed at investigating body image, body dissatisfaction and disordered eating in relation to gender and gender identity in a population-based sample of Finnish adults of both genders, as well as in a smaller sample of transgender adults. Firstly, the prevalence of body dissatisfaction and disordered eating, as well as gender differences and age effects, were assessed in the population-based sample. Secondly, the associations between gender identity, body dissatisfaction and disordered eating were explored both in the above-mentioned population-based sample, and in the smaller sample of transgender individuals.

### 1.1 Definitions and Diagnostic Criteria

*Body image* is a multidimensional concept that can be defined in different ways. One definition of the term is that body image refers to “a person’s perceptions, thoughts and feelings about his or her body” (Grogan, 2008). Body image has been viewed as consisting of both perceptual and attitudinal components (Skrzypek, Wehmeier, & Remschmidt, 2001), as well as consisting of affective, cognitive, perceptual, and behavioral components (McCabe & Ricciardelli, 2003).

*Body dissatisfaction* refers to negative subjective evaluations of one’s body and physical appearance (Stice & Shaw, 2002) and involves incongruence between a person’s perceived body and ideal body (Cash & Szymanski, 1995). Body dissatisfaction has also been equated with negative body image (Cash, 2004) and can be viewed from societal, interpersonal, and intrapersonal perspectives, as well as from the perspective of social presentation (Adams, Turner, & Bucks (2005).

*Sexual body image* has, to our knowledge, not previously been clearly defined. In the present thesis the term referred to a person’s perceptions, thoughts and feelings about his or her genitals and, for women, her breasts.

*Eating disorders* include Anorexia Nervosa, Bulimia Nervosa, and Eating Disorder Not Otherwise Specified (EDNOS). In the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000) anorexia nervosa is characterized by a refusal to maintain body weight at, or above, a minimally normal weight

for age and height, an intense fear of gaining weight even though underweight, body weight or shape distortion, undue influence of body weight or shape on self-evaluation, denial of the seriousness of one's condition and, in postmenarcheal women, the absence of at least three consecutive menstrual cycles (amenorrhea). Bulimia nervosa is characterized by recurrent (on average at least twice a week for three months) episodes of binge-eating followed by recurrent inappropriate compensatory behavior such as self-induced vomiting, misuse of laxatives or diuretics, fasting, or excessive exercise, in order to prevent weight gain, and undue influence of body shape and weight on self-evaluation. The *DSM-IV-TR* (2000) also includes Eating Disorder Not Otherwise Specified (EDNOS), a category for eating disorders that meet some, but not all, of the criteria for anorexia or bulimia nervosa. For example, an individual who meets all other criteria for anorexia nervosa, but who still has a normal menstrual cycle and/or body weight can be diagnosed with EDNOS.

*Disordered eating* has been described as problematic eating attitudes and behaviors pertaining to the fear of fatness (Lee & Lee, 2000), with characteristics that may occur in eating disorders, such as self-induced vomiting, the use of diet pills or laxatives, binge eating with loss of control and a pathological preoccupation with body shape and weight, expressed through an intense fear of fat as well as an excessive influence of weight and shape on self-evaluation (Neumark-Sztainer, Wall, Guo, Story, Haines, & Eisenberg, 2006). Disordered eating can be viewed on a continuum that ranges from lack of concern with weight and shape and normal eating habits to discontent with weight and shape and moderately disordered eating to diagnosable eating disorders such as anorexia nervosa or bulimia nervosa (Fitzsimmons-Craft, 2011). Consequently, people with diagnosable eating disorders have disordered eating, but not all people with disordered eating meet the diagnostic criteria for eating disorders.

*Gender identity* refers to a person's perception of himself or herself as male or female (Nolen-Hoeksema, 2007), and can be described as a system of beliefs about the subjective self in relation to masculinity and femininity, maleness and femaleness, and culturally prescribed roles assigned to those categories (Ault & Brzuzy, 2009).

*Gender identity disorder* is defined in the *DSM-IV-TR* (American Psychiatric Association, 2000) as a strong and persistent cross-gender identification, persistent discomfort with one's

sex or sense of inappropriateness in the gender role of that sex that cause clinically significant distress or impairment in social, occupational or other important areas of functioning, and are not concurrent with a physical intersex condition.

*Transgender* as a category has been defined slightly differently by different researchers (Dean et al., 2000). One definition is that the term transgender refers to the “identities and experiences of those who transgress traditional categories of sex and gender” (McCarthy, 2003), another is “anyone who lives a gender they were not perinatally assigned or that is not publicly recognizable within Western cultures’ binary gender systems” (Heyes, 2003). In the present thesis, participants who reported cross-gender identification and inappropriateness in the gender role of their biological sex, and identified themselves as transgender, were defined as transgender.

*Gender identity conflict* has been measured as having wished one had been born the opposite gender (Silverstein, Chapman, Perlick, & Perdue, 1990). In the present thesis gender identity conflict was defined as having felt one is a member of the opposite gender, and/or having wished one had the body of the opposite gender. In other words, people with gender identity disorder are transgender and have a conflicted gender identity, but all transgender people or people with a conflicted gender identity do not necessarily meet the diagnostic criteria for gender identity disorder.

## **1.2 Body Image and Body Dissatisfaction**

A substantial body of research shows that women tend to be more preoccupied and dissatisfied their bodies than men (e.g. Muth & Cash, 1997; Neighbors & Sobal, 2007; Striegel-Moore & Franko, 2004). Women also report concealing their bodies and engaging in appearance comparisons more frequently than men do (Davison & McCabe, 2005). Different explanations to this gender discrepancy have been proposed. From a socio-cultural perspective it can be argued that women are more preoccupied and dissatisfied with their bodies than men because of cultural beauty and thinness ideals that are more pervasive for women (Striegel-Moore & Franko, 2004). These thin ideals are thought to be internalized, so

that women experience a discrepancy between what they should ideally look like and what they feel they currently look like (Fitzsimmons-Craft, 2011). In a meta-analysis using data from 25 studies, Groesz, Levine, and Murnen (2001) found that women's body image was more negative after viewing media images of thin models than after viewing average size models, plus size models, or inanimate objects. According to objectification theory (Fredrickson & Roberts, 1997) we live in a culture that sexually objectifies the female body, and this observer's perspective is also internalized by women and influences how they view their own bodies, as well as affect the impact that these evaluations have on their sense of self-worth (Fredrickson & Roberts, 1997; Mellor, Fuller-Tyszkiewicz, McCabe, & Ricciardelli, 2011). According to Fredrickson and Roberts (1997) this accounts for the fact that body dissatisfaction is more common among women than men. Studies have found support for associations between sexual objectification, body surveillance, body comparison, and body shame in younger women (Tylka & Sabik, 2010), as well as associations between sexual objectification, self-objectification, and body shame in older adult women (Augustus-Horvath & Tylka, 2009). On the other hand, from an evolutionary perspective women would be expected to more preoccupied and less satisfied with their bodies than men, because men place greater importance on physical attractiveness in their mate choice than women do, due to its value as a cue of age and fertility (Barrett, Dunbar, & Lycett, 2002).

Although women tend to evaluate their bodies more negatively than men do, men are not spared from body image concerns either. Male body dissatisfaction is, however, less well understood (Adams, Turner, & Bucks, 2005), and possibly different from female body dissatisfaction (McCabe & Ricciardelli, 2003; Westmoreland Corson & Andersen, 2004). Whereas drive for thinness is important to women, men may strive to achieve a more muscular ideal (McCabe & Ricciardelli, 2003; Peixoto Labre, 2005; Tager, Good, & Morrison, 2006) and may actually wish to increase their body size (Adams et al., 2005; McCabe & Ricciardelli, 2003). However, male body dissatisfaction does not simply equal drive for muscularity, but has in addition been shown to include dimensions such as dissatisfaction with body fat and height (Bergeron & Tylka, 2007). Although male body dissatisfaction has gained more attention in recent years, most research on body image and body dissatisfaction has been focused on girls and women (McCabe & Ricciardelli, 2003; Mills & D'Alfonso, 2007; Tiggemann, 2004), using measures developed for females (Peat, Peyerl, & Muehlenkamp, 2008).

The body changes throughout life, but age effects on body image have not been widely studied, and the existing results have not been conclusive. While some studies have failed to detect any age effects on body attitudes (Wilcox, 1997) or body satisfaction (Demarest & Allen, 2000; Frederick, Peplau, & Lever, 2006), other results indicate that people in their late adulthood experience less body dissatisfaction (Mellor et al., 2010; Peat, Peyerl, Ric Ferraro & Butler, 2011), are less concerned about other people evaluating their bodies, and less likely to engage in appearance comparisons, than younger people (Davison & McCabe, 2005). However, it appears that women do continue to experience some level of body dissatisfaction across the life span. It has been suggested that although body dissatisfaction may persist, the importance women place on physical appearance decreases with age (Peat et al., 2008; Tiggemann, 2004). As mentioned above, age effects on body image remain somewhat insufficiently understood, especially among men (Krauss Whitbourne & Skultety, 2004; Tiggemann, 2004). To understand body image in adulthood age-related changes that affect appearance should naturally be considered, but changes in physical competence and health may likewise be relevant (Krauss Whitbourne & Skultety, 2004).

### **1.3 Sexual Body Image**

One aspect of body image that has been largely overlooked is sexual body image. Although general body image and weight-related body dissatisfaction are widely studied, very little is known about how people perceive their genitals, or how women perceive their breasts. This is somewhat surprising as sexual body parts, particularly breasts, can hardly be considered overlooked in Western culture. Women's breasts are given much attention and are viewed as symbols of femininity and sexuality (Tantleff-Dunn & Thompson, 2000). Media images depict unrealistic breast sizes and the popularity of breast augmentation, reduction and enhancement procedures indicate that many women are dissatisfied with the size and shape of their breasts (Sarwer et al., 2003; Tantleff-Dunn, 2001). Through media, boys and men receive the message that masculinity, virility and potency are related to penis size (Lee, 1996) and exposure to pornographic material may cause men to overestimate the average penis size and underestimate the relative size of their own penis (Lever, Frederick, & Peplau, 2006). Men's worries about their penis size have also created a market for penis enlargement

procedures and products (Lever et al., 2006), a market that possibly further enhances feelings of inadequacy. Among women, genital cosmetic surgery to alter the appearance of the labia and tighten the vagina are becoming more common (Braun, 2005), indicating that even the genitals are increasingly considered to be body parts that can and will be measured against beauty standards (Plowman, 2010). Also, advertisements for "female hygiene products" may cause women to feel insecure about the smell and cleanliness of their genitals (Reinholtz & Muehlenhard, 1995). It should also be noted that, according to studies conducted in the US and Australia, a majority of both college men and women report removing their pubic hair (Smolak & Murnen, 2011).

The few previous studies of sexual body image indicate that men tend to perceive their genitals more positively than women do (Morrison, Bearden, Ellis, & Harreman, 2005; Reinholtz & Muehlenhard, 1995). One possible explanation to this gender difference is that cultural stereotypes about sexuality allow men to more easily enjoy their sexuality (Reinholtz & Muehlenhard, 1995). Regarding penis size satisfaction, one study showed that 55% of adult men reported being satisfied with their penis size and 45% reported wanting to have a larger penis (Lever, Frederick, & Peplau, 2006). Satisfaction with penis size was most common among men who viewed their penis as large and uncommon among men who viewed their penis as small. There was no association between age and penis size satisfaction (Lever et al., 2006). In another study, 69% of men estimated their penis size to be average, 26% estimated that their penises were smaller or much smaller than those of other males, and 5% estimated that they had larger than average penises (Lee, 1996). This indicates a skewed tendency to perceive one's penis size as smaller than average rather than larger than average. Even less is known about how women perceive their genitals. Reinholtz and Muehlenhard (1995) found that both men and women expressed moderately positive genital perceptions, with mean factor ratings regarding satisfaction with one's and one's partner's genitals ranging from slightly true to mostly true. Positive perceptions of one's own and one's partner's genitals were associated with more frequent and diverse sexual behavior, such as participation in penile-vaginal intercourse, performing oral sex, receiving oral sex, and masturbation. Positive genital perceptions were also related to greater enjoyment of the sexual activities. Women's perceptions of their breasts have gained somewhat more attention, and dissatisfaction with breast size appears to be common. In one study 70% of adult women reported being dissatisfied with their breast size or shape (Frederick et al., 2008), another study found that

55% of women wanted larger breasts, 16% were satisfied with their breast size, and 29% wanted smaller breasts (Tantleff-Dunn & Thompson, 2000).

#### **1.4 Disordered Eating**

Disordered eating is more common among women than men (Hoek & van Hoeken, 2003; Lewinsohn et al., 2002), and approximately 90% of those diagnosed with eating disorders are women (American Psychiatric Association, 2000). Various explanations to this gender difference have been proposed. An often-heard claim is that exposure to the thin ideal through, for example, media images places women at risk for developing disordered eating. An effect of media exposure on disordered eating (e.g. Carney & Louw, 2006), mediated by body dissatisfaction (Stice, Schupak-Neuberg, Shaw, & Stein, 1994) has been established in several studies. According to objectification theory, women's troubled eating behaviors may be linked to Western culture's sexual objectification of the female body. From this perspective, disordered eating can be understood as attempts to alleviate the dissatisfaction and shame that women feel about their bodies due to objectification, or as attempts to protest against this objectification (Fredrickson & Roberts, 1997). Previous research has provided support for a relationship between sexual objectification, self-objectification, and disordered eating (Augustus-Horvath & Tylka, 2009; Tylka & Sabik, 2010). It has also been shown that a masculine gender role orientation is a protective factor against disordered eating (Blashill, 2011) and that a feminine gender role orientation can be a risk factor (Lakkis, Ricciardelli, & Williams, 1999; Murnen & Smolak, 1997). According to the "femininity hypothesis" stereotypically feminine traits such as passivity, unassertiveness, a need for approval and dependence lead to poor self-esteem which, as an attempt to improve self-esteem and body image, in turn may lead to dieting (Lakkis et al., 1999). However, from an evolutionary perspective the picture looks different. The sexual competition hypothesis states that disordered eating and drive for thinness ultimately stem from the process of female intra-sexual competition, and are pathological by-products of an originally adaptive strategy (Abed, 1998; Faer, Hendriks, Abed & Figueredo, 2005). Female intra-sexual competition refers to the competition between women for male commitment. This competition involves thinness and attractiveness that, as described above, serve as cues of youth and fertility (Faer et al., 2005). The relationship between female intra-sexual competition and disordered eating has not been

widely studied, but the few existing studies have detected an association between them (Faer et al., 2005; Mehta et al., 2011).

Although disordered eating is more common among women, it also occurs among men. There has been an increase in research on disordered eating in men; however, most studies have still focused on women, using instruments developed for women (Lewinsohn et al., 2002). There are many similarities between men and women regarding disordered eating; however, there are also some differences. For example, studies have indicated that women more frequently engage in bingeing and purging behaviors as well as restrictive eating and weight checking, whereas men more commonly resort to overeating, excessive exercise, and engage in behaviors to build muscle and improve muscle definition (Harvey & Robinson, 2003; Striegel-Moore et al. 2009; Weltzin et al., 2005).

Disordered eating as well as eating disorders are most common among young people (Currin, Schmidt, Treasure, & Jick, 2005; Hoek & van Hoeken, 2003). In a large, population-based study, the median age of onset of anorexia nervosa and bulimia nervosa was 18 years, and the mean age of onset approximately 19 years (Hudson, Hiripi, Pope, & Kessler, 2007). However, the fact that disordered eating and drive for thinness also occur in older adults is beginning to gain more attention (Lewis & Cachelin, 2001; Peat et al., 2008). Disordered eating among adults includes disordered eating that has emerged earlier in life and persisted, as well as late-onset disordered eating (Peat et al., 2008).

### **1.5 Body Image, Body Dissatisfaction, and Gender Identity**

Related to the role of gender in body dissatisfaction and disordered eating is the question of what role gender identity might play. That gender identity is linked to the perception of one's body may seem self-explanatory. However, very little is actually known about how people whose gender identity differs from the norm relate to their own bodies. The few empirical studies that have been conducted have reached slightly conflicting results. Vocks et al. (2009) found that male-to-female persons (i.e. people born as biological men) reported more weight and shape concerns, body dissatisfaction, and body checking than both male and female



controls. Female-to-male persons (i.e. people born as biological women) reported more weight and shape concerns, body dissatisfaction, and body checking than male controls, but did not differ from female controls (Vocks et al., 2009). Bozkurt et al. (2006) found that male-to-female persons were less satisfied with their body hair, shoulder width, and genitals than controls, but more satisfied with their waist, height, hips, legs, body posture, and weight. On the other hand, another study found that male-to-female persons did not perceive their body more negatively than neither female nor male controls (Wolfradt & Neumann, 2001).

If transgender persons experience dissatisfaction with their bodies, the question of what effect gender reassignment treatment has on body image arises. Not much is known about this topic, but the few available studies indicate that gender reassignment may have a positive effect on body image in transgender people. Kraemer, Delsignore, Schnyder, and Hepp (2008) found that pre-operative female-to-male and male-to-female persons reported feeling insecure and unattractive due to body image concerns, whereas post-operative female-to-male as well as male-to-female persons scored low on body image concerns, and high on self-confidence and perceived attractiveness. Fleming et al. (1982) detected a trend towards an association between body satisfaction and surgical treatment in female-to-male persons. However, Vocks et al. (2009) failed to find any association between body dissatisfaction and level of gender reassignment.

### **1.6 Disordered Eating and Gender Identity**

Case studies and a small amount of research have indicated an association between gender identity disorder and disordered eating, but little is known about the details or strength of this association. Case studies from different parts of the world have described both female-to-male and male-to-female patients with anorexia nervosa (Fernández-Aranda, Peri, Navarro, Badia-Casnovas, Turón-Gil, & Vallejo-Ruiloba, 2000; Hepp & Milos, 2002; Hepp, Milos, & Braun-Scharm, 2004; Winston, Acharya, Chaudhuri, & Fellowes, 2004) and bulimia nervosa (Hepp & Milos, 2002; Surgenor & Fear, 1998). To our knowledge, only one empirical study has investigated whether transgender people experience more disordered eating than controls (Vocks et al., 2009). Comparing 131 persons with gender identity disorder to controls of both

genders as well as persons with diagnosed eating disorders, Vocks et al. (2009) found that male-to-female participants reported higher levels of disordered eating than both male and female controls. Female-to-male participants reported more disordered eating than male controls, but no differences in levels of disordered eating between female-to-male participants and female controls were detected. However, transgender participants showed less disordered eating than patients with diagnosed eating disorders. No association between disordered eating and level of gender reassignment was found.

It is not known why gender identity disorder may be a risk factor for disordered eating. One possible explanation is that transgender people are vulnerable to psychopathology, including eating disorders, due to social stigma (Vocks et al., 2009) and negative self-image (Fernández-Aranda, et al., 2000). Another proposed explanation is that female-to-male persons may strive for thinness in order to suppress female sexual characteristics such as breasts and hips (Hepp & Milos, 2002; Hepp et al., 2004) as well as menstruation (Hepp & Milos, 2002). Male-to-female individuals may in turn strive for thinness to suppress masculinity and to correspond to a slim, female ideal (Hepp & Milos, 2002; Hepp et al., 2004; Surgenor & Fear, 1998). On the other hand, it has also been proposed that female-to-male persons who are overweight could be reluctant to lose weight because breasts and hips appear smaller relative to abdominal size in overweight people (Vocks et al., 2009). None of these proposed explanations have, to our knowledge, previously been empirically tested.

## 2 AIMS

The general aim of the present thesis was to empirically investigate body image, body dissatisfaction and disordered eating in relation to gender and gender identity. To analyze the questions at issue both quantitative and qualitative methods were applied.

Although body image, body dissatisfaction and disordered eating have been widely studied, a majority of previous research has focused on young women, often depending on convenience samples of college students. In order to improve generalizability, these phenomena were here investigated in a large population-based sample of both women and men aged 18 to 49 years. Much previous research has focused on body weight satisfaction. In this thesis multiple aspects of body image were studied, and items common for both genders as well as gender-specific items were included. One aspect of body image that has largely been overlooked in previous research is sexual body image, that is, how people perceive and relate to the sexual parts (genitalia and breasts) of their bodies. To achieve a more complete picture, items assessing sexual body image were included in the thesis.

Aiming at reaching a more thorough understanding of the relation between gender, gender identity, body image, and disordered eating, the questions at issue were also investigated in a smaller sample of transgender adults, including both female-to-male and male-to-female participants. To date, little is known about how transgender people perceive and relate to their bodies. Previous case studies have suggested that transgender people possibly have a heightened risk for disordered eating, but little is known about this association or the dynamics behind it. One of the aims of present thesis was therefore to examine not only the prevalence of body dissatisfaction and disordered eating in a sample of transgender adults, but also analyze the participants' own understanding of the underlying causes of possible body dissatisfaction and disordered eating. In addition, possible effects of gender reassignment treatment on body dissatisfaction and disordered eating were examined.

The specific research questions were:

1. How prevalent is body dissatisfaction in a population-based sample of Finnish women and men? (Studies I-II)
2. How prevalent is disordered eating in a population-based sample of Finnish women and men? (Additional analyses)
3. Are there gender differences in body dissatisfaction and disordered eating? (Studies I-III)
4. How does age affect body image and disordered eating? (Study I and additional analyses)
5. Are body dissatisfaction and disordered eating associated with gender identity? (Study III)
6. How do transgender people perceive and relate to their bodies? (Study V)
7. Do transgender people have a heightened risk for body dissatisfaction and disordered eating? (Studies IV-VI)
8. If transgender people have a heightened risk for disordered eating, what is their understanding of its causes? (Study VI)
9. How does gender reassignment affect body image and eating behaviors? (Studies V-IV)

### 3 MATERIALS AND METHODS

Data were collected through two different projects: a population-based quantitative questionnaire study and a qualitative interview study. Studies I, II and III were based on the questionnaire study and studies IV, V and VI were based on the interview study. The research plans of both studies were approved by the Ethics Committee of Abo Akademi University.

#### 3.1 Participants

The participants in studies I-III came from the “Genetics of Sexuality and Aggression Study” (GSA), conducted at the Center of Excellence in Behavior Genetics at Abo Akademi University. In the first phase of the study, a questionnaire regarding sexuality and personality was sent to 10,000 Finnish twins aged 33-43 years; the population of interest was all Finnish speaking twin pairs born by the end of 1971 and currently residing in Finland. The participants’ addresses were obtained from the Finnish population registry. Twin pairs were sampled according to their date of birth from the above-mentioned date backwards until 2,000 male-male, 2,000 female-female, and 1,000 opposite-sex pairs had been identified. This resulted in a sample of 10,000 people representative of the Finnish population of this age range. The questionnaire with a paid return envelope was sent to these people in the beginning of 2005. The cover letter outlined that participation in the study was voluntary, and that all data would be confidential. The response rate was 36% (3,604 questionnaires were returned), which is comparable to prior studies on sexual behavior (Bailey, Dunne, & Martin, 2000) and disordered eating (Striegel-Moore et al., 2009). In the second phase of the study the questionnaire was sent to 23,577 Finnish adults (15,584 Finnish twins aged 18-33 years, as well as 7,983 of their siblings over the age of 18 years). It was also possible to fill out the questionnaire online. This time, the response rate was 45%, a total of 10,524 participants responded to the survey. According to Statistics Finland (<http://www.statistics.fi>) approximately 15% of Finns move each year. Considering that the data collection lasted over half a year, the real response rate was approximately 50%. The two sets of data were then merged together. The questionnaires were sent out with more than a year’s interval, and thus did not overlap. The participants in Study I ( $N = 11,468$ ) came from the first as well as the

second data collection, and the participants in Study II ( $N = 9,532$ ) came from the second data collection. The participants in Study III consisted of those participants from the second data collection who were assessed as having a conflicted gender identity (349 women and 222 men), plus controls matched on age and biological gender ( $N = 1,142$ ).

The 20 participants in Studies IV-VI were 11 female-to-male and nine male-to-female Finnish adults aged 21-62 years ( $M = 35.20$ ,  $SD = 12.10$ ) who identified themselves as transgender. All but four participants were diagnosed with gender identity disorder and had undergone or were undergoing gender reassignment at the time of the interviews. Two of the undiagnosed participants were enrolled in the assessment process to receive a GID diagnosis. One participant was recruited from the GSA sample, all remaining participants were recruited through *Transtukipiste*, a Finnish non-governmental organization providing support services for transgender people. The recruitment letter stated that adults over 18 years who identified themselves as transgender were wanted for an interview study on body image and eating behaviors. The first 21 people to sign up were interviewed. One person was excluded from the study due to being born with an intersex condition; thus the final  $N$  was 20. Participants were informed of the content and purpose of the study, and signed a form of informed consent. They were ensured anonymity and the right to discontinue the interview at any time.

Table 1  
*Overview of Research Questions, Data Collections, and Participants in the Original Studies*

Study	Research Questions	Data Collection	Type of Study	Instruments	Participants (N)	Age
I	Prevalence of BD Gender differences in BD Age effects on BD	Genetics of Sexuality and Aggression Study, data collection I and II	Quantitative	DSFI	11,468	18-49
II	Prevalence of sexual BD Gender differences in sexual BD	Genetics of Sexuality and Aggression Study, data collection II	Quantitative	DSFI FSFI IIEF	9,532	18-49
III	Associations between BD, DE and gender identity conflict	Genetics of Sexuality and Aggression Study, data collection II	Quantitative	DSFI GISM EAT-26	1,142	18-44
IV	Differences in BD and DE between transgender people and matched controls	Interview study and controls	Quantitative	DSFI EDI-3	39	21-62
V	BD among transgender people across the life span Effects of gender reassignment on BD	Interview study	Qualitative		20	21-62
VI	DE among transgender people across the life-span Effects of gender reassignment on DE	Interview study	Qualitative	EDI-3	20	21-62

*Note.* BD = body dissatisfaction, DE = disordered eating, DSFI = Derogatis Sexual Functioning Inventory, FSFI = Female Sexual Function Index, IIEF = International Index of Erectile Function, GISM = Gender Identity Scale for Males, EAT-26 = Eating Attitudes Test-26, EDI-3 = Eating Disorder Inventory-3.

## **3.2 Instruments**

Below, the main instruments used in the thesis are outlined. For more detailed information about the measurements, please consult the original publications.

### **3.2.1 Derogatis Sexual Functioning Inventory (Studies I-IV)**

Body image and body dissatisfaction were assessed with the body image subscale of the self-report inventory Derogatis Sexual Functioning Inventory (DSFI; Derogatis, 1975). The DSFI is a multidimensional measure of human sexual functioning consisting of ten subscales, among them, the body image used in the present studies. The DSFI body image subscale was chosen because it measures multiple aspects of body image, and includes both gender-specific and gender-neutral items. Given to 325 individuals, Derogatis and Melisaratos (1979) found that the internal consistency of the DSFI body image subscale was .58. The DSFI has been found to give reliable and valid scores when measuring sexual function (Daker-White, 2002). Participants answered questions on a five-point Likert-type scale ranging from 1 (completely disagree) to 5 (completely agree), with higher values indicating higher levels of body dissatisfaction. The direction of positive statements (“I enjoy being seen in a bathing suit” and “My face is attractive”) was reversed, in order for the composite variable to be a measure of body dissatisfaction. Eleven gender-neutral and three gender-specific items were used in the present study. Indicating acceptable internal consistency, Cronbach’s  $\alpha$  was .70 for women and .69 for men.

### **3.2.2 Sexual Body Image (Study II)**

Sexual body image was assessed using gender-specific items from the DSFI body image subscale (Derogatis, 1975) and items from a questionnaire about the body and sexual self-image (Hampson, 2000). The items from the DSFI (Derogatis, 1975) measuring sexual body image were “I have attractive breasts” and “I am pleased with the way my vagina looks” for women, and “I am satisfied with the size of my penis” for men. From the questionnaire by Hampson (2000) the items “I wish that I had bigger breasts,” and “I wish that I had smaller



breasts” were used for women, and the item “I wish that I had a larger penis” was used for men. Each question was answered on a Likert-type scale, ranging from 1 (completely disagree) to 5 (completely agree).

### **3.2.3 Eating Attitudes Test (Study III)**

Disordered eating was assessed using five items from the self-report questionnaire Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982), a test that has been used to measure symptoms related to eating disorders (Orbitello et al. 2006). EAT-26 scores have shown good reliability and validity when administered to clinical as well as non-clinical samples of women (Garner, Olmsted, Bohr, & Garfinkel, 1982; Ocker, Lam, Jensen & Zhang, 2007). Due to limited space in the GSA questionnaire, five EAT-26 items assessing disordered eating were selected. These items measured five core dimensions of disordered eating: intense fear of being fat, preoccupation with food, self-induced vomiting, dieting, and drive for thinness. These characteristics are also present in the eating disorders anorexia nervosa, bulimia nervosa and EDNOS (American Psychiatric Association, 2000). Each question was answered on a Likert-type scale, ranging from 1 (completely disagree) to 5 (completely agree) with higher values indicating more disordered eating. The items showed acceptable internal consistency; Cronbachs  $\alpha$  was .80 for women and .71 for men.

### **3.2.4 Eating Disorder Inventory (Study IV)**

Disordered eating was also assessed using the subscales Drive for Thinness, Bulimia, and Body Dissatisfaction from the Eating Disorder Inventory-3 (EDI-3; Garner, 2004). The EDI-3 is a widely-used self-report questionnaire that has shown good psychometric properties when administered to clinical as well as non-clinical samples (Clausen, Rosenvinge, Friborg & Rokkedal, 2011; Cumella, 2006). The EDI-3 is used to assess psychological traits or symptom clusters clinically relevant to the development of eating disorders (Garner, 2004). The Drive for Thinness subscale consists of seven items assessing drive for thinness, dieting concerns, preoccupation with weight, and fear of weight gain; the Bulimia subscale consists of eight

items assessing binge eating behavior; and the Body Dissatisfaction subscale comprises ten items assessing discontentment with the size and shape of one's body. Each item was answered on a five-point Likert scale, ranging from "never" to "always", with higher values indicating more disordered eating. Because the individual items were manually scored into scale scores on each answer sheet, Cronbach's  $\alpha$  for the scales were not available.

### **3.2.5 Gender Identity Scale for Males (Study III)**

Gender identity conflict was estimated using items from the Gender Identity Scale for Males (Freund, Langevin, Satterberg, & Steiner, 1977). This scale measures gender identity and has been validated on male students as well as gay men (Freund et al., 1977). The questions used for men were "Have you ever felt that you actually are a woman?" and "Have you ever wished you had a woman's body?" The questions could be answered dichotomously with either "yes" or "no". For women the questions were adapted and read "Have you ever felt that you actually are a man?" and "Have you ever wished you had a man's body?" The two questions were then merged into one item. Participants who replied "yes" to either or both questions were coded as having a conflicted gender identity.

### **3.2.6 Female Sexual Function Index (Study II)**

Female sexual function was assessed with the Female Sexual Function Index (FSFI; Rosen et al., 2000). The FSFI is a questionnaire consisting of 19 items measuring six dimensions of female sexual function: desire, arousal, lubrication, orgasm, satisfaction, and pain. The response options ranged from 0 to 5 on 15 items, and from 1 to 5 on 4 items. The FSFI has been shown to give valid and reliable scores when administered to women with sexual dysfunctions (Wiegel, Meston, & Rosen, 2005) as well as to a population-based sample of women (Witting et al., 2008). The six-factor structure used in Study II has been shown to be valid for the sample in question by Witting et al. (2008). Cronbach's  $\alpha$  for the factors ranged from .82 to higher (Witting et al., 2008).

### 3.2.7 International Index of Erectile Function (Study II)

Male sexual function was assessed using five items from the International Index of Erectile Function (IIEF; Rosen et al., 1997), measuring how often, over the past four weeks, attempting sexual intercourse has been satisfactory, how much one has enjoyed sexual intercourse, how often one has reached orgasm or climax, the level of desire, and overall satisfaction with one's sex life. Each question was answered on a Likert-type scale ranging from 1 (almost never or never) to 5 (almost always or always). The internal consistency of the items was good, with a Cronbach's  $\alpha$  of .77. Male erectile function was assessed using a scale score of the 5-item version of the International Index of Erectile Function (IIEF-5; Rosen, Cappalleri, Smith, Lipsky, & Peña, 1999), measuring confidence about keeping an erection, erections being hard enough for penetration, ability to maintain an erection, and satisfaction with attempted intercourse. Each question was answered on a Likert-type scale ranging from 1 (have not attempted intercourse) to 6 (almost always or always). The scale scores showed excellent internal consistency; Cronbach's  $\alpha$  for the items was .89. Administered to patients with erectile dysfunction, the IIEF has been shown to give reliable and valid scores (Rosen et al., 1997).

### 3.3 Statistical Analyses

All statistical analyses were conducted using SPSS Statistics 14.0 – 18.0. Because the participants in the questionnaire study consisted of twins and siblings, and variance was thus possibly reduced, the analyses in Studies I and III were conducted using the Complex Samples General Linear Model. This procedure takes dependence between observations into account. In study II and in the additional analyses conducted for the present thesis (not included in any of the published or submitted studies) the analyses were conducted using the Generalized Estimating Equations (GEE) module, likewise taking dependence between observations into account.

In Study I analyses of variance (ANOVA) were conducted to determine gender differences and differences between age groups, and regression analyses were conducted to determine the

associations between body mass index (BMI) and body image. In Study II Pearson correlations and generalized estimating equations were conducted to investigate associations between BMI, sexual function, sexual behavior, and body image variables. In Studies III and IV *t*-tests were conducted to compare levels of disordered eating and body dissatisfaction of participants with a conflicted gender identity / transgender participants to that of matched controls.

### **3.4 Qualitative Data Collection and Analysis**

The data for Studies V and VI were gathered through semi-structured interviews conducted by the author, ranging from 30 to 90 minutes in duration. Interview topics included body image, body dissatisfaction, eating habits, and possible disordered eating, in the current situation as well as throughout the life span. Participants were instructed using mainly open-ended questions and the interviewer encouraged participants to elaborate upon relevant themes by primarily using open-ended instructions such as “Tell me more.” The research questions and semi-structured interview questions are listed in Table 2. All interviews were audio taped and later transcribed verbatim.

Data were coded applying elements of Grounded Theory coding, following the instructions provided by Auerbach and Silverstein (2003). First relevant text was selected. This was done so that the author read through all the transcribed raw text with the research questions (see Table 2) in mind, selecting the text that was related to them and discarding the rest. To ensure reliability, a co-author independently selected relevant text from parts of the raw text. The selections were then compared. Indicating high inter-rater reliability, the selections were in concordance with each other. The relevant text was then arranged into repeating ideas by grouping together parts of the text that were related to each other and expressed the same idea. In the same way, the repeating ideas were then organized into themes. Reading through the list of repeating ideas, ideas related to each other were grouped together in common themes. In Study IV, the themes were further organized into two higher-order constructs. The coding into repeating ideas, themes, and higher-order constructs was carried out by the author and subsequently reviewed by two co-authors. There were two minor discrepancies and these were resolved through team discussions. The first discrepancy concerned dividing one of the

themes (suppressing gender and accentuating gender) into two different themes, which was decided upon. The other discrepancy concerned one sentence that was moved from one repeating idea to another.

Table 2

*Research Questions and Semi-Structured Interview Questions of the Qualitative Studies*

Study	Research Questions	Semi-Structured Interview Questions
V	<p>What do the body image and body dissatisfaction of transgender persons look like?</p> <p>How does gender reassignment affect body image and body dissatisfaction?</p>	<p>Tell me about your relationship with your body.</p> <p>Describe your relationship with your body throughout your life span.</p> <p>What aspects of your body are you satisfied with?</p> <p>What aspects of your body are you dissatisfied with?</p> <p>What would you like (your body) to look like?</p> <p>Describe your ideal body.</p> <p>Have you ever tried to change your body in some way? (How? Why?)</p> <p>How do you feel that other people perceive your body?</p>
VI	<p>What do the eating behaviors and cognitions of transgender persons look like?</p> <p>Do transgender persons have an elevated risk for disordered eating?</p> <p>How does gender reassignment affect eating behaviors and cognitions, and disordered eating?</p>	<p>Tell me about your eating habits.</p> <p>Tell me about your relationship with food and eating.</p> <p>Describe your relationship with food and eating throughout your life span.</p> <p>Describe what you eat during a so-called typical day in your life.</p> <p>Have you ever tried to change your body by changing your eating habits? (How? Why?)</p> <p>Have you ever experienced any problems related to food and eating?</p> <p>If so, do you have any thoughts about the underlying causes of these problems?</p>

## 4 RESULTS

### 4.1 Prevalence of and Gender Differences in Body Dissatisfaction

As shown in Study I, body dissatisfaction was common among both women and men. For example, 52% of the women and 38% of the men reported being less attractive than they would like to be, and 59% of women and 30% of men reported not liking parts of their bodies at all. Of the women, 38% perceived themselves as being too fat, for men the corresponding percentage was 21%. Regarding height, 19% of the women and 16% of the men thought of themselves as too short, and 4% of the women and 3% of the men thought of themselves as too tall. Body satisfaction was also observable, for example, 56% of the women and 67% of the men reported having a well-proportioned body.

Women reported higher levels of body dissatisfaction than men on 7 of 11 items, the largest difference was found on the item “There are parts of my body that I don’t like at all” ( $M = 3.32$ ,  $SE = 0.02$  for women,  $M = 2.45$ ,  $SE = 0.02$  for men,  $F = 993.53$ ,  $p < .001$ ). Men reported more dissatisfaction only regarding perceiving oneself as being too thin ( $M = 1.73$ ,  $SE = 0.01$  for women,  $M = 1.35$ ,  $SE = 0.02$  for men,  $F = 375.47$ ,  $p < .001$ ). Cohen’s  $d$  for the gender difference on the composite variable measuring body dissatisfaction was 0.53, indicating a medium sized effect.

As shown in Study III, a larger proportion of the men (68%) than the women (50%) reported being satisfied with their genitals. Of the women 50% reported being satisfied with their breasts, whereas 41% wished they had bigger breasts and 13% wished they had smaller breasts. Sexual body image was correlated with the composite variable measuring general body dissatisfaction. For women, body dissatisfaction was negatively associated with satisfaction with one’s vagina ( $r = -.35$ ) and one’s breasts ( $r = -.42$ ). For men, body dissatisfaction was negatively associated with penis size satisfaction ( $r = -.40$ ).

#### 4.2 Prevalence of Disordered Eating, and Gender Differences in Disordered Eating and Body Mass Index

Using all the data from the second data collection of the GSA study ( $N = 9,532$ ; 6,201 women and 3,331 men) it was found that women reported higher levels of disordered eating on all five items measuring this construct (see Table 3). Cohen's  $d$  for the gender difference on the composite variable measuring disordered eating was 0.87, indicating a large sized effect. The mean body mass index (BMI; weight/height<sup>2</sup> in kg/m<sup>2</sup>) was higher for men than for women.

Table 3  
*Gender Differences in Disordered Eating and BMI (Adjusted for Clustered Samples)*

	Women		Men		$B$	$SE$	$\chi^2$	$d$
	$M (SD)$	Agree (%)	$M (SD)$	Agree (%)				
Intense fear of being fat	2.88 (1.42)	44.8	2.00 (1.16)	17.6	0.88	.02	1850.00***	0.68
Preoccupation with food	2.33 (1.37)	27.7	1.70 (1.02)	9.6	0.63	.02	1134.20***	0.52
Self-induced vomiting	1.45 (1.12)	10.9	1.07 (0.41)	1.1	0.38	.01	1013.72***	0.45
Dieting	3.22 (1.50)	59.0	2.24 (1.40)	31.2	0.98	.02	1771.46***	0.68
Drive for thinness	2.48 (1.43)	26.7	1.15 (0.98)	9.1	1.04	.02	3052.25***	1.08
Scale score (disordered eating)	12.36 (5.09)	-	8.54 (3.56)	-	3.82	.10	1329.91***	0.87
Body mass index	23.04 (4.10)	-	24.55 (3.51)	-	1.51	.09	300.04***	0.40

*Note.* Higher values indicate more agreement with the statements, scale 1-5. Agree (%) = Percentage of respondents who reported that they agree or somewhat agree with the statement. \*\*\* $p < .001$



### **4.3 Prevalence of Gender Identity Conflict**

As shown in Study III, 5.6% of the women and 6.7% of the men of the second data collection of the GSA study reported having felt like a member of the opposite gender and/or having wished they had the body of the opposite gender. In comparison, 1.2% of the women and 0.6% of the men answered “yes” to both questions, that is, reported both having felt like a member of the opposite gender and having wished they had the body of the opposite gender.

### **4.4 Associations between Age and Body Image, Body Dissatisfaction and Disordered Eating**

In Study I, participants were divided into three age groups (18-26, 27-35, and 36-49 years) that were compared with each other. The categorization was based on female fertility rates that show evident decline in fertility around the age of 26 and 36. Women aged 19–26 years have been shown to have significantly higher probabilities of pregnancy than women aged 27–29 years. Women aged 30–34 years are similar to the 27 to 29 year-olds, but women older than 35 years have further reductions in their probabilities of pregnancy (Dunson, Baird, & Colombo, 2004). Male participants were divided into corresponding age groups, based on female fertility rates. These groups were then compared with each other, controlling for BMI. The results showed that higher age was associated with decreased body satisfaction with, for example, perceiving one’s body as being well-proportioned. However, on other items, such as having body parts one doesn’t like at all, higher age was associated with increased body satisfaction. In addition, some associations were non-linear. For example, regarding feeling embarrassed if seen nude by a lover, younger women and men (18-26 years) reported more embarrassment than the next age group (27-35 years), but the oldest age group (36-49 years) reported more embarrassment than the middle group.

As shown in Table 4 additional regression analyses on continuous data to examine associations between age and body image, disordered eating, gender identity conflict, and BMI were also conducted. The results showed that higher age was associated with increased body satisfaction on around half of the items, and associated with increased body

dissatisfaction on the other half, for both women and men. For women, higher age was associated with lower levels of disordered eating, while the opposite was true for men. For both genders BMI increased with age. For women, higher age was negatively associated with wishing one had the body of the opposite gender, while the association was positive for men.

Table 4  
*Associations between Age and Body Image, Disordered Eating, and Body Mass Index*

	Women			Men		
	<i>r</i>	<i>B (SE)</i>	$\chi^2$	<i>r</i>	<i>B (SE)</i>	$\chi^2$
I am less attractive than I would like to be	.03	0.006 (.001)	8.35**	.00	0.001 (.002)	0.08
I am too fat	.01	0.003 (.002)	1.01	.10**	0.018 (.003)	27.55***
I enjoy being seen in a bathing suit	-.05	0.009 (.002)	18.23***	-.06**	0.009 (.003)	13.01***
I am too thin	.03	0.004 (.001)	7.12**	-.08**	0.012 (.003)	23.09***
I would be embarrassed to be seen nude by a lover	-.07	0.01 (.002)	27.17***	-.06**	0.007 (.002)	10.26**
I am too short	-.11	0.019 (.002)	70.53***	.00	0.00 (.003)	0.01
There are parts of my body I don't like at all	-.15	0.03 (.003)	88.48***	-.08**	0.015 (.004)	17.17***
I am too tall	-.05	0.005 (.001)	13.75***	.05**	0.005 (.002)	10.76***
I have too much body hair	-.06	0.012 (.002)	20.54***	-.09**	0.013 (.002)	31.78***
My face is attractive	-.02	0.004 (.002)	4.75*	-.07**	0.009 (.002)	17.49***
I have a well-proportioned body	-.08	0.014 (.002)	49.04***	-.11**	0.015 (.003)	35.48***
I have attractive breasts	.00	0.001 (.002)	0.09	-	-	-
I am pleased with the way my vagina looks	-.01	0.001 (.002)	0.17	-	-	-
I am satisfied with the size of my penis	-	-	-	-.06**	0.009 (.003)	12.92***
Intense fear of being fat	-.10	0.028 (.006)	23.46***	.04*	0.011 (.005)	4.78*
Preoccupation with food	-.05	0.013 (.004)	8.70***	.02	0.005 (.004)	1.54
Self-induced vomiting	-.10	0.02 (.004)	32.63***	-.01	0.001 (.002)	0.11
Dieting	.02	0.005 (.004)	1.89	.16**	0.048 (.006)	68.38***
Drive for thinness	-.06	0.016 (.005)	12.82***	.06*	0.012 (.004)	9.02**
Body mass index	.17	0.13 (0.02)	76.52***	.23**	0.19 (0.01)	179.38***

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

#### 4.5 Gender Identity, Body Image and Body Dissatisfaction

In Study III the body dissatisfaction of 571 individuals (349 biological women and 222 biological men) who were assessed as having a conflicted gender identity (i.e. reported feeling like a member of the opposite gender and/or wishing they had the body of the opposite gender) were compared to controls matched on age and biological gender. The results showed significant associations between gender identity conflict and body dissatisfaction for both biological women and men. Women with a conflicted gender identity reported higher levels than controls regarding feeling less attractive than one would like to be, being embarrassed to be seen nude by a lover, perceiving oneself as having too much body hair, and on the composite variable measuring body dissatisfaction. Men with a conflicted gender identity reported higher levels of body dissatisfaction than controls regarding feeling less attractive than one would like to be, enjoying being seen in a bathing suit, disliking parts of one's body, and on the composite variable measuring body dissatisfaction.

In Studies IV and V body image and body dissatisfaction were studied in a sample of 20 transgender people. When comparing transgender participants with controls matched on age, biological gender and educational level, it was found that transgender participants reported higher levels on a composite variable measuring body dissatisfaction than controls ( $M = 30.94$ ,  $SD = 6.33$  for transgender participants,  $M = 26.90$ ,  $SD = 4.51$  for controls,  $t = 2.18$ ,  $p < .05$ ,  $d = 0.74$ ).

In the interviews with transgender persons both past and current body dissatisfaction were described by a majority of the participants. Using Grounded Theory coding (Auerbach & Silverstein, 2003) 15 repeating ideas were identified. These were organized into five themes: (1) *The body*, (2) *Growing up and development*, (3) *Gender reassignment*, (4) *Psychological consequences*, and (5) *Androgyny and passing*. These themes were further organized into two higher-order constructs: a psychological and a physiological construct. Of the participants 50% talked about puberty and all of them described it as a particularly difficult time when their relationships with their bodies became more complicated. Of the 11 female-to-male participants, 55% described markedly negative experiences of getting their menstrual period, including pains and cramps as well as feelings of repugnance. One participant implied a

possible connection between menstrual cramps and GID. No positive experiences of one's menstrual periods were mentioned. Both positive and negative feelings towards the body were expressed, but body dissatisfaction was more frequently described than body satisfaction. Concerning breasts and chest, intense feelings were expressed. Whereas male-to-female participants described developing breasts as an eagerly awaited effect of gender reassignment, 82% of female-to-male participants described disgust, shame and aversion when talking about their breasts and chest. Negative feelings towards the genitals of one's biological gender were also described by 56% of the male-to-female participants and one female-to-male participant. Of the female-to-male participants, 73% described a feminine distribution of fat on the hips as something negative, whereas 67% of the male-to-female participants expressed dissatisfaction concerning narrow hips and thin thighs. Consequences of the extensive body dissatisfaction that were described by a majority of participants were distress and anxiety. Thirty percent of the participants described intense feelings of hatred and disgust towards their bodies and, consequently, themselves. Likewise, 30% described dissociative feelings and estrangement in relation to their bodies, as well as difficulties integrating their minds with their bodies and seeing themselves as a whole person. Gender reassignment was mainly described as having a positive effect on body image. Of the 16 participants who had received hormone treatment, 14 participants (88%) described it as having improved their body satisfaction. Unwanted weight gain was, however, mentioned by 25% of these participants as a negative consequence of hormone treatment. Five of the six (83%) female-to-male participants who had had a mastectomy described feelings of relief and finally having the chest they were always supposed to have. Of the six male-to-female participants that had undergone genital surgery, five (83%) described feelings of relief after having their genitals corrected. One participant had experienced some complications recovering from genital surgery; due to being asymmetrical her labia rubbed against each other. One of the most important consequences of gender reassignment was being able to pass socially as the desired gender. However, five participants (25%) also described androgyny as desirable, and questioned the notion of gender as a dichotomous construct.

#### 4.6 Disordered Eating and Gender Identity

In Study III levels of disordered eating among 571 individuals (349 biological women and 222 biological men) who were assessed as having a conflicted gender identity (i.e. reported feeling like a member of the opposite gender and/or wishing they had the body of the opposite gender) were compared to controls matched on age and biological gender. Women with a conflicted gender identity reported more preoccupation with food and more self-induced vomiting than controls, and also scored higher on the composite variable measuring disordered eating. No significant differences in levels of disordered eating between men with a conflicted gender and controls were detected.

Studies IV and VI focused on eating behaviors and disordered eating in a sample of 20 transgender people. Comparing transgender participants with controls matched on age, biological gender and educational level, no significant differences regarding drive for thinness or bulimia were found. However, in the interviews, 70% of the participants reported past or current disordered eating. Disordered eating was reported by both male-to-female and female-to-male participants. Excessive dieting was most commonly described (65%), but participants also reported bingeing (25%), purging (25%), and excessive exercise (40%). For example, participants described strictly monitoring and restricting calorie intake, losing large amounts of weight rapidly, intentionally maintaining an abnormally low weight, inability to control eating, self-induced vomiting, and absence of menstrual periods (amenorrhea) due to excessive amounts of physical exercise.

All participants who described past or current disordered eating were asked if they had any thoughts about its underlying causes. Using Grounded Theory coding (Auerbach & Silverstein, 2003) the causes mentioned were coded into three themes: (1) *Suppressing gender*, (2) *Accentuating gender*, and (3) *Other causes*. Of the participants who reported disordered eating 35% mentioned attempts to suppress the characteristics of their biological gender through weight loss as a cause. In particular, female-to-male participants described trying to suppress the body's femininity such as breasts and hips. Of the participants who reported disordered eating 21% mentioned attempts to accentuate the characteristics of their desired gender through weight loss. Male-to-female participants described perceiving slenderness as

an important aspect of their desired femininity. Other perceived causes of disordered eating that were mentioned were strive for self-control, strive for autonomy, not deserving to eat, feelings of being an outsider and not being good enough, and psychological stress and strain.

Of the 16 participants who had undergone some degree of gender reassignment treatment (hormone treatment and/or surgery), 25% described treatment as having a relieving effect on their disordered eating symptoms. Participants described tolerating weight gain better after having received hormone treatment and/or surgery, and feeling more confident and present in their own bodies. However, two participants (13%) described unwanted weight gain due to hormone treatment.

## 5 DISCUSSION

The aim of the present thesis was to examine body image, body dissatisfaction, and disordered eating in relation to gender and gender identity, using both quantitative and qualitative methods. The participants were part of a population-based study of Finnish adults, as well as transgender adults participating in an interview study. Previous research on body image, body dissatisfaction and disordered eating has largely been based on relatively small convenience samples of female college students. Three of the studies in this thesis were based on a large, population-based sample of adult women and men, few previous studies have included samples of comparable size. Multiple aspects of body image and body dissatisfaction were investigated, including sexual body image. The present thesis also includes one of the first studies to empirically investigate the relationship between gender identity and disordered eating and, to our knowledge, the first study to investigate the possible underlying causes of this association.

### 5.1 Gender Differences in Body Image and Body Dissatisfaction

Body dissatisfaction was common in both women and men. For example, a little more than half of the women and one third of the men reported being less attractive than they would like to be (52% of the women, 38% of the men), and disliking parts of their bodies (59% of the women, 30% of the men). Confirming previous research (e.g. Davison & McCabe, 2005; Muth & Cash, 1997; Neighbors & Sobal, 2007) we found that women were more dissatisfied with their bodies than men, both in terms of general body image as well as concerning specific parts and aspects of their bodies. On the scale score measuring general body dissatisfaction, the gender difference was of moderate effect size. Regarding sexual body image gender differences were not statistically tested for because men and women were asked different questions; however, a seemingly larger proportion of the men (68%) than the women reported being satisfied with their genitals (50%).



As noted in the introduction, possible reasons for the gender discrepancy in body dissatisfaction have been proposed. Cultural standards of female beauty, emphasizing the desirability of thinness (e.g. Tiggemann & Slater, 2004) have received much attention as an explanation as to why so many women are dissatisfied with the shape and size of their bodies. As described in the introduction, exposure to images of thin and beautiful women in mass media and internalization of this ideal have been linked to increased body dissatisfaction in women (Fitzsimmons-Craft, 2011; Groesz et al., 2001). Objectification theory (Fredrickson & Roberts, 1997) states that we live in a society where the female body is construed as a sexual object, and that one consequence of this is that girls and women in Western culture are socialized to internalize this perspective, and gradually begin to see themselves and their own bodies as objects to be looked at, monitored, and evaluated. This process is called self-objectification, and may lead to increased body shame. Research has found support for an association between women's sexual objectification and body shame (e.g. Augustus-Horvath & Tylka, 2009; Tylka & Sabik, 2010). Concerning sexual body image, it is conceivable that women perceive their genitals more negatively than men because of cultural stereotypes about sexuality that allow men to more comfortably enjoy their sexuality than women (Reinholtz & Muehlenhard, 1995). Continuous exposure to media images of firm, large breasts is also likely to affect how women perceive their own breasts, and it is plausible that objectification theory could also be applied to sexual body image. For example, there is some evidence that women are more likely than men to remove pubic hair due to culturally normative reasons (Smolak & Murnen, 2011). From another perspective it can, however, be argued that beauty ideals and media images exist in the first place, and that women are susceptible to them, because women inherently are more likely to be focused on their physical appearance. In terms of evolutionary psychology women are ultimately thought to be more preoccupied with their bodies and appearance than men. Female fertility begins to decline earlier than male fertility does, and because physical attractiveness is a cue of age and fertility men place greater importance on attractiveness in their mate choice than women do (Barrett et al., 2002).

The present results showed that men reported more dissatisfaction than women only regarding perceiving oneself as being too thin. This supports the notion that male and female body dissatisfaction differ from each other and that mere comparisons on general body image are insufficient. Drive for thinness may be less important to men than women, instead, there is a tendency among men to strive to achieve a more muscular ideal (McCabe & Ricciardelli,

2003; Peixoto Labre, 2005; Tager, Good, & Morrison, 2006). In fact, men may actually wish to increase their body size (Adams et al., 2005; McCabe & Ricciardelli, 2003). As Bergeron and Tylka (2007) pointed out, however, male body dissatisfaction does not only include drive for muscularity, but aspects such as dissatisfaction with body fat or height are also important. In the current population-based sample, 21% of the men perceived themselves as being too fat, 16% as being too short, and 3% as being too tall. In addition, approximately one third of the men agreed or somewhat agreed with the statements "I am not as attractive as I would like to be," and "There are parts of my body that I don't like at all." Also, about half of the men reported not perceiving themselves as well-coordinated and athletic, and not being pleased with the physical condition of their body. Male body dissatisfaction has gained more attention in recent years, and it has been suggested that it is on the rise (Westmoreland Corson & Andersen, 2004). One possible explanation to this is that men are increasingly being exposed to images of lean, muscular men in mass media (Halliwell, Dittmar, & Orsborn, 2007; McCabe & Ricciardelli, 2003; Peixoto Labre, 2005). From an evolutionary perspective, men would be expected to strive for muscle gain due to competition for mates and status. Size and strength indicate physical prowess to competitors, and enable winning in direct combat (Buss, 1988; Jonason, 2007). It has been shown that women prefer muscular men (Dixson, Halliwell, East, Wignarajah, & Anderson, 2003), and men who compete in sports report having more sexual partners than other men (Faurie, Pontier, & Raymond, 2004).

The socio-cultural and the evolutionary perspective are, however, not mutually exclusive. It is conceivable that the gender differences in body image and body dissatisfaction have an evolutionary foundation that may lay the ground for cultural standards of beauty, but that cultural messages augment body surveillance, body shame and body dissatisfaction in women, and consequently further increase these gender differences. When discussing the influence of media and appearance ideals on body dissatisfaction, the question of why these ideals and images exist in the first place is rarely raised. Feminist theorists have proposed that unrealistic beauty and weight ideals are ways in which women, their bodies, and their sexuality are controlled and restrained to prevent women from gaining power in a male-dominated society (e.g. Grogan, 2008; Wolf, 1991). However, it remains somewhat unclear how, exactly, these quite abstract mechanisms are implemented and by whom. Evolutionary psychology provides an alternative, and perhaps more plausible, explanation to the question of why appearance

ideals exist in the form they do, why more focus is placed on women's appearance, and why women are so susceptible to media's messages and beauty ideals.

## **5.2 Associations between Age, Body Image and Body Dissatisfaction**

Age effects on body image and body dissatisfaction have not been widely studied, and little is known about body image in older adulthood. Some previous studies have not found any age effects on body satisfaction (Demarest & Allen, 2000; Frederick, Peplau, & Lever, 2006), whereas others have found that older people report less body dissatisfaction than younger people (Mellor et al., 2010; Peat et al., 2011). It has been proposed that body image acquires a different meaning as we age, so that the functionality of the body may become more important than appearance (Mellor et al., 2010; Tiggemann, 2004). In addition, it has been suggested that although body dissatisfaction may persist across the life span, an ideal body shape may be of less importance for older people (Peat et al., 2011) and the importance women place on physical appearance may decrease with age (Peat et al., 2008; Tiggemann, 2004). According to the present results age does not simply have a positive or negative effect on body image, but instead adults may become more satisfied with some aspects of their bodies, and less satisfied with others, as a function of age. Body image consists of various aspects that appear to be related to age in different ways. How age is associated with the different dimensions of body image may further be moderated by gender, so that age affects women's and men's body images in partly different ways. The present results also showed that some associations with age were non-linear, indicating that body satisfaction and dissatisfaction may fluctuate during the adult life span. This is not surprising, considering that the age span of the participants, 18-49 years, includes the most fertile years when adults are most likely to reproduce. For women, pregnancy, childbirth, and nursing often cause changes in body size and weight, as well as changes in the appearance of specific body parts.

However, it should be noted that the age effects detected here cannot be conclusively separated from cohort effects due to the cross-sectional design of the questionnaire study. For example, the fact that higher age was associated with less dissatisfaction with one's body hair for both women and men may reflect the increasing influence of the socio-cultural beauty ideal of a hairless body (Tiggemann & Kenyon, 1998). It should also be noted that the

participants in the present study were 18 to 49 years, so the present results may not be generalizable to people at the older end of adulthood.

### **5.3 Gender Differences in Disordered Eating**

In the population-based sample more than half of the women (59%) and almost one third of the men (31%) reported engaging in dieting behavior, and 45% of the women and 18% of the men reported an intense fear of being fat. Of the women, around 27% reported drive for thinness as well as preoccupation with food, for men the corresponding percentage were 9%. Self-induced vomiting was reported by 11% of the women and 1% of the men. That one in 10 women reported engaging in self-induced vomiting is an especially disconcerting finding. Nevertheless, it supports the findings of Striegel-Moore et al. (2009) who in a large community sample of young adults (18-35 years old) discovered that almost 4% of women reported self-induced vomiting to compensate for overeating “often” during the past three months.

In line with previous research (e.g. Jacobi et al., 2004; Lewinsohn et al., 2002) we found that women reported higher levels of disordered eating than men. On the scale score measuring disordered eating, the effect size of the gender difference was large. As is the case regarding the gender difference in body dissatisfaction, different explanations as to why women are more vulnerable to disordered eating than men have been proposed. As outlined in the introduction, exposure to mass media images of thin women is often mentioned as an explanation as to why disordered eating is more common among women. An effect of media exposure on disordered eating has also been empirically shown (Carney & Louw, 2006; Stice et al., 1994). Also, as previously described, objectification theory (Fredrickson & Roberts, 1995) states that we live in a society where the female body is socially constructed as a sexual object, which causes women to gradually internalize this perspective and begin to see themselves and their bodies as objects to be looked at, monitored and evaluated. This self-objectification may in turn increase body shame, which according to objectification theory may then contribute to the development of eating disorders. In other words, women’s disordered eating can be seen as attempts to alleviate the body dissatisfaction that women experience due to Western culture’s objectification of the female body or, on the other hand,

as attempts to protest against this objectification (Fredrickson & Roberts, 1995). As mentioned in the introduction, previous studies have found evidence for an association between sexual objectification, self-objectification and disordered eating (Augustus-Horvath & Tylka, 2009; Tylka & Sabik, 2010). As noted in the introduction and shown by the present results, disordered eating also occurs among men. The symptoms may look somewhat different for men; men more commonly engage in overeating, are more likely to engage in excessive exercise, and more commonly experience drive for muscularity (Harvey & Johnson, 2003; Striegel-Moore et al., 2009; Weltzin et al., 2005). The role of media images and theories of objectification and self-objectification have mainly been discussed in relation to women's disordered eating, but a relevant question is whether, and to what extent, media influence, internalization of appearance ideals, and objectification theory also are applicable to men. Daniel and Bridges (2010) found support for an association between internalization of media ideals and drive for muscularity in men but they failed to detect any association between objectification and drive for muscularity. They drew the conclusion that media appears to impact drive for muscularity among men, but that the manifestations of this relationship are unclear.

From an evolutionary perspective it has been argued that drive for thinness and disordered eating among women ultimately are manifestations of female intra-sexual competition for mates (Abed, 1998). Attractiveness and slimness are signs of youth and fertility, and because women's fertility begins to decline earlier than men's, men are thought to place more importance on physical attractiveness in women than women do in men (Barrett et al., 2002). This is thought to explain why drive for thinness is of greater concern to women. It has been argued that female intra-sexual competition has been intensified in Western societies due to factors such as declining fertility, the increasing instability of long-term relationships leading both men and women to return repeatedly to the mate market, the increasing prevalence of media images of young women, and living in large cities with large numbers of other youthful, autonomous women (Faer et al., 2005). As discussed earlier, the socio-cultural and the evolutionary perspective are not incompatible. Rather, it can be argued that gender differences in disordered eating and body dissatisfaction may be grounded in evolutionary adaptations, but that body image and eating behaviors are shaped by and expressed in the environment we live in.

#### **5.4 Associations between Age and Disordered Eating**

Interestingly, higher age was associated with lower levels of disordered eating for women, and higher levels for men, although BMI was positively associated with age for both genders. These results support the findings of a 20-year long longitudinal study showing that although both men's and women's body weight increased over time, women's weight perception and dieting frequency decreased with age, whereas men's weight perception and dieting frequency increased with age (Keel, Baxter, Heatherton, & Joiner, 2007). A plausible interpretation is that drive for thinness and dieting reflect reactions to actual weight gain in men, whereas the items included here to a higher extent capture disordered eating among women. It is known that disordered eating is most common among young women (Currin et al., 2005; Hudson et al., 2007), and the fact that women became less likely to report fear of being fat, preoccupation with food, self-induced vomiting, and drive for thinness as they became older (and heavier), supports the notion that younger women are more prone to disordered eating, whereas older women become more accepting of their weight despite actual weight gain.

#### **5.5 Body Image, Body Dissatisfaction, and Gender Identity**

Comparing the body dissatisfaction of 571 individuals (349 women and 222 men) with a conflicted gender identity (i.e. reported feeling like a member of the opposite gender and/or wishing they had the body of the opposite gender) to that of controls matched on age and biological gender, it was found that gender identity was associated with higher levels of body dissatisfaction for both women and men. The differences applied to both a composite measure of body dissatisfaction, as well as specific aspects of it. For example, women with a conflicted gender identity reported higher levels of body dissatisfaction than controls regarding perceived attractiveness and embarrassment about being seen nude by a lover, and men with a conflicted gender identity reported more body dissatisfaction than controls regarding perceived attractiveness and being seen in a bathing suit, suggesting that body image in relation to sexuality may be a particularly sensitive matter for people with a conflicted gender identity.

In the interviews with 20 transgender adults, body dissatisfaction in different life phases was described. Although participants also described satisfaction with their bodies, body dissatisfaction was more evident and extensive. When compared to controls matched on age, biological gender and educational level, transgender participants also reported higher levels of body dissatisfaction.

That gender identity conflict and gender identity disorder are associated with body dissatisfaction is, to a certain extent, self-explanatory. However, the depth and extension of the body dissatisfaction described by the participants is noteworthy. Participants described feelings of anxiety, repugnance and self-loathing when describing their relationships with their own bodies. Dissociative experiences such as experiencing estrangement in relation to oneself were also mentioned. Sexual body image was, not surprisingly, particularly emotionally charged. For example, a majority of female-to-male participants described intense dissatisfaction with their breasts before gender reassignment. It is also worth mentioning that six of the 11 female-to-male participants described very negative and painful experiences of their menstrual period, and that one participant even implied a possible connection between menstrual cramps and GID. Based on the present data it is, however, impossible to draw any conclusions regarding whether such a connection is plausible or not. Persons with GID may also be inclined to interpret experiences associated with their biological gender, such as puberty, more negatively.

Interestingly, some participants criticized the view of gender as a dichotomous construct and instead advocated androgyny. In other words, gender was not simply seen as something that one wishes to “change” from one opposite to the other. Androgyny was perceived as desirable and something that can be played with but, at the same time, as somewhat problematic. Because we live in society where gender is usually understood in dichotomous terms, participants described having to choose between either being male or female, and consequently choosing their desired gender over their biological gender. As Braun and Wilkinson (2005) pointed out, gender reassignment can in fact be seen as reinforcing the dichotomous gender system and also reinforcing the perceived linkage between genitals and gender identity.

In line with previous research (Fleming et al., 1982; Kraemer et al., 2008) and a case study describing a male-to-female person responding to gender reassignment with improvement in body image (Winston et al., 2004), gender reassignment was primarily described as having a positive effect on body image. A vast majority of those participants who had undergone hormone treatment and/or corrective surgery described it as having improved their body satisfaction. In particular, participants reported a positive effect of gender corrective treatment on sexual body image.

### **5.6 Disordered Eating and Gender Identity**

Comparing the levels of disordered eating of 571 individuals (349 women and 222 men) with a conflicted gender identity (reported feeling like a member of the opposite gender and/or wishing they had the body of the opposite gender) to that of controls matched on age and biological gender, it was found that gender identity conflict was associated with higher levels of disordered eating for women, but not for men. Women with a conflicted gender identity reported more preoccupation with food and self-induced vomiting than controls, and also scored higher on the composite variable measuring disordered eating.

In the comparison between transgender participants and controls matched on age, biological gender and educational level no significant differences were found regarding drive for thinness or bulimic symptoms. Nevertheless, transgender participants reported higher levels of disordered eating than controls with effect sizes indicating a small effect. The fact that the differences did not reach significance may have been a matter of insufficient statistical power due to the small sample size ( $N = 39$ ).

In the interviews with 20 transgender people, 70% (both male-to-female and female-to-female participants) described past or current disordered eating. Excessive dieting was reported, as well as bingeing, purging, and excessive physical exercise. For example, participants described restricting calorie intake, rapid weight loss, loss of control over eating, self-induced vomiting, and amenorrhea due to excessive amounts of physical exercise. These results provide support to previous case reports (Fernández-Aranda, et al., 2000; Hepp & Milos, 2002;



Hepp et al., 2004; Surgenor & Fear, 1998; Winston et al., 2004) and one empirical study (Vocks et al., 2009) suggesting an association between gender identity disorder and disordered eating.

Although case studies and one previous empirical study have suggested that gender identity disorder is linked to a higher vulnerability to eating disorders, no empirical studies have investigated the dynamics behind this possible association. Addressing this gap in the literature, we asked participants who reported any past or current disordered eating if they had any thoughts about the underlying reasons. The notion that transgender people may strive for thinness and weight loss in order to suppress characteristics of their biological gender or accentuate features of their desired gender (Hepp & Milos, 2002; Hepp et al., 2004) received the most support. Other previously proposed explanations to the association, such as negative self-image (Fernández-Aranda et al., 2000) or social stigma (Vocks et al., 2009), only received marginal support. The suggestion that female-to-male persons who are overweight could be reluctant to lose weight because breasts and hips appear smaller relative to abdominal size in overweight people (Vocks et al., 2009) was not supported by the present results.

In the one previous study examining the relationship between disordered eating and gender reassignment, no association was detected (Vocks et al., 2009). However, in line with a previous case study of a male-to-female patient whose body satisfaction and self-esteem increased after gender reassignment treatment (Winston et al., 2004), our results showed that transgender participants primarily described gender reassignment treatment as alleviating symptoms of disordered eating. Participants described increased self-confidence and tolerance of weight gain after hormone treatment and/or corrective surgery.

## **5.7 Limitations**

The studies included in the present thesis had some limitations that should be acknowledged. Although, as described above, the sampling procedures of the studies included had notable advantages, there were also disadvantages that should be mentioned. The response rate of the

two data collections in the questionnaire study that was used in Studies I-III was relatively low, which could affect the reliability of the results. The 20 transgender participants of the interview study were not randomly selected, but consisted of people who, knowing the broad topics of the study, volunteered for it. It is possible that people who were more interested in or preoccupied by body image and disordered eating were more likely to volunteer for the interview study, possibly resulting in selection bias and compromising the representability of the sample. Also, although the sample size was comparable to that of other qualitative studies, it nevertheless only consisted of twenty people and therefore the results cannot necessarily be generalized to all transgender people.

Regarding the instruments used in the present studies, a few comments should likewise be made. In study III, disordered eating was assessed with five items from the EAT-26 (Garner, 1982), and the results can be interpreted as signs of disordered eating, but not as diagnosable eating disorders. Also, conflicted gender identity was assessed using only two questions. To achieve adequate statistical power, participants were coded as having a conflicted gender identity if they answered “yes” to at least one of them. In other words, participants who had answered “yes” to both questions were combined with those who answered “yes” to only one, although it is possible that there were differences between these two groups. Of the participants of the GSA sample, 6.0% answered “yes” to one or both questions and 0.8% answered “yes” to both questions. It is conceivable that the latter group is more similar to people with gender identity disorder. Estimates of the prevalence of gender identity disorder vary between studies, and possibly also between cultures, but on average the prevalence has been estimated at around 1:30,000 (0.003%) for biological men and 1:100,000 (0.001%) for biological women (De Cuypere et al., 2007). On the other hand, it is also thinkable that gender identity conflict could be understood in continuous terms, so that the different groups mentioned above represent different positions on a continuum of gender identity.

A problem that affects the field of body image and disordered eating research at large, the present study being no exception, is the use of disparate instruments to measure the traits in question. There are numerous instruments available to measure body image, body dissatisfaction and disordered eating, capturing slightly different aspects of these phenomena, each with its strengths and weaknesses that indicate or contraindicate their use. It can, however, be problematic to compare studies with each other when different assessment

methods have been used. This should be kept in mind when interpreting the present results in a larger scientific context.

Lastly, it should be pointed out that qualitative data analysis, which was used in Studies V and VI, by necessity is a more or less subjective process. This can be interpreted as a limitation, but it also involves strengths. As Auerbach and Silverstein (2003) pointed out it can be argued that all research, both qualitative and quantitative, always includes subjectivity, interpretation and context, and that these are simply more clearly acknowledged in qualitative studies. Acknowledging subjectivity does not, however, mean that “anything goes” (Auerbach & Silverstein, 2003). The results and interpretations of a qualitative study should be justified, transparent, communicable and coherent, so that the reader can understand the identified themes and conclusions, and also understand how they were arrived at (Auerbach & Silverstein, 2003). In the qualitative analyses included in the present thesis, transparency was attained by strictly following the steps of data analysis that are described in the Methods section, and by keeping track of coding throughout the data analysis process. In addition, the coding was reviewed by the co-authors of the Studies V and VI, and only very minor discrepancies were detected. These few discrepancies were resolved and revisions were made after team discussions. Through this process the communicability and coherence of the results were confirmed. It should, however, be kept in mind that the data analysis and conclusions drawn based on it have not been verified by the participants of the interview study.

## **5.8 Theoretical Considerations**

Taken together, the results of the present thesis show that gender and gender identity play a role in the development and expression of body dissatisfaction and disordered eating. When trying to understand what this means, it is of interest to note that previous research also has found associations between gender role orientation and body dissatisfaction as well disordered eating, indicating that masculinity is a protective factor (Blashill, 2011, Lakkis et al., 1999; Hepp, Spindler, & Milos, 2005) while femininity may be a risk factor for these phenomena (Murnen & Smolak, 1997). According to the “femininity hypothesis” stereotypically feminine traits such as passivity, unassertiveness, a need for approval and

dependence lead to poor self-esteem which, as an attempt to improve self-esteem and body image, in turn may lead to dieting (Lakkis et al., 1999).

However, the notion of femininity as a risk factor and masculinity as a protective factor for body dissatisfaction and disordered eating does not appear to be directly applicable to transgender people. The results of the present thesis show that both female-to-male and male-to-female transgender people may have an elevated risk for body image and eating problems. In light of these findings it is of relevance to reflect on the relation between the concepts of gender, gender identity, and gender role orientation.

Gender role orientation has been described as an individual's position in the framework of the masculine and feminine (Hepp et al., 2005). The diagnostic criteria for gender identity disorder include gender role orientation, and define gender identity disorder as a strong and persistent cross-gender identification and discomfort with one's sex, and sense of inappropriateness in the gender role of one's sex (American Psychiatric Association, 2000). However, the present results explicitly show that gender identity does not only involve the gender role, but most definitely also concerns the tangible, physical body. Participants described distinct aversion against the physical parts of their bodies that they associated with their biological gender, especially breasts and genitals. Taken to its extreme, one could even turn this association around and raise the question of whether gender identity disorder possibly could be conceptualized in terms of extreme body dissatisfaction or, more specifically, extreme sexual body dissatisfaction?

From a socio-cultural perspective the actual, physical body is often overlooked when discussing gender, gender roles, and gender identity. However, the results of the present thesis suggest that the intricate associations between body image, body dissatisfaction, disordered eating, gender, and gender identity cannot be completely understood from a solely socio-cultural perspective. Regarding gender differences in body dissatisfaction and disordered eating it is important to note that a socio-cultural and an evolutionary perspective are not mutually exclusive. As discussed above, although body dissatisfaction and disordered eating, as well the gender differences in them, may ultimately possibly best be explained in evolutionary terms, this explanation on the ultimate level of causation is compatible with theories of proximate association. That media images and internalization of beauty ideals

affect how we view our bodies is a reality in the environment we live in here and now, although the ultimate reason for our, especially women's, susceptibility to these messages may be understood in evolutionary terms. It should, however, be noted that these are theoretical considerations, and that neither socio-cultural nor evolutionary hypotheses were directly tested in the present thesis.

On a final note, it should be pointed out that despite the fact that gender is relevant to body dissatisfaction and disordered eating there is vast variation between individuals and overlap between genders. As Shibley Hyde (2005) pointed out, statistically significant gender differences do not justify overinflated conclusions. It should be kept in mind that the gender differences detected here are based on means and standard deviations in a sample of people, and that they not necessarily are relevant to every single individual. The interplay between gender, gender identity, body dissatisfaction, and body image is complex and intricate, and may look different in different persons.

## **5.9 Clinical Implications**

As noted above, the results of the present thesis show that gender and gender identity are of relevance to the development of both body dissatisfaction and disordered eating, and play a role in how they are expressed. This has implications for researchers who study these phenomena, as well as for clinicians working with patients who experience problems related to body image and eating. Body dissatisfaction and disordered eating affect both genders, but may look different for women than for men.

In terms of treatment of body dissatisfaction and disordered eating, it should once more be pointed out that the socio-cultural and the evolutionary perspective are not mutually exclusive. Even though gender differences in body dissatisfaction and disordered eating may be understood in biological terms, and may perhaps ultimately be best explained in biological evolutionary terms, they are expressed and experienced in the environment we live in. It is therefore of relevance to integrate skills that help patients manage their environment and context in the treatment of body dissatisfaction and disordered eating. Such skills may include media literacy training and teaching patients to think critically about media contents.

Regarding age, clinicians should note that body dissatisfaction also affects adults, and that the ways in which body image changes with age may not be straight-forward. It should not be assumed that age and its adherent physical changes simply affect body satisfaction for the better or the worse, but rather, adults may become more satisfied with and accepting of certain aspects of their bodies as they grow older, and more dissatisfied with and critical towards other aspects. It is therefore important to be attentive to the individual's possibly multi-faceted ways of relating to his or her changing body.

One aspect of body image that is all too often overlooked is sexual body image, that is, the perceptions of one's genitals and (for women) breasts. The present results indicate that dissatisfaction with breasts and genitals is common among adults and should not be overlooked when assessing and addressing body image. How people relate to the sexual parts of their bodies may be of relevance to, for example, couples therapy and sexual therapy.

Last but not least, the results of the present thesis are of relevance to clinicians working with transgender people. Although the connection between gender identity conflict and body dissatisfaction may seem self-explanatory, it is worth noting how extensive and profound this dissatisfaction can be, and that it may have destructive psychological consequences such as self-loathing and dissociation, including feelings of estrangement from oneself. In addition, a possibly heightened vulnerability to disordered eating in this population should not be overlooked when assessing and addressing psychiatric and physical health. The good news is that the present results indicate that gender reassignment often has a positive effect on body image and self-image, and also may affect eating behaviors and cognitions positively.

## SUMMARY AND CONCLUSIONS

In the present thesis body image, body dissatisfaction, and disordered eating were examined in relation to gender and gender identity in a population-based sample of Finnish adults of both genders, as well as in a smaller sample of transgender adults. Both quantitative and qualitative methods were used. Below, the key findings of the thesis are briefly outlined as answers to the specific research questions presented in the Introduction.

### **1. How prevalent is body dissatisfaction in a population-based sample of Finnish women and men? (Studies I-II)**

A little more than half of the women (52%) and more than one third of the men (38%) perceived themselves as being less attractive than they would like to be. More than half of the women (59%) and almost one third of the men (30%) reported not liking parts of their bodies at all. In addition, more than one third of the women (38%) and one fifth of the men (21%) perceived themselves as being too fat. Regarding sexual body image, 41% of the women reported wishing they had bigger breasts and 13% wished they had smaller breasts. Of the men 68% reported being satisfied with their genitals, the corresponding percentage for women was 50.

### **2. How prevalent is disordered eating in a population-based sample of Finnish women and men?**

More than half of the women (59%) and approximately one third of the men (31%) reported engaging in dieting behavior, and 45% of the women and 18% of the men reported intense fear of being fat. Of the women, around 27% reported drive for thinness as well as preoccupation with food, for men the corresponding percentages were 9. Self-induced vomiting was reported by 11% of the women and 1% of the men.

### **3. How does age affect body image and disordered eating? (Study I)**

Age does not necessarily simply affect body image either negatively or positively. Instead, the results of the present thesis show that adults may become more satisfied with some aspects of their bodies as they age, and less satisfied with other aspects. Some associations with age were also non-linear, indicating that body satisfaction and dissatisfaction may fluctuate during the adult life span. The present results also indicate that age may partly influence women's and men's body image differently. Regarding disordered eating, women's levels of disordered eating decreased with age, whereas men became more likely to report disordered eating as a function of age.

### **4. Are there gender differences in body dissatisfaction and disordered eating? (Studies I-III)**

Women were generally more dissatisfied with their bodies than men, concerning both general body image and specific aspects of the body. Men showed more dissatisfaction than women only regarding perceiving oneself as being too thin. Women also reported higher levels of disordered eating than men on all questions included, that is, intense fear of being fat, preoccupation with food, self-induced vomiting, dieting, and drive for thinness.

### **5. Are body dissatisfaction and disordered eating associated with gender identity? (Study III)**

Associations between gender identity conflict, body dissatisfaction and disordered eating were detected. When compared with controls matched on age and biological gender, participants with a conflicted gender identity reported higher levels of body dissatisfaction. Biological women with a conflicted gender identity also reported higher levels of disordered eating than controls.



**6. How do transgender people perceive and relate to their bodies? (Study V)**

Transgender participants described both satisfaction and dissatisfaction with their bodies. However, body dissatisfaction was more frequently mentioned and more deeply and intensely described. Not surprisingly, gender-specific body parts evoked more emotions, and sexual body dissatisfaction was common. In particular, female-to-male participants described aversion towards the breasts and chest of their biological gender.

**7. Do transgender people have a heightened risk for body dissatisfaction and disordered eating? (Studies IV-VI)**

Based on the results of this thesis, transgender people experience elevated levels of body dissatisfaction. A majority of the transgender people who were interviewed also described disordered eating such as excessive dieting and drive for thinness, excessive exercise, and bulimic behaviors, indicating that they may also have a heightened risk for disordered eating.

**8. If transgender people have a heightened risk for disordered eating, what is their own understanding of its causes? (Study VI)**

The most frequently mentioned underlying cause was attempting to lose weight in order to suppress characteristics of one's biological gender, such as breasts and hips for female-to-male participants. The second most frequently mentioned cause of disordered eating was attempting to accentuate the characteristics of the desired gender through weight loss, in particular, male-to-female participants described slenderness as an important part of their desired femininity. Causes for disordered eating that were mentioned by single participants included strive for self-control, feelings of being an outsider, not deserving to eat, and struggle for autonomy.

**9. How does gender reassignment affect body image and eating behaviors? (Studies V-IV)**

Transgender participants primarily described both hormone treatment and surgical treatment as having a positive effect on body image. Female-to-male participants described a sense of relief when their periods ceased, and changes such as their beard starting to grow, the body becoming more masculine in shape, the clitoris growing, and the voice changing as changes affecting body image positively. After having their breasts removed, female-to-male participants described feelings of relief and finally having the chest they were always supposed to have. Male-to-female participants described their breasts starting to grow and the body becoming more feminine as changes that improved their body satisfaction. Unwanted weight gain was, however, mentioned by some participants as a negative consequence of hormone treatment. Male-to-female participants also described a sense of relief after having their penis removed through surgery. Gender reassignment was also primarily perceived as alleviating disordered eating.

## REFERENCES

- Abed, R.T. (1998). The sexual competition hypothesis for eating disorders. *British Journal of Medical Psychology*, *71*, 525-547.
- Adams, G., Turner, H., & Bucks, R. (2005). The experience of body dissatisfaction in men. *Body Image*, *2*, 271-283.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders*. (4th ed., text rev.). Published by the American Psychiatric Association. Washington, DC: Author.
- Auerbach, C.F., & Silverstein, L.B. (2003). *Qualitative data: An introduction to coding and analysis*. New York: NYU Press.
- Augustus-Horwath, C.L., & Tylka, T.L. (2009). A test and extension of objectification theory as it predicts disordered eating: Does women's age matter? *Journal of Counseling Psychology*, *56*, 253-265.
- Ault, A., & Brzuzny, S. (2009). Removing gender identity disorder from the diagnostic and statistical manual of mental disorders: A call for action. *Social Work*, *54*, 187-189.
- Bailey, J.M., Dunne, M.P., & Martin, N.G. (2000). Genetic and environmental influences on sexual orientation and its correlates in an Australian twin sample. *Journal of Personality and Social Psychology*, *78*, 524-536.
- Barrett, L., Dunbar, R., & Lycett, J. (2002). Mate choice and sexual selection. In *Human Evolutionary Psychology* (pp. 93-136). New York: Palgrave.
- Bergeron, D., & Tylka, T.L. (2007). Support for the uniqueness of body dissatisfaction from drive for muscularity among men. *Body Image*, *4*, 288-295.
- Blashill, A.J. (2011). Gender roles, eating pathology, and body dissatisfaction in men: A meta-analysis. *Body Image*, *8*, 1-11.
- Braun, V. (2010). The perfect vagina. *Reproductive Health Matters*, *18*, 111-114.
- Braun, V., & Wilkinson, S. (2005). Vagina equals woman? On genitals and gendered identity. *Women's f*, *28*, 509-522.
- Bozkurt, A., Isikli, H., Demir, F., Ozmenler, K.N., Gulcat, Z., Karlidere, T., & Aydin, H. (2006). Body image and personality traits of male-to-female transsexuals and homosexuals. *Social behavior and Personality*, *34*, 927-938.

- Buss, D.M. (1988). The evolution of human intrasexual competition: Tactics of mate attraction. *Journal of Personality and Social Psychology*, 54, 616-628.
- Carney, T., & Louw, J. (2006) Eating disordered behaviors and media exposure. *Social Psychiatry and Psychiatric Epidemiology*, 41, 957-966.
- Cash, T.F. (2004). A “negative body image”. Evaluating epidemiological evidence. In T.F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp.269-286). New York: The Guilford Press.
- Cash, T.F., & Deagle, E. A. (1997). The nature and extent of body-image disturbances in anorexia nervosa and bulimia nervosa: A meta-analysis. *International Journal of Eating Disorders*, 22, 107-125.
- Cash, T.F., & Szymanski, M.L. (1995). The development and validation of the Body-Image Ideals Questionnaire. *Journal of Personality Assessment*, 64, 466–477.
- Clausen, C., Rosenvinge, J.H., Friborg, O., & Rokkedal, K. (2011). Validating the Eating Disorder Inventory-3 (EDI-3): A comparison between 561 female eating disorders patients and 878 females from the general population. *Journal of Psychopathology and Behavioral Assessment*, 33, 101-110.
- Cumella, E.J. (2006). Review of the Eating Disorder Inventory-3. *Journal of Personality Assessment*, 87, 116-117,
- Currin, L., Schmidt, U., Treasure, J., & Jick, H. (2005). Time trends in eating disorder incidence. *The British Journal of Psychiatry*, 186, 132-135.
- Daker-White, G. (2002). Reliable and valid self-report outcome measures in sexual (dys)function: A systematic review. *Archives of Sexual Behavior*, 31, 197-209.
- Davison, T.E., & McCabe, M.P. (2005). Relationships between men’s and women’s body image and their psychological, social, and sexual functioning. *Sex Roles*, 7-8, 463- 475.
- Daniel, S. & Bridges, S.K. (2010). The drive for muscularity in men: Media influences and objectification theory. *Body Image*, 7, 32-38.
- Dean, L., Meyer, I.H., Robinson, K., Sell, R.L., Sember, R., Silenzio, V.M.B., . . . White, J. (2000). Lesbian, gay, bisexual, and transgender health: Findings and concerns. *Journal of the Gay and Lesbian Medical Association*, 4, 102-151.
- De Cuypere, G., Van Hemelrijck, M., Michel, A., Crael, B., Heylens, G., Rubens, R., Hoebeke, P., & Monstrey, S. (2007). *European Psychiatry*, 22, 137-141.
- Demarest, J., & Allen, R. (2000). Body image: Gender, ethnic and age differences. *The Journal of Social Psychology*, 140, 465-472.

- Derogatis, L.R. (1975). *Derogatis Sexual Functioning Inventory (DSFI)*. Towson, MD: Clinical Psychometrics Research, Inc.
- Derogatis, L.R., & Melisaratos, N. (1979). The DSFI: A multidimensional measure of sexual functioning. *Journal of Sex and Marital Therapy*, 5, 244-281
- Dixson, A.F., Halliwell, G., East, R., Wignarajah, P., & Anderson, M.J. (2003). Masculine somatotype and hirsuteness as determinants of sexual attractiveness to women. *Archives of Sexual Behavior*, 32, 29-39.
- Dunson, D.B., Baird, D.D., & Colombo, B. (2004). Increased infertility with age in men and women. *Obstetrics and Gynecology*, 103, 51-56.
- Faer, L.M., Hendriks, A., Abed, R.T., & Figueredo, A.J. (2005). The evolutionary psychology of eating disorders: Female competition for mates or for status? *Psychology and Psychotherapy: Theory, Research and Practice*, 78, 397-417.
- Fairburn, C.G. & Brownell, K.D. (2002). *Eating Disorders and Obesity* (2<sup>nd</sup> Ed). New York: The Guilford Press.
- Faurie, C., Pontier, D., & Raymond, M. (2004). Student athletes claim to have more sexual partners than other students. *Evolution and Human Behavior*, 25, 1-8.
- Fernández-Aranda, F., Peri, J.M., Navarro, V., Badia-Casanovas, A., Turón-Gil, V., & Vallejo-Ruiloba, J (2000). Transsexualism and anorexia nervosa: A case report. *Eating Disorders*, 8, 63-66.
- Fitzsimmons-Craft, E.E. (2011). Social psychological theories of disordered eating in college women: Review and integration. *Clinical Psychology Review*, 31, 1124-1237.
- Frederick, D.A., Peplau, L.A., & Lever, J. (2006). The swimsuit issue: Correlates of body image in a sample of 52,677 heterosexual adults. *Body Image*, 3, 413-419.
- Fredrickson, B.L., & Roberts, T.A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, 21, 173-206.
- Freund, K., Langevin, R., Satterberg, J., & Steiner, B. (1977). Extension of the gender identity scale for males. *Archives of Sexual Behavior*, 6, 515-519.
- Garner, D.M. (2004). *The Eating Disorder Inventory-3: Professional Manual*. Odessa, FL: Psychological Assessment Resources.
- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12, 871-878.
- Grogan, S. (2008). *Body image: Understanding body dissatisfaction in men, women and*

- children*. New York: Routledge.
- Halliwell, E., Dittmar, H., & Orsborn, A. (2007). The effects of exposure to muscular male models among men: Exploring the moderating role of gym use and exercise motivation. *Body Image, 4*, 278-287.
- Hampson, D. (2000, September). *When size matters: my penis/my breasts: The body and sexual self-image*. Paper presented at the Nordic Association for Clinical Sexology's 23rd Annual Sexology Meeting, Helsinki, Finland.
- Harvey, J. A., & Robinson, J.D. (2003). Eating disorders in men: Current considerations. *Journal of Clinical Psychology in Medical Settings, 10*, 297-306.
- Hepp, U., & Milos, G. (2002). Gender identity disorder and eating disorders. *International Journal of Eating Disorders, 32*, 473-478.
- Hepp, U., Milos, G., & Braun-Scharm, H. (2004). Gender identity disorder and anorexia nervosa in male monozygotic twins. *International Journal of Eating Disorders, 35*, 239-243.
- Hepp, U., Spindler, A., & Milos, G. (2005). Eating disorder symptomatology, and gender role orientation. *International Journal of Eating Disorders, 37*, 227-233.
- Heyes, C.J. (2003). Feminist solidarity after queer theory: The case of transgender. *Signs, 28*, 1093-1120.
- Hoek, H.W. & van Hoeken, D. (2003). Review of the prevalence and incidence of eating disorders. *International Journal of Eating Disorders, 34*, 389-396.
- Hudson, J.I., Hiripi, E., Pope, H.G. Jr., & Kessler, R.C. (2007). The prevalence and correlates of eating disorders in the national comorbidity survey replication. *Biological Psychiatry, 61*, 348-358.
- Jonason, P.K. (2007). An evolutionary psychology perspective on sex differences in exercise behaviors and motivations. *Journal of Social Psychology, 147*, 5-14.
- Keel, P.K., Baxter, M.G., Heatherton, T.F., & Joiner, T.E. (2007). A 20-year longitudinal study of body weight, dieting, and eating disorder symptoms. *Journal of Abnormal Psychology, 116*, 422-432.
- Krauss Whitbourne, S., & Skultety, K.M. (2004). Body image development. Adulthood and aging. In T.F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 83-90). New York: The Guilford Press.
- Lakkis, J., Ricciardelli, L.A., & Williams, R.J. (1999). Role of sexual orientation and gender-related traits in disordered eating. *Sex Roles, 41*, 1-16.

- Lee, P.A. (1996). Survey report: Concept of penis size. *Journal of Sex and Marital Therapy*, 22, 131-135.
- Lee, S., & Lee, A.M. (2000). Disordered eating in three communities of China: A comparative study of female high school students in Hong Kong, Shenzhen, and rural Hunan. *International Journal of Eating Disorders*, 27, 317-327.
- Lever, J., Frederick, D.A., & Peplau, L.A. (2006). Does size matter?: Men's and women's views on penis size across the life span. *Psychology of Men and Masculinity*, 7, 129-143.
- Lewinsohn, P.M., Seeley, J.R., Moerk, K.C., & Striegel-Moore, R.H. (2002). Gender differences in eating disorder symptoms in young adults. *International Journal of Eating Disorders*, 32, 426-440.
- Lewis, D.M., & Cachelin, F.M. (2001). Body image, body dissatisfaction, and eating attitudes in midlife and elderly women. *Eating Disorders*, 9, 29-39.
- McCabe, M.P., & Ricciardelli, L.A. (2004). Body image dissatisfaction among males across the lifespan. A review of past literature. *Journal of Psychosomatic Research*, 56, 675-685.
- McCarthy, L.A. (2003). Off that spectrum entirely: A study of female-bodied transgender-identified individuals. University of Massachusetts at Amherst.
- Mehta, S., Abed, R., Figueredo, A.J., Aldridge, S., Balson, H., Meyer, C., & Palmer, R. (2011). Eating disorders and intrasexual competition: Testing an evolutionary hypothesis among young women. *European Psychiatry*, 26, 709.
- Mellor, D., Fuller-Tyszkiewicz, M., McCabe, M.P., & Ricciardelli, L.A. (2010). Body image and self-esteem across age and gender: A short-term longitudinal study. *Sex Roles*, 63, 672-681.
- Muth, J.L., & Cash, T.F. (1997). Body-image attitudes: What difference does gender make? *Journal of Applied Social Psychology*, 27, 1438-1452.
- Morrison, T.G., Bearden, A., Ellis, S.R., & Harriman, R. (2005). Correlates of genital perceptions among Canadian post-secondary students. *Electronic Journal of Human Sexuality*, 8.
- Murnen, S.K., & Smolak, L. (1997). Femininity, masculinity, and disordered eating: A meta-analytic review. *International Journal of Eating Disorders*, 22, 231-242.
- Neighbors, L.A., & Sobal, J. (2007). Prevalence and magnitude of body weight and shape dissatisfaction among university students. *Eating Behaviors*, 8, 429-439.

- Neumark-Sztainer, D., Wall, M., Guo, J., Story, M., Haines, J., & Eisenberg, M. (2006). Obesity, disordered eating, and eating disorders in a longitudinal study of adolescents: How do dieters fare 5 years later? *Journal of the American Dietetic Association*, 103, 559-568.
- Nolen-Hoeksema, S. (2007). *Abnormal psychology* (4<sup>th</sup> ed.). New York: McGraw-Hill.
- Ocker, L. B., Lam, E. T. C., Jensen, B. E., & Zhang, J. J. (2007). Psychometric properties of the Eating Attitudes Test. *Measurement in Physical Education and Exercise Science*, 11, 25-48.
- Orbitello, B., Ciano, R., Corsaro, M., Rocco, P. L., Taboga, C., Tonutti, L., Armellini, M., & Balestrieri, M. (2006). The EAT-26 as screening instrument for clinical nutrition unit attenders. *International Journal of Obesity*, 30, 977-981.
- Peat, C.M., Peyerl, N.L., & Muehlenkamp, J.J. (2008). Body image and eating disorders in older adults: A review. *The Journal of General Psychology*, 135, 343-358.
- Peat, C.M., Peyerl, N.L., Ric Ferraro, F., & Butler, M. (2011). Age and body image in Caucasian men. *Psychology of Men and Masculinity*, 12, 195-200.
- Peixoto Labre, M. (2005). The male body ideal: Perspectives of readers and non-readers of fitness magazines. *Journal of Men's Health and Gender*, 2, 223-229.
- Reinholtz, R.K., & Muehlenhard, C.L. (1995). Genital perceptions and sexual activity in a college population. *Journal of Sex Research*, 32, 155-165.
- Rosen, R., Brown, C., Heiman, J., Leiblum, S., Meston, C., Shabsig, R., et al. (2000). The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex and Marital Therapy*, 26, 191-208.
- Rosen, R.C., Cappalleri, J.C., Smith, M.D, Lipsky, J., & Peña, B.M. (1999). Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *International Journal of Impotence Research*, 11, 319-326.
- Rosen, R., Riley, A., Wagner, G., Osterloh, I., Kirkpatrick, J., & Mishra, A. (1997). The international index of erectile function (IIEF): A multidimensional scale for assessment of erectile dysfunction. *Urology*, 49, 822-830.
- Sarwer, D.B., LaRossa, D., Bartlett, S., Scott, P., Low, D., Bucky, L., & Whitaker, L.A. (2003). Body image concerns of breast augmentation patients. *Plastic and Reconstructive Surgery*, 112, 83-90.



- Shibley Hyde, J. (2005). The gender similarities hypothesis. *American Psychologist*, *60*, 581-592.
- Skrzypek, S., Wehmeier, P.M., & Remschmidt, H. (2001). Body image assessment using body size estimation in recent studies of anorexia nervosa: A brief review. *European Child and Adolescent Psychiatry*, *10*, 215-221.
- Smolak, L., & Murnen, S.K. (2011). Gender, self-objectification and pubic hair removal. *Sex Roles*, *65*, 506-517.
- Stice, E., Schupak-Neurberg, E., Shaw, H.E., & Stein, R.L. (1994). Relation of media exposure on eating disorder symptomatology: An examination of mediating mechanisms. *Journal of Abnormal Psychology*, *103*, 836-840.
- Stice, E., & Shaw, H. E. (2002). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic Research*, *53*, 985-993.
- Striegel-Moore, R.H., & Franko, D.L. (2004). Body image issues among girls and women. In T.F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp.183-191). New York: The Guilford Press.
- Striegel-Moore, R. H., Rosselli, F., Perrin, N., DeBar, L., Wilson, G. T., May, A., & Kraemer, H. C. (2009). Gender difference in the prevalence of eating disorder symptoms. *International Journal of Eating Disorders*, *42*, 471-474.
- Surgenor, L.J., & Fear J. (1998). Eating disorder in a transgender patient: A case report. *International Journal of Eating Disorders*, *24*, 449-452.
- Tantleff-Dunn, S., & Thompson, J.K. (2000). Breast and chest size satisfaction: Relation to overall body image and self-esteem. *Eating Disorders*, *8*, 241-246.
- Thompson, J.K., Coovert, M.D., & Stormer, S.M. (1999). Body image, social comparison, and disordered eating: A covariance structure equation modeling investigation. *International Journal of Eating Disorders*, *26*, 43-51.
- Tiggemann, M. (2004). Body image across the adult lifespan: Stability and change. *Body Image*, *1*, 29-41.
- Tiggemann, M., & Kenyon, S.J. (1998). The hairless body: The removal of body hair in women. *Sex Roles*, *39*, 873-885.
- Tiggemann, M., & Lynch, J.E. (2001). Body image across the life span in adult women: The role of self-objectification. *Developmental Psychology*, *37*, 243-253.
- Tiggemann, M., & Slater, A. (2004). Thin ideals in music television: A source of social

- comparison and body dissatisfaction. *International Journal of Eating Disorders*, 35, 28-58.
- Tylka, T. L., & Sabik, N.J. (2010). Integrating social comparison theory and self-esteem within objectification theory to predict women's disordered eating. *Sex Roles*, 63, 18-31.
- Van der Berg, P., Thompson, J.K., Obremski-Brandon, K., & Covert, M. (2002). The tripartite influence model of body image and disordered eating: A covariance structure modeling investigation testing the mediational role of appearance comparison. *Journal of Psychosomatic Research*, 53, 1007-1020.
- Vocks, S., Stahn, C., Loenser, K., & Legenbauer, T. (2009). Eating and body image disturbances in male-to-female and female-to-male transsexuals. *Archives of Sexual Behavior*, 38, 364-377.
- Weltzin, T.E., Weisensel, N., Franczyk, D., Burnett, K., Klitz, C., & Bean, P. (2005). Eating disorders in men: Update. *Journal of Men's Health and Gender*, 2, 186-193.
- Westmoreland Corson, P. & Andersen A.E. (2004). Body image issues among boys and men. In T.F. Cash & T. Pruzinsky (Eds.), *Body image. A handbook of theory, research, and clinical practice* (pp.192-199). New York: The Guilford Press.
- Winston, A.P., Acharya, S., Chaudhuri, S., & Fellowes, L. (2004). Anorexia nervosa and gender identity disorder in biologic males: A report of two cases. *International Journal of Eating Disorders*, 36, 109-113.
- Witting, K., Santtila, P., Jern, P., Varjonen, M., Wager, I., Höglund, M., Johansson, A., Vikström, N., & Sandnabba, N.K. (2008). Evaluation of the female sexual function index in a population based sample from Finland. *Archives of Sexual Behavior*, 37, 912-924.
- Wolf, N. (1991). *The beauty myth: How images of beauty are used against women*. New York: William Morrow.