Popular media contribute significantly to public attitudes towards appearance, health, and sexuality, thereby playing an important role in decision making with regard to aesthetic surgery. Crockett et al. demonstrated that exposure to plastic surgery reality television leads to significantly higher patient expectations and easier decision making regarding aesthetic surgery.

The appearance of the labia minora (LM) is gaining increasing media attention in the Netherlands. Attention and discussion are focused on surgical techniques and ethics concerning labia appearance and reduction. To understand patient inquiries and requests for LM reduction, it is important for health care providers to be aware of public perceptions of LM appearance and the possible influence of media attention on this subject. Therefore, we designed a survey to gain insight into female opinion regarding LM appearance and reduction and how media attention contributed to these opinions.

METHODS

Samples
The total sample (N = 482) was composed of 3 groups: female medical students at the University of Groningen (n = 394; average age, 22 ± 3 yrs); women visiting the outpatient Department of Obstetrics and Gynaecology at the Medical Centre Leeuwarden (n = 51; average age, 40 ± 13 yrs); and female patients visiting Heerlen, a private clinic (n = 37; average age, 41 ± 10 yrs).

RESULTS: Most participants (95%) frequently examined their own LM. Almost half of the participants (43%) found the appearance of their LM important and 71% thought that their appearance was normal. Almost all participants (95%) have known about the possibility of LM reduction for the past 2.2 years. Most participants (78%) heard about LM reduction through a media source. Fourteen percent of the total sample found the appearance of their LM to be abnormal, 7% had considered LM reduction, and 0.42% had undergone such a procedure.

CONCLUSIONS: Our survey demonstrates that the appearance of LM is important to women and that almost all women surveyed have heard about LM reduction during the past 2.2 years. Our findings probably reflect the influence of increased media attention on this issue in The Netherlands. (Aesthetic Surg J 2009;29:65–71.)
Demographic data included participant age, education level, marital status, number of biologic children, and history of aesthetic surgery. Participants were questioned about their knowledge of LM reduction, how they gathered this knowledge, whether or not they had undergone LM reduction or considered undergoing LM reduction, acquaintance with other women who have undergone LM reduction, and, if so, how many such women. They were also asked about their opinion concerning normality and size of their own LM, satisfaction with their own LM, the influence of their LM on their sexuality, and their opinion about LM reduction. In addition, questions were posed about their history of functional complaints regarding their LM, comments received about their LM size, or their comments about the size of LM in others.

The data were analyzed with SPSS (version 15.0; SPSS, Inc, Chicago, IL), using nonparametric tests, and $P < .05$ was considered statistically significant.

### RESULTS

The 3 groups differed significantly with respect to age, with group 1 being younger ($P < .001$). Thirteen percent of the participants had a history of previous plastic surgery, and 2 participants (0.42%) had undergone LM reduction (Table). Seven percent of all participants had considered such a procedure (5% in group 1, 12% in group 2, and 16% in group 3) (Figure 1). Of all participants, 3% were familiar with a woman who had undergone LM reduction.

Almost half of the participants (43%) considered the appearance of their own LM important or very important (Figure 2). Fourteen percent of all participants considered the appearance of their LM abnormal, whereas 71% of all participants considered their appearance normal with no significant differences among groups (Figure 3).

Most participants examined their own LM frequently (76%) or often (19%). Most participants never or seldom had physical complaints concerning their LM (Figure 4). However, participants in groups 2 and 3 had more physical complaints compared with participants in group 1 ($P < .001$).

Thirty-eight percent of all participants paid regular attention to the appearance of LM in other women, 7% frequently. Fourteen percent had received either negative or positive remarks concerning the appearance of their LM from partners, and 7% had received remarks from other women.

Most participants (95%) had known about the possibility of LM reduction for the past $2.2 \pm 2.2$ years. There was no significant difference among groups about this issue (group 1, $2.2 \pm 2.1$ yrs; group 2, $2.3 \pm 3.1$ yrs; group 3, $1.8 \pm 1.8$ yrs). Of all participants, 78%...

### Table. Demographic information for the study participants

<table>
<thead>
<tr>
<th>Age, yrs</th>
<th>Group 1$^a$ (n = 394)</th>
<th>Group 2$^b$ (n = 51)</th>
<th>Group 3$^c$ (n = 37)</th>
<th>Total (N = 482)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>22</td>
<td>40</td>
<td>41</td>
<td>25</td>
</tr>
<tr>
<td>SD</td>
<td>3</td>
<td>13</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Education, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>0 (0)</td>
<td>4 (10)</td>
<td>7 (20)</td>
<td>11 (2)</td>
</tr>
<tr>
<td>Intermediate vocational education</td>
<td>0 (0)</td>
<td>23 (50)</td>
<td>15 (40)</td>
<td>38 (7)</td>
</tr>
<tr>
<td>Higher vocational education</td>
<td>0 (0)</td>
<td>11 (20)</td>
<td>15 (40)</td>
<td>26 (5)</td>
</tr>
<tr>
<td>University</td>
<td>394 (100)</td>
<td>11 (20)</td>
<td>0 (0)</td>
<td>405 (86)</td>
</tr>
<tr>
<td>Marital status, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>178 (45)</td>
<td>11 (22)</td>
<td>2 (5)</td>
<td>191 (40)</td>
</tr>
<tr>
<td>Partner</td>
<td>155 (39)</td>
<td>9 (18)</td>
<td>8 (22)</td>
<td>172 (36)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>54 (14)</td>
<td>12 (25)</td>
<td>3 (8)</td>
<td>70 (14)</td>
</tr>
<tr>
<td>Married</td>
<td>7 (2)</td>
<td>15 (31)</td>
<td>23 (62)</td>
<td>45 (9)</td>
</tr>
<tr>
<td>Divorced</td>
<td>0 (0)</td>
<td>2 (4)</td>
<td>1 (3)</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Children, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>390 (98)</td>
<td>23 (43)</td>
<td>5 (13)</td>
<td>416 (86)</td>
</tr>
<tr>
<td>Yes</td>
<td>6 (2)</td>
<td>28 (57)</td>
<td>32 (87)</td>
<td>66 (14)</td>
</tr>
<tr>
<td>Previous plastic surgery</td>
<td>31 (8)</td>
<td>10 (20)</td>
<td>20 (54)</td>
<td>61 (13)</td>
</tr>
</tbody>
</table>

SD = standard deviation.

$^a$Group 1 was comprised of female medical students of the University of Groningen.

$^b$Group 2 was comprised of patients attending the outpatient Department of Obstetrics and Gynaecology, Medical Centre Leeuwarden.

$^c$Group 3 was comprised of female patients at the Private Clinic Heerenveen.
received their information through the media, including television, radio, magazines, the Internet, and newspapers (Figure 5). Participants who used the Internet as an information source for LM reduction considered LM reduction more frequently compared with participants who had other sources of information.

More than half of all participants (61%) disagreed or totally disagreed with the statement that LM reduction is a normal procedure that should or could be considered. The student group reflected a greater number that disagreed with this statement compared with the other 2 groups ($P < .001$; Figure 6).

Figure 1. Percentage of participants (divided into study groups) that would consider labia minora reduction.

Figure 2. Participant rating (divided into study groups) of how important or unimportant the appearance of their labia minora is to them.

Figure 3. Participant opinion regarding the appearance of their labia minora.
When asked about the acceptability of LM reduction, significantly more participants that heard about this procedure through the media found it less acceptable than participants who had other sources of information ($P = .012$; Figure 7). This is most significant for information gleaned from television ($P < .001$; Figure 8). When participants got their information from the Internet, the inverse was true ($P = .017$; Figure 9).
DISCUSSION

This study provides clear insight into female opinion about the appearance of their LM and LM reduction. Most participants (95%) frequently look at their own LM, most participants think the appearance of their LM is normal, and almost half find the appearance to be important. Almost all of the participants knew about the possibility of LM reduction.

It is quite striking that most participants heard about LM reduction in the past 2.2 years. This was similar for the 3 groups despite their significant age difference. Because the media is the main source of information about LM reduction, this period of 2.2 years probably reflects the time at which media attention to this topic began in the Netherlands. Once participants knew about the possibility of LM reduction, this factor might have influenced thoughts about LM appearance.

The growing habit of shaving the genital area and the availability of pornography may influence the ideal image of LM appearance among the general public. Most commercial images are altered with photographic editing software to reduce LM size and asymmetry, conveying, as a consequence, the inaccurate notion that very small, hardly visible, symmetric LM are the norm. Subsequently, women may feel that they deviate from this norm, leading to unnecessary concern and an increase in medical care, all of which is further enforced by increased media attention. Through these mechanisms and influences a new problem is evolving: heightened concern with the appearance of the female genitalia.

Figure 7. Participants using media as a source of information about labia minora reduction find this procedure less acceptable than participants using other information sources.

Figure 8. Participants using television as a source of information about labia minora reduction find this procedure less acceptable than participants using other information sources.
Information may be provided in such a way as to suggest that the “problem” of unattractive genitalia can be “solved” by surgery. Some women may tend to feel that they are somehow to blame for having this “problem” that needs a surgical solution. Moreover, the fact that aesthetic genital surgery has been actively promoted in the media by some medical professionals, along with patient testimonials of positive experiences, has possibly encouraged women to feel that not undergoing labial reduction is a missed “opportunity.”

Fourteen percent of our study population thought that the appearance of their LM was abnormal, 7% had considered LM reduction, and 0.42% had undergone such a procedure. This suggests that there might be a future increase in the demand for aesthetic LM reduction. As we know from daily aesthetic surgical practice, patients may consider an aesthetic procedure for years before consulting a health care provider. In addition, the demand for aesthetic genital surgery in general is likely to increase with increasing prosperity.

As observed in the trend for breast augmentation, the demand for surgery increases with an increase in media attention. In the 1980s and beginning of the 1990s, the use of silicone breast implants was rather controversial; numerous studies about the influence of the media on the opinion and perception of the general public were performed, demonstrating a substantial media influence on the demand for breast augmentation.

CONCLUSIONS

The information gathered through this survey provides new insight into the opinions of women in the Netherlands about LM appearance and reduction. Genital appearance seems to be important to many women, and most women are satisfied with the appearance of their LM (Figure 3). Almost all women had heard about LM reduction, which is probably a reflection of increased media attention in the Netherlands. It is important for health care providers to be aware of this information and the current media message regarding this issue so as to anticipate the demands of patients.

Some survey participants had received comments from partners regarding the appearance of their LM, indicating that men may also profoundly affect female opinion about the appearance of their LM and participate in decision making preceding LM reduction. Further, it would be interesting to explore male attitudes and opinions about the appearance of LM and LM reduction, assessing whether these views are consistent with feminine views and if the media message is as influential with men as with women.

DISCLOSURES

The authors have no disclosures with respect to this article.

REFERENCES


Figure 9. Participants using the Internet as an information source about labia minora reduction are in greater agreement that labia minor reduction is an acceptable procedure than participants who use another information source.


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