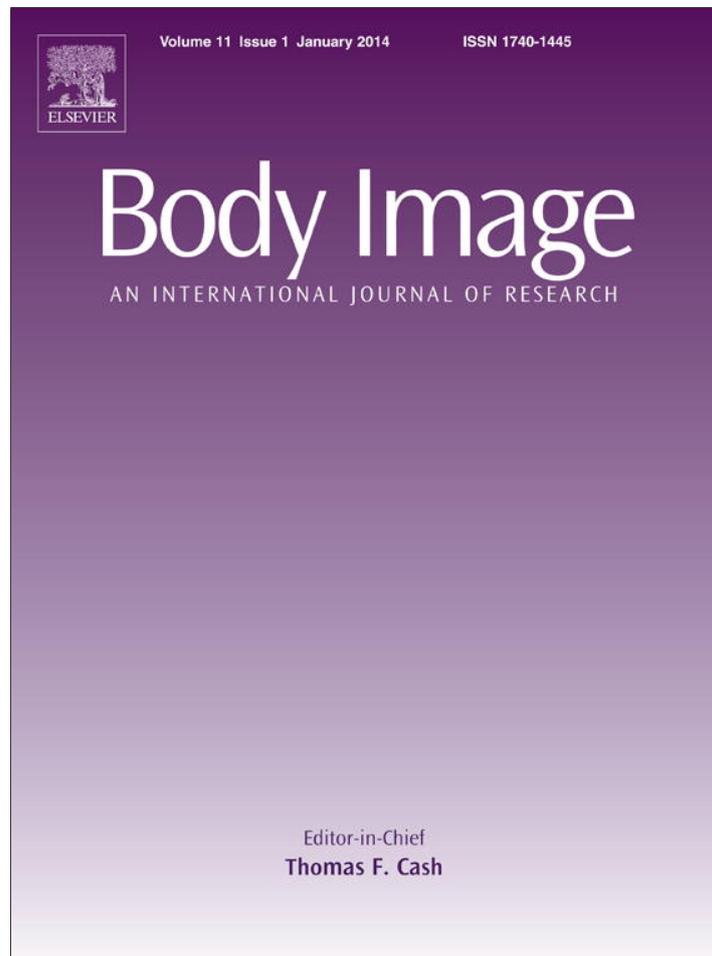


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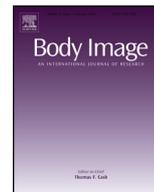
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## A comparison of risk factors for women seeking labiaplasty compared to those not seeking labiaplasty



David Veale<sup>a,\*</sup>, Ertimiss Eshkevari<sup>a</sup>, Nell Ellison<sup>a</sup>, Ana Costa<sup>a</sup>, Dudley Robinson<sup>b</sup>, Angelica Kavouni<sup>c</sup>, Linda Cardozo<sup>b</sup>

<sup>a</sup> The Institute of Psychiatry, King's College London and the South London and Maudsley NHS Foundation Trust, London, UK

<sup>b</sup> Urogynaecology Unit, King's College London and King's College Hospital NHS Foundation Trust, London, UK

<sup>c</sup> Cosmetic Solutions Ltd., London, UK

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### ABSTRACT

Little is known about the factors associated with the desire for labiaplasty. We compared 55 women seeking labiaplasty with 70 women in a comparison group who were not seeking labiaplasty. Measures administered included the Perception of Appearance and Competency Related Teasing Scale, Childhood Trauma Questionnaire, Disgust Scale Revised, and the Genital Appearance Satisfaction scale with open-ended questions about their genitalia. Approximately a third of the labiaplasty group recalled specific negative comments in the past towards their labia, a proportion significantly greater than the three per cent in the comparison group. Participants reporting genital teasing also showed higher Genital Appearance Satisfaction scores than those who were not teased. However, women seeking labiaplasty were, compared to the comparison group, no more likely to have a history of neglect or abuse during childhood. There was no difference between the groups on disgust sensitivity or the perception of being teased in the past about their competence or appearance in general.

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### Introduction

Labiaplasty is a surgical procedure in women that usually consists of reducing the degree of protrusion of the labia minora. Little is known about the psychological or social factors associated with women who seek a labiaplasty. The desire for labiaplasty is becoming increasingly common, with the incidence in the National Health Service (NHS) in the United Kingdom of 1726 in the year 2010–2011 (The Health and Social Care Information Centre, 2012). The number of labiaplasties conducted in the private sector is unknown, but the procedure is often discussed in the media and marketed on the Internet (Liao, Taghinejadi, & Creighton, 2012). Liao, Michala, and Creighton (2010) identified 18 publications covering 937 case reports or series of labiaplasty worldwide up to March 2009. Given that it is an increasingly popular procedure, knowledge of influential factors may assist in the development of a model of motivation for labiaplasty for use in both psychological and surgical settings.

Attitudes towards the genitalia may be relevant for understanding motivation for labiaplasty. For example, Nappi, Liekens, and Brandenburg (2006) examined women's attitudes regarding the

vagina in 9441 women from 13 countries. When asked about childhood experiences, just under 30% of the women overall agreed that they had been told as children that touching their vagina was dirty, nasty or unclean. With regard to appearance, 13% had major concerns and four percent chose negative terms such as troublesome, ugly or unattractive to describe their vagina. Koning, Zeijlmans, Bouman, and van der Lei (2009) reported a survey in the Netherlands of female medical students ( $n = 394$ ) and female patients visiting an obstetrics and gynaecology department or private clinic ( $n = 88$ ). Forty-three percent of the total sample ( $n = 207$ ) reported that the appearance of their labia minora was important and 71% ( $n = 342$ ) thought that their appearance was normal. However, 14% of the total sample thought the appearance of their labia minora was abnormal ( $n = 68$ ). Almost all participants (95%,  $n = 458$ ) knew about the possibility of labiaplasty for a mean of 2.2 years. Most participants (78%,  $n = 376$ ) had heard about labiaplasty through a media source such as television or the Internet. Seven percent ( $n = 34$ ) had considered labiaplasty, and 0.42% ( $n = 2$ ) had undergone the procedure.

Vulnerability factors for women who are concerned about their genital appearance may be similar to those in other body image disorders (for example bulimia nervosa or body dysmorphic disorder) or there may be specific factors for the development of genital dissatisfaction. Risk factors might include being teased or receiving negative comments about physical appearance in general. This has

\* Corresponding author at: Centre for Anxiety Disorders and Trauma, 99 Denmark Hill, London SE5 8AZ, UK. Tel.: +44 020 3228 2101; fax: +44 020 3228 5215.

E-mail address: [david.veale@kcl.ac.uk](mailto:david.veale@kcl.ac.uk) (D. Veale).

been associated with higher levels of body dissatisfaction, depression and lower self-esteem in people with binge eating disorder (Jackson, Grilo, & Masheb, 2000); and body dysmorphic disorder (BDD) (Buhlmann, Cook, Fama, & Wilhelm, 2007).

Another non-specific vulnerability for women with concerns about their genitalia may be disgust sensitivity which is increased in women with dyspareunia or sexual dysfunction (Jong, van Overveld, Shultz, Peters, & Buwalda, 2009); and body image disorders such as anorexia nervosa (Aharoni & Hertz, 2012) or BDD (Neziroglu, Hickey, & McKay, 2010).

A further non-specific factor may be emotional, physical or sexual abuse resulting in body shame (Andrews, 1997; Kearney-Cooke & Ackard, 2000; Romans, Gendall, Martin, & Mullen, 2001). Body shame, from abusive experiences, is often associated with vulnerability to body image problems as well as general psychopathology and its chronicity. Abuse provides not only powerful emotional experiences of how one's body is perceived and treated by the abuser (e.g., as an object of sexual gratification, or a focus for physical harm), but also provides powerful experiences for developing beliefs about one's body (Andrews, 2002).

Women seeking labiaplasty may have an increased aesthetic sensitivity for their appearance and a desire for symmetry. There is some evidence for an increased aesthetic sensitivity in people with BDD (Lambrou, Veale, & Wilson, 2011). An indirect marker for this may be a greater likelihood of training or study in art or design (Veale, Ennis, & Lambrou, 2002).

Lastly, women seeking cosmetic surgery may be more likely to have an emotional disorder. For example in a large prospective study of women in the community, an interest in cosmetic surgery was predicted by a greater increase in symptoms of depression, anxiety, disordered eating and alcohol use compared to those women who were not interested in cosmetic surgery (Javo & Sørlie, 2010a; von Soest, Kvalem, & Wichstrøm, 2012). We have previously reported on the characteristics of women in this study who were seeking labiaplasty and a community group not seeking labiaplasty (Veale, Eshkevari, Ellison, Costa, et al., 2013). All the women had labia measures within the normal range. We found that women seeking labiaplasty did not differ on comparisons on self-report measures of depression or anxiety, which were low in both groups. Ten of the 55 women seeking labiaplasty did however meet diagnostic criteria for BDD, which was largely specific to the genitalia rather than to multiple bodily features. They expressed increased dissatisfaction towards the appearance of their genital area with lower overall sexual satisfaction and a poorer quality of life in terms of body image. This is a similar finding to studies examining other body image problems, such as dissatisfaction with one's breast size in which Didie and Sarwer (2003) compared a group of 25 women seeking breast augmentation with 30 physically similar women who were not interested in augmentation. The breast augmentation group, compared with controls, reported greater dissatisfaction with their breasts and more positive sexual functioning but did not differ on overall body image dissatisfaction. The breast augmentation group was motivated by their own feelings about their breasts rather than any influence from external sources, such as romantic partners or sociocultural representations of beauty.

The aims of this study were therefore to explore the developmental factors that influence the decision to undergo labiaplasty. This study was an exploratory mixed-methods study and compared women seeking labiaplasty with a comparison group of women who were not seeking labiaplasty.

We wanted to explore whether women seeking labiaplasty were more likely than a comparison group to have a greater frequency of:

(a) Physical, emotional or sexual abuse or physical or emotional neglect during childhood

(b) Rape as an adult

(c) Perceived teasing about their appearance in general or specifically about their genitalia

(d) Increased disgust sensitivity

## Method

### Participants

We recruited 125 women who were divided into two groups. In order to take part, all participants were required to be aged between 18 and 60 years of age, and proficient in English (in order to provide consent and complete the questionnaires). Permission was granted by the Joint South London and Maudsley Trust and Institute of Psychiatry NHS Research Ethics Committee (09/H0807/33). Consent to contact participants was obtained by the surgeon. Informed consent was obtained over the telephone.

**Women seeking labiaplasty group.** We recruited 55 women seeking labiaplasty from the following sources: (a) 31 (56.4%) at a private cosmetic clinic, recruited from a total of 73 women who had had labiaplasty and were given written information about the study; (b) 19 (34.5%) at an NHS gynaecology clinic, from a total of 35 women who had a labiaplasty and were given information about the study. (c) 5 (9.1%) via email to a research volunteer database of individuals (Mind Search) at the Institute of Psychiatry, Kings College London, who had not therefore been seen in a clinic setting. The Mind Search database contains details for over 3500 individuals in the local community who have volunteered to participate in psychological or psychiatric research. All those recruited in the labiaplasty group were characterised by either seeking labiaplasty or indicating that they would seek a labiaplasty if they could afford it in the future.

**Comparison group.** We recruited 70 women for the comparison group from the following sources: (a) 31 (44.3%) from a gynaecology clinic in the state sector, where the individuals recruited by the surgeon were having a non-cosmetic gynaecological surgical procedure in the NHS and (b) 39 (55.7%) by an email to a research volunteer database (Mind Search) (described above). The women in the comparison group were asked to participate in a study that aimed to explore women's attitudes towards their external genitalia. They were characterised by not seeking or desiring labiaplasty.

The demographic of the two groups were matched for age, sexual orientation, marital status, whether or not they had children, their ethnicity and education. These and additional characteristics of the two groups are described in Veale, Eshkevari, Ellison, Costa, et al. (2013).

### Procedure

Participants seeking labiaplasty recruited from clinics were invited to participate in the study after the surgeon had assessed them. Consent to contact was obtained by the surgeon. Informed consent from participants was then obtained over the telephone.

For participants in the comparison group and for those seeking labiaplasty who were not seen in a clinical setting, contact details (emails) were provided to us through Mind Search for 225 people. Upon inviting all the volunteers to participate by email, we received 51 responses and 44 people completed the study. Participants from both groups completed the questionnaires listed below, either online or in a pen-and-paper format.

Participants received a £20 high street shopping voucher to thank them for their involvement in the research.

## Materials

Participants completed the following questionnaires:

**The Perception of Appearance and Competency Related Teasing Scale (POTS) (Buhlmann et al., 2007).** The POTS assesses perception of teasing during life. This is an adaptation of Thompson, Cattarin, Fowler, and Fisher's (1995) scale which assessed weight concerns only. It is an 11-item self-report questionnaire that has two components: (1) Appearance-related teasing perceptions (e.g., "People snickered about your appearance when you walked into a room alone") and (2) Competency-related teasing perceptions (e.g., "People teased you because you didn't get a joke"). Each component assesses the frequency of perceived teasing on a Likert scale ranging from 1 ("Never") to 5 ("Very often"). The total score ranges from 6 to 30 for the 6-item appearance-related subscale and from 5 to 25 for the 5-item competency-related subscale. Each component also assesses how much the teasing experience affected the individual using a Likert scale from 1 ("Not upset") to 5 ("Very upset"). Participants only rate the 'distress' items if they have not rated the frequency as "never". The total distress score is divided by the number of items that were endorsed as occurring more frequently than "never". The total score for the distress scale ranges from 1 to 5 for each component (competency or appearance). Cronbach's alpha for the POTS Appearance scale was .87 in the labiaplasty group and .87 in the comparison group. For POTS Competency, Cronbach's alpha was .82 in the labiaplasty group and .70 in the comparison group.

**The Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998).** The CTQ is a 28-item self-report questionnaire that screens for five types of negative childhood experience: Emotional Abuse, Physical Abuse, Sexual Abuse, Emotional Neglect and Physical Neglect. The participant responds to each item in the context of "When I was growing up" using a 5-point Likert scale ranging from 1 ("Never true") to 5 ("Very often true"). Scores are totalled and range from 5 to 25 for each subscale. The higher the score, the higher the level of perceived maltreatment in each subscale domain. The questionnaire has been found to have good test-retest reliability over up to 6 months. Cronbach's alpha for the CTQ total was .78 in the labiaplasty group and .79 in the comparison group.

**Disgust Scale Revised (DS-R) (Olatunji et al., 2007).** The DS-R is based on the original self-report "Disgust Scale" developed by Haidt, McCauley, and Rozin (1994) to provide a measure of individual differences in sensitivity to disgust. The DS-R has fewer items and subscales than the Disgust Scale and a modified response (5-point scale). It consists of 25 items with three subscales: Core disgust, animal-reminder disgust, and contamination disgust. Example items include: "It would bother me tremendously to touch a dead body" and "You see a man with his intestines exposed after an accident". Scores for each subscale and a total score (ranging from 0 to 100) can be calculated, with higher scores indicating increased disgust sensitivity. Cronbach's alpha for the scale is .77 for the labiaplasty group and .85 for the comparison group.

**Genital Appearance Satisfaction (GAS) scale (Bramwell & Morland, 2009; Veale, Eshkevari, Ellison, Cardozo, Robinson, & Kavouni, 2013).** The GAS scale contains 11 statements regarding attitudes towards genital appearance. Each item is scored on a Likert scale between 0 ("Never") and 3 ("Always"). Total scores range from 0 to 33. Sample items include "I feel discomfort around my genitalia when I wear tight clothes"; "I feel that my genital area looks asymmetric or lop-sided"; and "I feel my labia are too large". Higher scores represent greater dissatisfaction with the genitalia. Women in the labiaplasty group had a median of 23.5 and inter-quartile range (IQR) of 19.88–27.63 and the comparison group's median was 6.0 and IQR 3.14–8.88 ( $U=66.5$ ,  $Z=-9.026$ ,  $p<.001$ ,  $d=2.87$ ) (Veale, Eshkevari, Ellison, Costa, et al., 2013). Cronbach's alpha was .78 for the labiaplasty group, and .84 for the comparison group.

**Open-ended questions.** All participants also completed the following open-ended questions. The responses were analysed independently by two raters (DV and EE) and coded independently from the participants' accounts. Any discrepancy was then discussed between the raters.

- Has anyone ever made fun of you because of the appearance of your genitalia? If yes, please describe the situation (i.e., who made the comment, how old you were, the situation, how many times it happened).
- How old were you when you first had sexual intercourse?
- Since the age of 16, have you ever been raped or sexually abused in any way?

Additionally, the following questions were also completed by the labiaplasty group only:

- How did you learn about having a labiaplasty?
- Whose decision was it to have a labiaplasty? (On a scale between 0 and 8 where '0' represented "Only another person"; 2 "Mainly another person"; 4 "Myself and another person equally"; 6 "Mainly myself"; 8 "Myself only").

## Statistical Analysis

Data were analysed using IBM SPSS v20. Given the skewed distribution of most of these variables, as demonstrated by Kolmogorov–Smirnov tests, non-parametric data (e.g., Median & Inter-Quartile Range (IQR) and comparison tests (Chi-Square, Mann–Whitney  $U$  tests)) are reported. The amount of missing data on the standard questionnaires was acceptable with 9 missing data on the DS-R and 7 missing on CTQ and POTS.

## Results

### Childhood Neglect and Trauma

No differences were found between the women seeking labiaplasty and the comparison group for emotional abuse, emotional neglect, physical abuse, physical neglect and sexual abuse, as assessed by the CTQ subscales (Table 1).

### Adult Sexual Behaviour

There was no significant difference between the groups in age at first intercourse (labiaplasty group median 17.0, IQR = 2 and comparison group median 17.0, IQR 2,  $U=1631.0$ ,  $Z=-.1038$ ,  $p=.301$ ). There was no significant difference between the groups in the frequency of reported rape or sexual abuse since the age of 16 (labiaplasty group 7/54, 13%, comparison group 4/70, 6%,  $\chi^2(1)=1.981$ ,  $p=.207$ ).

### Perception of General Teasing

No differences were found between the groups for the frequency or distress associated with general appearance or competency teasing, as assessed by the POTS (Table 2).

### Genitalia Teasing

Of the women seeking labiaplasty 38.6% ( $n=17$  out of 44 responses) reported receiving negative comments or reactions about the appearance of their labia. Only 5.13% ( $n=2$  out of 39 responses) of the comparison group reported that they had negative comments or reactions because of their labia. This difference

**Table 1**  
Childhood Trauma Questionnaire in women seeking labiaplasty and comparison group.

	Labiaplasty group <i>Med (IQR)</i>	Comparison group <i>Med (IQR)</i>	Statistic <i>n = 118</i>	Effect size Cohen's <i>d</i>
Emotional abuse	8.0 (6.0)	7.0 (6.0)	$U = 1526.0, Z = -1.002,$ $p = .32$	$d = -0.19$
Emotional neglect	11.0 (7.0)	9.0 (8.0)	$U = 1497.0, Z = -1.154,$ $p = .25$	$d = -0.21$
Physical abuse	5.0 (2.0)	5.0 (1.0)	$U = 1687.5, Z = -.134, p = .90$	$d = -0.03$
Physical neglect	6.0 (4.0)	6.0 (4.0)	$U = 1553.0, Z = -.876, p = .38$	$d = -0.16$
Sexual abuse	5.0 (1.0)	5.0 (1.0)	$U = 1654.5, Z = -.351, p = .73$	$d = -0.07$

**Table 2**  
Perception of teasing in women seeking labiaplasty and comparison group.

Teasing variable	Labiaplasty group	Comparison group	Statistic	Effect size Cohen's <i>d</i>
Appearance teasing ( <i>frequency</i> )	9.0 (7.0)	7.0 (5.0)	$U = 1508.0, Z = -1.262, p = .21$	$d = -0.23$
Competency teasing ( <i>frequency</i> )	10.0 (8.0)	11.0 (5.0)	$U = 1591.0, Z = -.642, p = .52$	$d = -0.12$
Teasing total score ( <i>frequency</i> )	18.0 (10.5)	19.0 (8.0)	$U = 1698.0, Z = -.236, p = .82$	$d = -0.04$
Appearance teasing distress score	3.72 (1.00)	3.54 (0.98)	$t(86) = -.816, p = .42$	$d = -.18$
Competency teasing distress score	2.80 (1.21)	2.50 (0.89)	$t(92) = -1.375, p = .17$	$d = -.28$
Upset total score	3.17 (1.06)	2.82 (1.00)	$t(100) = -1.718, p = .09$	$d = -.34$

Note: Descriptive statistics are *Mdn (IQR)* for the first three variables and *M (SD)* for the second three variables.

was statistically significant  $\chi^2(1) = 13.15, p < .0001$ . The distress aroused by the negative comments was also rated as significantly greater in the labiaplasty group ( $Mdn = 6.0, IQR = 5$ ) compared to the comparison group ( $Mdn = 0, IQR = 0$ )  $U = 70.50, Z = -4.215, p < .001$ .

The 17 women in the labiaplasty group who received negative comments had significantly higher GAS scores ( $M = 24.93, SD = 4.19$ ) compared to the 27 who reported had not received negative comments ( $M = 21.71, SD = 5.52$ ),  $t(41) = -2.05, p < .05$ . They provided at least one example of hearing negative comments or reactions about their labia. Five participants recalled two examples, and three recalled three examples, making a total of 28 examples. Of these, 26 examples (92.9%) related to the appearance of their own labia and two (7.1%) related to hearing comments about other women's labia. The source of the comment was a sexual partner (usually described as an ex-partner) in 18 (64.3%); a peer (both sexes) in four (14.2%); their mother in three (10.7%); their father sexually abusing the participant in one (3.5%); their small son in one (3.5%); and a health professional in one (3.5%). Three (10.7%) of the comments about their own labia were reported to have been discussed with others. Only one woman in the comparison group provided an example of a negative comment by a sexual partner. Examples of the written response from the labiaplasty group were:

- An ex-boyfriend: It wasn't intended to make fun of me, but my first serious boyfriend at the age of 21 made me aware of my labia being unusual – he said he had never seen one like that before. I think that's where all of this came from.
- A peer: Classmates in communal showers at school at age of 16 when they rumoured I was really a boy and growing a penis.
- A mother: I showed them to my mother as I thought they were weird and she agreed and made an appointment with the doctor immediately.
- A father: My father teased me during episodes of sexual abuse – he would pull them and laugh and bite them.
- Other labia: I have heard boys, that are friends of mine, making fun of another girl who has an enlarged labia.

Reactions that were not critical could nevertheless be rated as distressing (for example "During an intimate moment the partner was quite shocked at what he saw even though they did not mention it but had an obvious reaction").

### Disgust Sensitivity

Those in the labiaplasty group did not have a greater disgust sensitivity as assessed by the DS-R compared with the comparison group, including both the total score as well as each of the three subscales (core disgust, animal-reminder disgust, and contamination disgust) (see Table 3).

### Source of Information about Labiaplasty

Nineteen (43.2%) in the labiaplasty group reported learning about the procedure on television; eleven (25%) on the Internet; six (13.6%) in an article in the media; four (9.1%) through friends or family; one (2.3%) through their gynaecologist; and three (6.8%) were described as 'other'. A total of thirty-six (81.8%) therefore obtained information about the procedure from the media (TV, Internet and articles), and this does not include any secondary source of media information via friends and family or the 'other' category.

### Decision to Have a Labiaplasty

Women seeking labiaplasty completed a Likert-scale item enquiring about whose decision it was for them to have a labiaplasty, with scores ranging from 0 to 8. Thirty-nine (84.8%) endorsed the highest possible score of '8' corresponding with the response that it was "Only their own decision". Two (4.3%) endorsed a score of '7'; four (8.7%) endorsed a score of '6' corresponding with the response that it was "Mainly myself"; and one participant (2.2%) scored '5'.

### Discussion

This is the first study to explore some of the possible psychological and developmental factors in women who are seeking labiaplasty and in a comparison group of women who are not seeking this procedure. A strength of this study is that the two groups were matched for age, sexual orientation, marital status, number of children, ethnicity and higher education and were recruited from both the private and state (NHS) sector.

We found that over a third of the labiaplasty group could recall specific negative comments or reactions about their labia

**Table 3**  
Disgust sensitivity in women seeking labiaplasty and comparison group.

Disgust Scale Revised	Labiaplasty group <i>Med (IQR)</i>	Comparison group <i>Med (IQR)</i>	Statistic <i>n = 116</i>	Effect size Cohen's <i>d</i>
Total score	46.0 (15.0)	49.0 (22.0)	$U = 1506.0, Z = -.843, p = .40$	$d = -0.16$
Core disgust	24.5 (8.0)	26.0 (8.0)	$U = 1407.5, Z = -1.393,$ $p = .17$	$d = -0.26$
Contamination and self-disgust	6.0 (5.00)	7.0 (7.0)	$U = 1642.0, Z = -.086, p = .93$	$d = -0.16$
Animal disgust	15.0 (6.3)	15.0 (10.0)	$U = 1603.5, Z = -.301, p = .77$	$d = -0.06$

compared to 5% in the comparison group. However, women seeking labiaplasty were remarkably similar to the comparison group on risk factors normally found for body image problems such as BDD and eating disorders. As a group, they were no more likely to have a history of emotional, physical, or sexual abuse or neglect during childhood or to have been raped as an adult. They did not have an increase in disgust sensitivity compared to the comparison group. Nor did they have a perception of being teased about their competence or appearance *in general* and their distress about general teasing was no greater than the comparison group. Therefore many of the recognised risk factors for body image disorders were not found in women seeking labiaplasty.

The source of the negative comments about genitalia was predominantly ex-boyfriends and to a lesser extent peers and mothers. Some comments were objectively nasty but others may be a misinterpretation of another partner's behaviour or comment. Such reactions may therefore be important for a psychological intervention such as cognitive restructuring or imagery rescripting when there is an aversive memory associated with a distorted body image (Neziroglu, Khemlani-Patel, & Veale, 2008; Veale & Neziroglu, 2010). It will also be important to determine whether those who can recall such comments have as good an outcome with labiaplasty as those who do not recall such comments.

Of note is that thirty-six women (81.8%) in the labiaplasty group obtained information directly about the procedure from the media (TV, Internet and articles). This is consistent with findings in the Netherlands from the survey by Koning et al. (2009), which found that most women sought information about labiaplasty through the media. Social-cultural factors such as the ease of access to pornography over the Internet and comparisons with porn actresses have been suggested (Crouch, Deans, Michala, Liao, & Creighton, 2011); although only 12% of the women in their sample reported viewing pornography. An increase in television programmes, such as 'Embarrassing Bodies' in the UK, and coverage in women's magazines normalises and legitimises labiaplasty and may fuel the demand. These factors may have contributed to women's lack of awareness of the normal variation in labial topography (Paarlberg & Weijenberg, 2008), which is compounded by a paucity of references to variation on providers' websites (Liao et al., 2012). Equally there are many women who "know" that their genitalia or breast size are in the normal range but are motivated to enhance their appearance. In addition, two thirds of our sample did *not* report being teased or hearing negative comments about their own or other women's genitalia. Future research might investigate whether there are genetic factors in genital dissatisfaction using twin research. For example Monzani et al. (2012) found that genetic factors accounted for approximately 44% of the variance in dysmorphic concerns in twins, with non-shared environmental factors accounting for the remainder.

In the absence of risk factors apart from teasing about the genitalia, social and cultural factors are likely to be important in the desire for labiaplasty. Thus social factors, such as a low educational level, were one of the strongest predictors in a survey (Javo & Sørli, 2010b) of women who sought a range of cosmetic surgery; other predictors were being recommended cosmetic surgery or knowing someone who had had it. Braun (2010), in her review of

cosmetic genital surgery, summarises the situation well: female genital cosmetic surgery may simultaneously help some patients through reducing distress and discomfort, and cause problems to others who were perfectly happy before but now, as a result of publicity and advertising, find they may have another body worry and a particular genital norm to live up to. However there is no literature that has examined the impact of advertising on requests for cosmetic surgery in general or specifically for labiaplasty. Another social factor may be the trend towards shaving of the pubic area so that women's genitalia are now more visible to themselves and others than they were in the past (DeMaria & Berenson, 2013). Lastly, the fashion for tight fitting spandex clothing and slim thighs may make the genitalia more exposed and uncomfortable even when women are dressed.

We also found that women have chosen labiaplasty mainly for themselves rather than to please anyone else. This is consistent with previous research in cosmetic breast augmentation surgery (Cash, Duel, & Perkins, 2002; Didie & Sarwer, 2003).

With respect to the limitations of this study, the sample was opportunistic and relatively small. The design of the study would be improved if the source of the recruitment were more homogenous. The study was powered to detect a moderate effect size between the groups. To detect a small effect size (Cohen's *d* of 0.25); would require a sample of about 250 per group. There may therefore be a subset of this sample that are more distressed and preoccupied by their genitalia and might have risk factors more similar to those of people with BDD. A larger sample of women seeking labiaplasty and who had BDD would help to untangle this question. Nor do we know how representative our sample of women seeking labiaplasty is, as we did not have data on the women seeking labiaplasty who did not agree to participate. The largest effect sizes occurred in relation to negative comments or reactions about participants' genitalia and these were associated with significant distress. Further research is needed to replicate these findings using validated questionnaires and qualitative interviews on teasing about the genitalia and associated imagery. This will help determine the meaning of such comments and the associations that were made at the time. Further research is also warranted to determine whether those comments are believed to have triggered the problem or whether they confirmed a pre-existing anxiety. It is possible that the women in the labiaplasty group were more likely to remember comments and that negative feedback may combine with other factors that were not measured (e.g., high valence on the importance of appearance and social approval). It is also possible that women in the labiaplasty group may be biased in having slightly unusual looking labia, which was brought to their attention by comments of others. These questions are difficult to establish prospectively or without blind ratings of the appearance of the women's genitalia. Further research is required on the aesthetics of female genitalia, the change in cultural and social attitudes by both women and men and whether the trend for labiaplasty is likely to continue. Research is also required to understand the psychological characteristics of men who are seeking cosmetic procedures for the size of their penis and how they may differ from women seeking labiaplasty (Tiggemann, Martins, & Churchett, 2008; Veale et al., 2013).

## Conclusions

The clinical implications of the present study include assessment of women seeking labiaplasty in cosmetic, gynaecological and psychological settings. The assessment and treatment of such women should include the experience of being teased or receiving negative comments about the genitalia, and possibly exploring any experience of sexual abuse when the genitalia may be associated with being dirty or abnormal. This study suggests the possibility of developing a psychological intervention for women who have been teased or abused and eventually comparing such an intervention with labiaplasty in a controlled trial.

It may also be important to develop interventions in schools to prevent body shame. This may include reducing comparisons to porn actresses, who may have had labiaplasty and labia tinting.

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