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Labiaplasty and pornography: a preliminary investigation

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Labiaplasty and pornography: a preliminary investigation

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Discussion about the increasing incidence of labiaplasty has given rise to the widely accepted theory that pornography consumption is the primary driver of this trend. No previous research has attempted to investigate the usefulness of this thesis in predicting genital dissatisfaction or openness to labiaplasty. Our study surveyed women, online and anonymously. There were 1083 participants from 25 countries (majority Australian). We found that women were largely satisfied with the appearance of their vulvas, and generally were not open to labiaplasty. We also found that while pornography was associated with openness to labiaplasty, it was not a predictor of genital satisfaction, casting doubt on a linear framework that positions pornography as the main driver for female genital cosmetic surgery. We concluded that the model is incomplete and that there are additional predictors that must be included in future models.

Keywords: plastic surgery; pornography; female genital cosmetic surgery; labiaplasty; genital satisfaction

Background

There has been increasing interest in both the popular public sphere and feminist academic circles about the reported growing demand for female genital cosmetic surgery, especially labiaplasty. Aesthetic labiaplasty is a cosmetic surgical procedure in which ‘hypertrophic’ (or large) labia minora are excised. Before-and-after images from the clinical literature show that the surgical norm is for the labia minora to be rendered invisible or largely hidden beneath the lips of the labia majora (Pardo et al. 2006; de Alencar Felicio 2007; Lynch, Marulaiah, and Samarakkody 2008; Solanki et al. 2010).

Although labiaplasty procedures constitute a relatively small percentage of overall cosmetic surgical operations, there is evidence that they are increasing. In Australia, Medicare figures on cosmetic labiaplasty¹ show that the number of procedures rebated through the public health system has doubled over the last decade (Department of Human Services 2012). In the United Kingdom, labiaplasty operations performed on the National Health Service almost trebled from 1998 to 2008 (Braun 2010). There are no figures specific to labiaplasty in the United States, but there are data on ‘vaginal rejuvenation’ procedures (Goodman 2011). However, the data are conflicting, with some statistics showing a rise in these surgeries from 2008 to 2009 (American Academy of Cosmetic Surgery 2009, 2010) and others

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showing no growth over the years 2007–2012 (American Society for Aesthetic Plastic Surgery 2007, 2008, 2009, 2010, 2011, 2012). The discrepancy may indicate that in the United States more women are turning to cosmetic, not plastic, surgeons for these procedures. Although there is some evidence for an increase in cosmetic vulvar surgery, it is important to keep these figures in perspective; the US data suggest that they contribute one of the lowest proportions – around 0.2% – of overall cosmetic surgical procedures.

According to accounts given by cosmetic surgeons, women seeking labiaplasty express concerns about aesthetic appearance, fears of abnormality, and problems with physical comfort and sexual function (Bramwell 2002; Bramwell, Morland, and Garden 2007). Michael Goodman (2011) found that in at least two studies (Rouzier et al. 2000; Goodman et al. 2010) the majority of patients cited aesthetic reasons for undergoing labiaplasty, followed by discomfort in clothing, dyspareunia (painful intercourse), and discomfort with exercise. Goodman concluded that patient motivations were primarily aesthetic (2011). The popular, academic and clinical literature suggests that there are at least four main hypothesized socio-cultural influences motivating women to seek surgery: media, including women's magazines; the normalization and increased availability of cosmetic surgery; the increasing frequency of pubic hair removal; and pornography (Braun and Wilkinson 2001; Bramwell 2002; Braun 2005; Green 2005; Lloyd et al. 2005; Bramwell, Morland, and Garden 2007; Tiefer 2008; Koning et al. 2009; Braun and Tiefer 2009; Braun 2010; Schick, Rima, and Calabrese 2011; Rodrigues 2012).

Pornography looms particularly large in these discussions. Anecdotal evidence from surgeons that women are bringing images of vulvas from soft porn magazines into their consultations (Braun 2005; Green 2005; Liao and Creighton 2007) has been highlighted to demonstrate that 'heterosexual pornography informs the model or ideal that [labiaplasty surgery] clients have for their post-operative genitalia' (Green 2005, 174). *Australian Doctor* boldly proclaimed that 'Internet pornography is to blame for a four-fold increase in "designer vagina" surgery during the past decade' (Newton 2012, np). Virginia Braun attributed the youthful, pre-pubescent aesthetic in which the labia minora are hidden from view to 'the "unreal" vulvas displayed in heterosexual male-oriented pornography' (2005, 413). A number of theorists (Green 2005; Braun and Tiefer 2009; Koning et al. 2009; Plowman 2010; Rodrigues 2012) have stated that both pubic hair removal and pornography are two central factors that account for the rise in labiaplasty surgeries in the West. Similarly, Schick, Rima, and Calabrese (2011) suggest that exposure to pornographic images influences women's genital satisfaction. In their study, women rated pre-labiaplasty images of vulvas as less attractive than post-labiaplasty vulvas and those found in *Playboy* centrefolds. From their review of trends in genital detail displayed in *Playboy* centrefolds, the researchers concluded that 'a "tucked-in look" is one aspect of the prototypical genital appearance that is promoted by pornographic imagery and, consequently, sought and desired by women' (Schick, Rima, and Calabrese 2011, 79).

There is strong evidence to suggest that soft porn magazines such as *Playboy* are either deliberately selecting for small inner labia or airbrushing them out; however, it is important to note that this may not be attributable to a heterosexual male preference for hidden labia minora. For instance, under Australian law, soft porn publications are only able to be classified as 'unrestricted' – and therefore able to be

sold to people under the age of 18 – if they are not deemed too explicit according to criteria determined by the Australian Classification Board. As journalist Kirsten Drysdale (2010) points out, many of the models in magazines such as *Picture*, *Playboy* and *Penthouse* have their inner labia airbrushed out not to ‘suit the taste of their readership’, but to conform to Classification Board guidelines allowing ‘discreet genital detail’ but no ‘genital emphasis’. In 2001, *Australian Women’s Forum* wanted to include pictorial representation of before-and-after shots of labial reduction surgery in an investigative article. The Office of Film and Literature Classification forced the magazine to blank out the photographs with the rationale that they displayed ‘too much genital detail’ (Ms Naughty 2012) and were ‘not suitable for six or seven-year-olds to see at newsagents’ (Robotham 2001, np). Similarly, the student organization at the University of Sydney was forced to remove its magazine *Honi Soit* from stands because images of vulvas appeared on the cover (O’Brien 2013), although a previous cover with a picture of a flaccid penis had been allowed to run with no complaint (Ryan et al. 2013). These examples demonstrate that rather than there being a particular visual fantasy that is structurally intrinsic to pornography, longstanding cultural disgust for the labia (Nurka and Jones 2013), enshrined in obscenity law, is influencing soft porn depictions of the female genitals. Additionally, we question the extent to which soft porn print magazines are a source of pornography for women consumers.

There are several problems with what we will refer to here as the popular ‘porn thesis’ that positions heterosexual male-oriented pornography as a direct cause of women’s genital discontents: firstly, it compels soft porn to stand in for all porn through the assumption that pornography presents a unified image of female genitalia which then drives demand for labiaplasty. This implies that ‘pornography’ is a generalized phenomenon, rather than the distinct and heterogeneous set of practices by which it is in fact constituted. As Weil Davis reminds us, there is variety in pornography, which includes ‘a wide variety in the female genitalia on display’ (2002, 12). Secondly, the assumption of linear causality from porn consumption to labial surgery does not consider the possibility that the genital images found in soft porn magazines may in fact be illustrative, rather than generative. Liao and Creighton (2007) note that their patients researched soft pornographic pictures in order to illustrate their desired genital appearance, not that they were regular consumers of such images. Thirdly, according to Smith (2010) the concept of pornographication is problematic because it is too totalizing a narrative to be of use in empirical study. She argues that the use of terms like pornification and pornographication preclude the emergence of new or different research questions (2010, 104). Lastly, the linear argument assumes that factors such as mental health and personality traits are either inconsequential or secondary influences compared with pornography consumption. It fails to consider the complex ways in which body, psyche and culture are entwined. A more nuanced investigation may involve examining individual differences in influences on genital dissatisfaction that are not reducible to heterosexualized gender alone.

In its most basic form, the porn thesis is based on the assumption that women consume pornography and internalize its norms, which then drives genital dissatisfaction and surgical modification of the labia. The aim of this paper is to interrogate these assumptions. As the study is exploratory, we make no specific hypotheses. However, our research questions are as follows: to what extent does pornography

consumption predict genital satisfaction and openness to labiaplasty, and are there candidate variables that could be included in future models? These questions were investigated through the Vulvataik Project. This comprised a qualitative study designed to elicit women's responses to a range of phenomena, including genital satisfaction and attitudes to labiaplasty, through an anonymous online survey.

Methods

Participants

The participants were 1083 women from 25 countries. The majority were Australian (85.7%), with a further 5.1% from the United Kingdom and 5% from the USA. Their mean age was 34 (standard deviation = 10.1), ranging from 18 to 85. Around one-half (52.3%) of the sample were mothers. The majority (82.6%) identified as primarily heterosexual, 6.2% as primarily homosexual, and 9% as bisexual. A further 1.3% identified as celibate and the remaining 0.8% selected 'other'. The sample was highly educated, with 64.8% having an undergraduate degree or above. This is well above the Australian national average of around 30% (Australian Bureau of Statistics 2011).

Materials

This paper presents a quantitative analysis of the seed questions presented in the questionnaire. These are not psychometrically tested instruments, as the primary purpose was to allow participants to position themselves to respond to the long-answer follow-up items. Quantitative items were general in nature to avoid predisposing participants to bias; there were 10 five-point Likert items and 14 long-answer items. The item addressing pornography consumption did not distinguish between types of pornography in order to be consistent with the monolithic presentation of pornography – the 'porn thesis' – that we are investigating. The item asked participants to subjectively rate their pornography consumption over the last five years as 'frequently', 'occasionally', or 'never'. Five years was chosen as a timeframe that might reasonably influence a woman's self-image. It is unlikely, if pornography consumption changes the way women feel about their genitals, that it does so instantaneously. For younger participants, this timeframe may intersect with early sexual experiences, and for older women (in their thirties or forties) it may also cover the time of childbirth. These times may be important as the body is changing, and it is likely that women's perceptions are also changing and they may be more open to outside influence. A range of demographic variables that may influence women's self-perception were also included (education, sexual orientation and parity). These were limited in order to preserve anonymity.

Procedure

The project was approved by the Human Research Ethics Committees of the University of Melbourne and the Australian National University. Participants were recruited via a Facebook page² designed specifically to recruit a community sample. Potential participants were screened, and only those over 18 and who identified as female were invited to participate. The Facebook page was shared by the

investigators within their networks. Visitors to the page were encouraged to ‘Like’ and/ or ‘Share’ the page, as well as to participate in the research. During the data collection phase we made six posts on the Facebook page, reminding people to share our page to help with recruitment. Participants could also email the link to the questionnaire directly to their contacts so it could be shared among those who did not have an account with Facebook. We estimated we would receive around 250–500 responses, and this was well exceeded.

Clicking on the link to the questionnaire opened an information page with a general description of the research, its aims, risks and estimated time for completion; submission of a completed questionnaire constituted implied consent and ensured anonymity. Other measures designed to preserve anonymity included the restriction of demographic data collected to broad categories and the de-identification of responses so that IP address information, time of completion and the referring URL were not recorded. Additionally, submission dates were invalidated prior to submission, ensuring that there could be no alignment of responses with webserver logs. In this way there was no way to identify an individual participant, even if requested.

All data were analyzed using SPSS version 20. Genital satisfaction was measured using three items pertaining to the participants’ satisfaction with the size, shape and colour of their genitals. These items were correlated (R^2 between 0.680 and 0.842, all $p < 0.005$) and were subsequently summed to create a single calculated variable. This calculated variable had a possible range of three to 15, with higher scores indicating higher satisfaction. Cronbach’s alpha was calculated at 0.90 (95% confidence interval [0.89, 0.91]) for the three-item scale, indicating excellent reliability. The resultant distribution was bimodal, with 348 (32.2%) cases scoring nine and 316 (29.2%) cases scoring the maximum 15. Genital satisfaction was significantly lower among those who indicated that they would consider genital cosmetic surgery (mean = 8.97, standard deviation = 3.15) compared with those who would not (mean = 11.37, standard deviation = 2.95), $t(1081) = 7.47$, $p < 0.005$, Cohen’s $d = 0.79$ indicating construct validity for the calculated variable. Women’s openness to genital cosmetic surgery was assessed via a single five-point Likert item: ‘Would you consider cosmetic surgery for your labia (lips) or vagina?’ However, this item was collapsed into three categories (‘Unlikely’, ‘Neither unlikely nor likely’, and ‘Likely’) due to extreme skewness and low cell counts in the ‘likely’ category. Finally, a single case was excluded from the analyses as the age was listed as 553, leaving the final dataset with 1082 cases.

Results

There were a number of skewed results in the survey data: for each of the three original items relating to genital satisfaction, a majority of participants were ‘Neither dissatisfied nor satisfied’ or ‘Very satisfied’ (Table 1). The sample in this survey was not generally open to the idea of genital cosmetic surgery (Figure 1), with only 93 women (8.6%) indicating that they were ‘Somewhat likely’ or ‘Very likely’ to consider the procedure.

We conducted two analyses to investigate the predictive value of pornography and a range of demographic variables on genital satisfaction and openness to labiaplasty in the sample of women. Genital satisfaction was analyzed using an

Table 1. Distribution frequency for genital satisfaction items ($n = 1082$).

Response category	Item responses (%)			
	Size	Shape	Colour	Mean
Very dissatisfied	37 (3.4)	31 (2.9)	17 (1.6)	28 (2.5)
Somewhat dissatisfied	120 (11.1)	72 (6.7)	60 (5.5)	84 (7.8)
Neither dissatisfied nor satisfied	416 (38.4)	448 (41.4)	455 (42.1)	440 (40.7)
Somewhat satisfied	134 (12.4)	136 (12.6)	150 (13.9)	140 (12.9)
Very satisfied	375 (34.7)	395 (36.5)	400 (37.0)	390 (36.0)
Total	1082	1082	1082	

Note: Frequency counts per item and mean per category for the items 'How satisfied are you with the size of your labia (lips) or pubic region?', 'How satisfied are you with the shape of your labia (lips) or pubic region?' and 'How satisfied are you with the colour of your genitals?' Percentages may not add up to 100 due to rounding.

analysis of covariance with age as a covariate ($r = 0.61$, $p < 0.05$) and five fixed factors (sexual orientation, visual inspection of genitals, education, parity and pornography consumption). This procedure was selected due to its robustness to unequal sample sizes (Howell 1997). When controlling for age, only sexual orientation, $F(4,1066) = 3.57$, $p < 0.05$, and visual inspection of the genitals, $F(1,1066) = 11.86$, $p < 0.05$, were significantly related to genital satisfaction. Genital satisfaction was higher in women who identified as primarily homosexual (mean = 11.75, standard error = 0.41), as compared with those who identified as primarily

Figure 1. Openness to labiaplasty ($n = 1082$).

heterosexual (mean = 10.51, standard error = 0.18), when controlling for age. Women who reported close visual inspection of their genitals had higher levels of satisfaction (mean = 11.52, standard error = 0.3) than those who had not (mean = 10.52, standard error = 0.39) when controlling for age. There were no main effects for pornography consumption, education, parity or age. The model was not a good fit for the data, with only 4.2% of the variance in genital satisfaction explained by the model ($R^2 = 0.042$).

Openness to labiaplasty was initially analyzed using logistic regression, however, the model failed to converge due to low cell counts. The data were subsequently analyzed using a series of chi-square tests. Type 1 error was controlled using the Bonferroni adjustment, producing an α value of 0.007 per pair-wise contrast (experiment-wise $\alpha = 0.05$). In order to run this analysis, the continuous variables of age and satisfaction were recoded into categorical variables. Age was coded into three categories (18–29, 30–39, and 40+) to avoid low cell counts with very young or older participants. Similarly, satisfaction was recoded into two categories by deploying a cut-off score, thereby creating a binary variable of caseness. Cases were participants who scored under nine (dissatisfied), and non-cases were participants who scored nine or over indicating that they were either neutral or indicated some level of satisfaction (neutral or satisfied). This cut-off value was chosen because, in order to score eight or below, participants must have indicated some level of dissatisfaction on at least one item. To avoid a large number of very low cell counts, we also recoded education into a binary variable: those with a university education, and those without. Age, sexual orientation, parity and visual inspection of the genitals all had no association with openness to labiaplasty. There were three variables with a significant relationship with openness to labiaplasty: education, genital satisfaction, and pornography consumption. With regard to education (Table 2), women without a university degree were more likely to be undecided with regard to labiaplasty (neither likely nor unlikely to consider the procedure) than those with a degree ($\chi^2(2) = 11.23, p < 0.007$), with small effect (Cramer’s $V = 0.10$). As expected, there was a significant association between genital satisfaction and openness to labiaplasty ($\chi^2(2) = 118.16, p < 0.007$; Fisher’s exact test $p < 0.007$). Low genital satisfaction was associated with higher than expected membership in the ‘Likely’ and ‘Neither’ categories, and lower representation in the ‘Unlikely’ category. Likewise, women in the neutral or positive genital satisfaction category were under-represented in the group who were open to labiaplasty (Table 3). Surprisingly, genital satisfaction only had a moderate effect

Table 2. Contingency table: education and openness to labiaplasty showing standardized residuals ($N = 1082$).

Education	Openness to labiaplasty			Total
	Unlikely	Neither unlikely nor likely	Likely	
No degree	319 (−0.8)	21 (2.2)*	40 (1.3)	380
Degree or above	633 (0.6)	16 (−1.6)	53 (−0.9)	702
Total	952	37	93	1082

Note: Data presented as n (standardized residual): standardized residuals fall on a z -distribution indicating which cells are contributing significantly to the overall χ^2 statistic (Field 2009). * $p < 0.05$.

Table 3. Contingency table: genital satisfaction and openness to labiaplasty showing standardized residuals ($n = 1082$).

Genital satisfaction	Openness to labiaplasty			Total
	Unlikely	Neither unlikely nor likely	Likely	
Dissatisfied	89 (−3.3)***	10 (2.3)*	45 (9.3)***	144
Neutral or satisfied	863 (1.3)	27 (−0.9)	48 (−3.6)***	938
Total	952	37	93	1082

Note: Data presented as n (standardized residual); standardized residuals fall on a z -distribution indicating which cells are contributing significantly to the overall χ^2 statistic (Field 2009). * $p < 0.05$; *** $p < 0.001$.

Table 4. Contingency table: pornography and openness to labiaplasty showing standardized residuals ($n = 1082$).

Pornography consumption	Openness to labiaplasty			Total
	Unlikely	Neither unlikely nor likely	Likely	
Frequently	91 (−1.2)	8 (2.0)*	18 (2.5)*	117
Occasionally	554 (−0.3)	27 (1.1)	58 (0.4)	639
Never	307 (1.2)	2 (−2.7)**	17 (−2.1)*	326
Total	952	37	93	1082

Note: Data presented as n (standardized residual); standardized residuals fall on a z -distribution indicating which cells are contributing significantly to the overall χ^2 statistic (Field 2009). * $p < 0.05$; ** $p < 0.01$.

on openness to labiaplasty (Cramer's $V = 0.33$). Finally, there was also a significant association between pornography consumption in the last five years and openness to labiaplasty ($\chi^2(4) = 26.42$, $p < 0.007$; Fisher's exact test $p < 0.007$), again with small effect (Cramer's $V = 0.11$). The pattern of standardized residuals (Table 4) indicates that those who frequently watched pornography were more likely to be either undecided or open to labiaplasty. Conversely, those who never watched pornography were likely to be under-represented in those categories.

Discussion

Our aim was to assess the veracity of claims about the level of genital dissatisfaction and support for labiaplasty among women and the direct role of pornography in the uptake of labiaplasty. We also assessed the role of socio-demographic variables and found that some of these factors (sexual orientation and education) may play a role in genital satisfaction and openness to labiaplasty. Some results initially appear to support the pornography thesis, but closer examination of the analysis indicates that this is not the case, and further that media reports of widespread genital dissatisfaction and demand for labiaplasty are not supported in this sample.

Pornography consumption in the last five years was not a predictor for genital satisfaction (and inversely, dissatisfaction), but it was associated with openness to labiaplasty. These results do not support a simple linear 'porn thesis' that women watch pornography, compare themselves unfavourably with the images presented therein, and become dissatisfied with the appearance of their vulva and therefore

seek surgery. The fact that we failed to find a relationship between pornography consumption and genital satisfaction/dissatisfaction casts doubt on this simple linear model. Moran and Lee (2014) recently found that exposure to images of modified vulvas changed women's perception of normality. However, in experimental design participants were exposed to a far higher rate of images of modified vulvas than they would typically experience in daily life. It is therefore possible that the lower rates of exposure in our environment may not be enough to change our perceptions. Our apparently conflicting results may be due to the large amount of unexplained variance in the model. This suggests that there are missing variables that could better explain the variance in genital satisfaction. Similarly, while pornography consumption was significantly related to openness to labiaplasty, this was only a small effect. Recent research into psychological predictors of cosmetic surgery in general suggests that mental health indicators such as depression, substance use and self-harm are strong predictors of cosmetic surgery (von Soest, Kvalem, and Wichstrom 2012), as is objectification (Calogero et al. 2010) and personality and self-esteem (Swami et al. 2009). Self-esteem is also a significant predictor of genital satisfaction (Bramwell and Morland 2009), and there are correlates with anxiety, quality of life and Body Dysmorphic Disorder (Veale et al. 2013).

Pornography consumption may work indirectly upon women's desire for labiaplasty. For example, it may be through men's pornography consumption, and subsequent evaluation of women's genitals, that women become dissatisfied, although this was not common in a recent survey of labiaplasty patients (Miklos and Moore 2008). However, a more recent study (Veale et al. 2014) found that negative interpersonal experiences, such as negative comments about the appearance of one's vulva, were associated with participants seeking labiaplasty. While the majority (64%) of these comments came from sexual partners, there were also comments from peers and parents, indicating that while pornography may have some influence, other factors may also be involved. Others have argued that it may also be the 'pornification' of our culture, rather than pornography itself, which is contributing (Grabe and Hyde 2009). However, as suggested earlier, the 'pornification' model lacks diagnostic clarity because it treats all culturally pervasive forms of sexually objectifying imagery (for example, in advertising) as intrinsically pornographic, conflating the images with the institution (English, Hollibaugh, and Rubin 1982). Owing to its analytical muddiness, 'pornification' is not diagnostically useful as a term. The concept of 'objectification' is preferable because it is a testable model (Fredrickson and Roberts 1997). To test the impact of sexual objectification, it would be necessary to include psychological measures of self-objectification in future models. Exposure to such images may be associated with depression (Jones and Griffiths 2015), and may possibly also be associated with poor genital satisfaction.

Our results also indicate some areas of disagreement with reports in popular media. Firstly, only a minority of respondents were dissatisfied with the appearance of their vulvas, in contrast to popular reports that these concerns are common among women (Stark 2010) and stem from pornography or its aesthetic conventions (Conville n.d.; Freeman-Greene 2009; Higginson 2012). Other work investigating genital satisfaction has also generally found high levels of satisfaction among participants, with no decreasing trend over time (Bramwell and Morland 2009; Herbenick et al. 2011; Zielinski et al. 2012).

A second point of inconsistency with popular media is the rate of interest in labiaplasty. While popular reports would lead the reader to the conclusion that labiaplasty is one of the more common forms of cosmetic surgery (Groskopf 2009; Davis 2011; Hope 2012), both the rates of surgery and the ratings from our sample would indicate that while rates may be increasing, it is still a relatively unusual procedure with limited support. However, heavy media coverage of the increase in labiaplasty may serve to normalize the procedure and help drive uptake rates (Liao and Creighton 2007).

Finally, we found that some socio-demographic variables were associated with genital satisfaction and openness to labiaplasty. Firstly, we found a relationship between education and openness to labiaplasty. While this relationship was weak, it was significant. It may be that women who pursue a university degree are less likely to subscribe to cultural norms about femininity (see Peplau, Hill, and Rubin 1993). Secondly, we found that women who identified as primarily homosexual had higher levels of genital satisfaction. It may be that lesbian women are not objectified (by other women) in the same way that heterosexual women are (by men) and therefore do not evaluate their bodies in the same way. We have reservations about this explanation. While lesbian media show a wider array of body types (Gonsoulin 2010), studies have found mixed results with regard to self-objectification (Kozee and Tylka 2006; Hill and Fischer 2008). In a meta-analysis, Morrison, Morrison, and Sager (2004) found a very small difference in body satisfaction between lesbian and heterosexual women, with greater body satisfaction in lesbian women. However, there may be another explanation within the other significant predictor: close genital examination. In our study, women who had closely visually inspected their genitals were more likely to be satisfied with the appearance of their vulvas. This may indicate that knowledge of the variation in genital anatomy, even one's own, may contribute to satisfaction. Chavis, LaFerla, and Niccolini (1989) speculated that the fears of genital abnormality reported by their labiaplasty patients may have been due to underexposure to vulvar variation. Similarly, Laws (1987) speculated that among participants in self-examination groups, alienation from one's own biology was responsible for feelings of revulsion and disgust. If it was the case that increased familiarity with one's own or others' genitals was associated with increased satisfaction, a lesbian population – with presumably higher exposure to vulvar variation than a heterosexual population – would be more satisfied with their own anatomy. This also implies that if women consume pornography with a wide variety of vulvas, it could potentially increase their genital satisfaction. Alternatively, it is possible that women who are uncomfortable with their vulvas are less likely to look closely at them.

The current study has a number of weaknesses that must be taken into account when interpreting these findings. Firstly, the sample was self-selected and given the sensitive nature of the topic under discussion it is possible that women who are satisfied with their vulvas may have been more likely to complete such a questionnaire. Similarly, while education had only a small effect, there was a significant relationship between education and openness to labiaplasty. The sample of women in this study has a very strong bias towards high levels of education and caution is advisable when attempting to generalize these findings across any other populations. Also, given the exploratory nature of the research, the items were primarily seed questions to prompt participants' responses to long-answer questions. Accordingly, the items were worded non-specifically to avoid inducing bias in

responses. The extensive room for lengthy written responses for participants to make their meaning explicit will be the subject of further qualitative analysis. While the lack of psychometrically rigorous instruments is a limitation, this preliminary research suggests directions for future research that could prove to be fruitful lines of enquiry.

To our knowledge, this is the first study to attempt to determine whether the popular 'porn thesis' is a realistic account of the motivations of women undertaking labiaplasty. While there has been some research into the predictors of cosmetic surgery and genital dissatisfaction, there are no published studies to date interrogating the veracity of the hypodermic 'porn thesis' that is promulgated throughout popular media and some academic literature. While this study is by no means comprehensive, it does cast doubt on this simple linear theory and suggests that a more complex model is needed to understand these relationships. It also undermines popular reports of high rates of genital dissatisfaction and widespread support for labiaplasty amongst women. Future research in the area should attempt to reach a fuller understanding of the influences on women who undertake genital cosmetic surgery, such as the influence of their sexual partners, other media, mental health indicators and self-objectification.

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Disclosure statement

The authors declare they have no competing interests or financial benefit a result of this work.

Notes

1. See Medicare Item 35533 <http://www9.health.gov.au/mbs/search.cfm?q=35533&sopt=I>
2. See www.facebook.com/vulvataalk

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