



# Comparison of Mental Health and Self-Esteem in Applicants and Non-Applicants for Female Genital Cosmetic Surgery (FGCS): A Case-Control

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## Abstract

**Background:** Today, genital cosmetic surgery (GCS) is rapidly expanding and applicants for this kind of surgery are increasing. The objective of this study was to compare mental disorder and self-esteem among female applicants and non-applicants for GCS.

**Methods:** This is a case-control study and participants included 163 women of reproductive age, 83 of whom applied for GCS (case group) and 80 did not (control group). The participants were selected from the specialized obstetrics and gynecology clinic of Alavi Hospital in Ardabil, Iran using a convenient sampling method. Women were examined for pelvic prolapse in both groups. Rosenberg self-esteem scale was used for measuring self-esteem and the General Health Questionnaire (GHQ-28) was used as a screening tool for mental health.

**Results:** There was no significant difference between the two groups in terms of the mean mental health score ( $P = 0.23$ ). There was a significant difference between the two groups in terms of the physical symptoms ( $P = 0.01$ ) and depression ( $P = 0.003$ ) subdomains of mental disorder. In addition, the women in the case group had significantly lower self-esteem than those in the control group ( $P = 0.001$ ).

**Conclusions:** There is a significant difference in terms of physical symptoms and depression between the two groups. GCS applicant women have lower self-esteem compared to non-applicant women.

**Keywords:** Plastic Surgery, Esthetic Surgery, Female Genitalia, Self-Esteem, General Health

## 1. Background

Today, genital cosmetic surgery (GCS) has become widespread, which is due to the tendency of women to increase sexual pleasure in themselves and their sexual partners (1). In addition, women's awareness of the appearance of their genital area, a significant increase in advertisements for the genital area, ease of access to pornographic films (2), and internet-based advertisements have led women to pursue such surgeries as a way to improve sexual satisfaction (1, 3-5).

The most common processes in the GCS include labiaplasty, clitoral hood reduction, perineoplasty, vaginoplasty, and hymenoplasty (1, 5). Generally, the reasons for GCS from the perspective of patients and doctors include: (1) Functional cases (for women who are not comfortable with sexual activity, exercise, and other activities); (2) appearance and beauty; (3) increased self-esteem (in women who feel that their genital appearance is not natural); (4) increased sexual pleasure, and (5) increased pleasure with

their spouse or partner (1, 6). Meanwhile, two-thirds of men are aware of this kind of surgery, but they do not want their wives to undergo such surgery (1, 5, 7). Some studies have cited vaginal dilation and decreased sensitivity during intercourse as the main reasons for vaginal surgery (1) although sexual pleasure has not been shown to be due to vaginal dilation (7, 8). On the other hand, vaginoplasty, or vaginal tightening, is not simply due to pelvic floor defects (9).

These cosmetic acts are not considered medically necessary unless they are performed for apparent beauty and sexual activity (1). However, the cases of prolapse treatment, hypertrophy or asymmetrical labia, secondary to congenital malformations, distress and chronic discomfort and effects of the elevated androgen levels are considered to be surgical, therapeutic, and medical procedures, but these surgeries have no medical reason in most cases and the effectiveness and safety of these methods have not been proven (4). On the other hand, some doctors believe

that the posterior colporrhaphy, which is performed today for low degrees of prolapse, is unnecessary (10), and so far, no studies have been conducted to support normal vaginal surgery to prevent the prolapse (7).

The most frequent GCS complications include: Long postoperative recovery time, postoperative unpredictable bleeding, lower-than-expected results of cosmetic surgery for patients (1), dyspareunia and decreased vaginal lubrication (1, 7, 11-13), intestinal emptying disorder (12), infection, adhesion and remaining scarring (4), excessive vaginal stenosis, resumption of urinary incontinence (13), damage to the intestine and bladder due to the formation of fistula, and incomplete wound healing (1).

Moreover, new methods of vaginoplasty and FGCS such as using of laser and G-spot enhancement and injection of fat-filled implants and volumizing agents such as hyaluronic acid and silicone that have been introduced in this hot market (1, 4, 14-16) while no precise method has been defined for them (4) and these methods are associated with complications such as embolism (15-17), burn (18), adhesion, and tightening of the vagina (19). However, labiaplasty complications include postoperative infections, hematoma, incomplete wound healing, asymmetry, wound secretion, urinary retention, stretching skin, localized pain, and dyspareunia (18-21).

Women's level of comfort and satisfaction with their genital area is directly related to their sexual pleasure, so it is not surprising that a high percentage of women who want to tighten their vagina evaluate their current performance weak. The main causes of FGCS include low self-esteem (1). Women who request for labiaplasty report a poor quality of life, and they also show the most symptoms of anxiety and depression; they are often concerned about the sexual response of their husbands to the appearance of their genital lobes; at the same time, they usually have less romantic relationship with their husbands (22). Studies that examined the results of GCS, including vaginoplasty and vaginal tightening, mostly focused on their physical and medical aspects, over the course of six months to one year after surgery, while psychological factors have not been considered (1, 4, 7).

Considering the alarming rise in the enticing markets that advertise cosmetic and plastic surgery in the genital area, on the pretext of improving sexual function, along with prolapse correction and incontinence stress (23), and the high demand for such surgeries in Iran despite the lack of accurate statistics (7), the psychological dimension must be considered in the women who desire to do this type of surgery, because even if there is a clear abnormality, the decision for surgery has always an underlying psychological cause (3, 23). Studies show that women who have poor sexual life and low self-esteem request more for

this type of surgery (24). Nevertheless, the surgery is not a definitive solution for low self-esteem. Women's concerns about their genitalia should be considered very seriously, as these concerns can indicate a more profound problem, lack of self-esteem, or even a specific mental disorder such as body dysmorphic disorder (BDD) (25).

Concerns about sexual pleasure may be resolved by a careful evaluation and non-surgical interventions such as counseling. Therefore, when faced with such requests for genital surgery, the physician should investigate the cause of the request, as well as any signs and symptoms that necessitate surgical interventions (4). The accurate recognition of factors affecting women's tendency to perform GCS enables our health care system to evaluate and consult applicants for these types of surgeries more precisely and more effectively, and, based on their mental and physical needs, provide appropriate counseling protocols tailored to the culture and structure of the community to reduce the damage and costs of this hot cosmetic surgery market to the health, social, and mental structure of the community. Psychological counseling should be strongly recommended to all healthy women who are considering FGCS because it may offer them a chance to express undisclosed thoughts and feelings. This may help women to understand that the nature of the problem is not physical but it is psychosocial. Therefore, considering the lack of a study in Iran that examines mental disorder and self-esteem factors in female patients of this type of surgery, this study was conducted to compare mental disorder and self-esteem among female applicants and non-applicants for GCS.

## 2. Methods

### 2.1. Study Design & Participants

The present study is a case-control study conducted between February 2017 and July 2017 in women referring to the specialized obstetrics and gynecology Clinic of Alavi Hospital in Ardabil.

The inclusion criteria included being married, demanding GCS without medical reasons for the case group, and being in the age group of 15 to 49 years. The exclusion criteria included moderate to severe pelvic visceral prolapse, menopause, and taking medications with psychological complications.

The sample size was calculated as 72 in each group based on Sharp et al. study (22) and by taking into account  $m_1 = 1.87$  (mean mental health score),  $m_2 = 1.61$ ,  $sd_1 = 0.74$ ,  $sd_2 = 0.48$ , and considering  $\alpha = 0.05$  and  $\beta = 0.2$ . 80 individuals were recruited for each group considering a 10% probable dropout rate.

## 2.2. Sampling

After approving the project at the research council of Tabriz University of Medical Sciences and obtaining the ethical code (IR.TBZMED.REC.1395.1104) from the Ethics Committee of Tabriz University of Medical Sciences, sampling started. A convenience sampling method was performed at the obstetrics and gynecology clinic of Alavi Hospital in Ardabil city, Iran. All the participants were first informed by the researcher about the goals and procedure of the research, evaluated in terms of basic information and eligibility criteria, and enrolled in the study after their written informed consent was obtained. The participants were enrolled in GCS applicants and non-applicants groups by self-declaration about their desire to get GCS. Participants in the case and control groups were matched for age  $\pm$  2 years. The number of GCS applicants and non-applicants was 83 and 80, respectively. Women of both groups were examined by a research colleague (SF) for moderate and severe pelvic prolapse and women without medical indication for cosmetic surgery were included in the study.

## 2.3. Data Collection Instruments

The data collection instrument included a three-part questionnaire that included information on socio-demographic characteristics, mental health, and self-esteem. The questionnaires were completed through interviews.

Socio-demographic characteristics comprised 15 questions on age, marital status, level of education, occupation, household economic status, place of residence, people who they live with at home, number of pregnancies, number of children, history of infertility, history of chronic disease, history of mental disease, number of sexual partners, and whether the participant decided to undergo GCS or not.

The second questionnaire was the general health questionnaire consisting of 28 questions and 4 subscales, each of which contained seven questions. Of the 28 items in the questionnaire, items 1 through 7 were related to the physical symptoms subscale. Items 8 to 14 examined the symptoms of anxiety and sleep disorders. Items 15 to 21 were to assess the signs of social function and items 21 to 28 examined the symptoms of depression. Each item had four possible responses including not at all, no more than usual, rather more than usual, and much more than usual. The items scored from 0 to 3 for each response with a total possible score ranging from 0 to 84. Lower scores indicated a better mental health status (26). In Iran, the sensitivity and specificity of this questionnaire were 84.7% and 93.8%, respectively, obtained in a study conducted by Noorbala et

al. (27). The Persian version of GHQ-28 was employed as a gold standard measure for the current diagnosis of mental disorder (28).

The third questionnaire was the Rosenberg self-esteem scale, which contains 10 questions answered in the Iranian form as “agree” and “disagree”. The score (1+) was assigned to the agree option chosen for each of the phrases 1 to 5 and the disagree option chosen for each of the phrases 6 to 10; the score (1-) was given to the disagree option chosen for each of the phrases 1 through 5 and the agree option chosen for each of the phrases 6 to 10. The algebra sum of the total scores was calculated; the score above zero represented high self-esteem and a score less than zero indicated low self-esteem (29). In Iran, the validity and reliability of this tool were confirmed in a study by Shapurian et al. with a Cronbach's alpha coefficient of 0.82 (30).

Content validity was used for validating the socio-demographic characteristics questionnaire. This questionnaire was provided to 10 faculty members of the nursing and midwifery school and the necessary corrections were made after collecting their comments. The remaining questionnaires were standard questionnaires. The reliability of the questionnaires was determined by performing the test on 20 people and determining the Cronbach's alpha coefficient (internal consistency). Cronbach's alpha coefficients of 0.778 and 0.721 were respectively obtained for the GHQ-28 and self-esteem questionnaire.

## 2.4. Data Analysis

After completing the data collection process, the data were analyzed using SPSS version 21. Normality of quantitative data was evaluated using skewness and kurtosis. All variables except for the depression subscale of mental health had a normal distribution. Descriptive statistics including frequency, percentage, and mean (SD) were used to describe socio-demographic characteristics, self-esteem, mental health status, and its three sub-domains including physical symptoms, symptoms of anxiety and sleep disorders and social functioning. Median (percentile 25 to percentile 75) was used to describe the depression subscale of mental health. Chi-square, chi-square for trend, independent *t*-test, and Fisher's exact test were used to compare the socio-demographic characteristics of the two groups. Independent *t*-test was used to compare the mean score of overall mental health and its sub-domains except for the depression subscale as well as self-esteem between the two groups. Mann Whitney U test was used to compare the mean score of depression sub-domain between the two groups.

### 3. Results

The sample consisted of 163 people, of whom 83 were applicants and 80 were non-applicants for GCS. The mean (SD = Standard Deviation) age of the participants was 31.6 (6.7). Most participants (96.3%) were married and more than half of the participants (57.6%) had an education level of higher than the diploma. In addition, about two-thirds of them (71.2%) were housewives and most of them (83.8%) lived with their spouses and children. More than two-thirds (73.5%) and more than half of them (58.3%) had enough income and a private home, respectively. Nearly half of them had two pregnancies (41.1%) and two children (44.8%). Over 90% of the participants had no history of infertility, chronic disease, and no history of mental disease. The majority of participants (99.4%) had only one sexual partner. There was no statistically significant difference between the two case and control groups in terms of socio-demographic characteristics (Table 1).

The mean (SD) of the total mental health score in the case and control groups was 56.8 (9.4) and 59.2 (8.1), respectively, with the score range of 0 to 84, showing no statistically significant difference between the groups ( $P = 0.23$ ). In other words, with regard to mental health dimensions, there was no significant difference between the two groups in terms of anxiety ( $P = 0.98$ ) and social functioning disorder ( $P = 0.20$ ). However, there was a significant difference between the two groups in terms of physical symptoms ( $P = 0.01$ ) and depression subdomain ( $P = 0.003$ ) so that the average score of physical symptoms in GCS applicants was higher than that of non-applicants, but the average depression score in the non-applicant group was higher than that of the applicant group. The mean (SD) of total self-esteem score was 4.9 (4.1) in the case group and 7.0 (3.7) in the control group from the score range of -10 to 10. The women in the case group had significantly lower self-esteem compared to the women in the control group ( $P = 0.001$ ) (Table 2).

### 4. Discussion

The findings of the study indicated that the GCS group had lower self-esteem than the non-applicant group. This result is consistent with the findings of other similar studies (31-33). Most of GCS female applicants had low self-esteem, which is directly related to the mental image of the body (33, 34). Those who have low self-esteem have less satisfaction with their lives (35), while the direct relationship between life satisfaction and sexual function has been proven (36). Considering this relationship, the poor sexual functioning can be attributed to low self-esteem by women who undergo GCS.

**Table 2.** Comparison of Mental Health, Its Components, and Self-Esteem Between the Two Groups of Applicant and Non-Applicant for Genital Cosmetic Surgery

Variable	Case (N = 83) <sup>a</sup>	Control (N = 80) <sup>a</sup>	P Value
Mental health's total score	56.8 (9.4)	59.2 (8.1)	0.23 <sup>b</sup>
Physical symptoms	11.2 (2.7)	10.9 (1.9)	0.01 <sup>b</sup>
Anxiety and Insomnia	14.0 (4.3)	15.1 (4.2)	0.98 <sup>b</sup>
Social dysfunction	14 (2.7)	14.1 (3.3)	0.20 <sup>b</sup>
Depression	19 (15 to 21) <sup>c</sup>	20 (18 to 21) <sup>c</sup>	0.003 <sup>d</sup>
Self-esteem	4.9 (4.1)	7 (3.7)	0.001 <sup>b</sup>

<sup>a</sup>Values are presented as Mean (SD).

<sup>b</sup>Independent *t*-test

<sup>c</sup>Median (quartiles 25 to 75)

<sup>d</sup>Mann-Whitney test

There are controversial studies about mental health, some of which indicate that psychiatric problems are more common among GCS population, while other studies show that this group is mentally normal and without difficulty (31). In the present study, the two groups did not differ in terms of general health status. There was no difference between GCS applicants and the control group in terms of the dimensions of social functioning and anxiety. The results of a similar study entitled "Psychological characteristics and motivation of women seeking labiaplasty" by Veale et al. revealed that there was also no significant difference between the GCS applicants and non-applicants in terms of anxiety level among 125 participants, 55 of whom requested for labiaplasty and 70 were GCS non-applicants (37).

In this study, somatic symptoms disorder was higher in the GCS applicant group than in the non-applicant group. So far, there is no study that exclusively examines somatic symptoms disorder in female patients undergoing vulvo-vaginal cosmetic surgery; however, studies showed that women who are looking for cosmetic surgery might have obvious somatic symptoms disorder or develop such disorder in the future (38). The general health questionnaire for assessing somatic symptoms disorder has also been used in other studies (39).

Somatic symptoms disorder refers to a state of mental disorder in which emotional distress is expressed as a physical sign that lacks obvious biological symptoms (40, 41). This disorder puts the patients at risk of unnecessary treatments (42). The treatment of somatic symptoms disorder is a multifactorial process, in which paying attention to psychological, social, and cultural aspects is recommended in the first stage of treatment. Psychologically, cognitive-behavioral therapy approaches, as well as Mindfulness-based cognitive therapy (MBCT), are used to treat this disorder (40). It is recommended to carry out further studies on the relationship between somatic symp-



toms disorder and the tendency for GCS. If there was a direct correlation between the two, psychological interventions should be considered for GCS applicants.

In the present study, there was a significant difference between the applicant and non-applicant groups in terms of mean depression score so that depression of the non-applicant group was evaluated more than that of the applicant group. This conclusion may be due to the high prevalence of depression in women of reproductive age (25%) (43), who were the target group of this study. On the other hand, the occurrence of depression in women depends on several risk factors, such as emotional, physical, and socioeconomic factors (43, 44). Since depression was not the main objective of the study, women in both groups were not evaluated in terms of these risk factors; therefore, it is recommended considering this issue in future studies.

Considering the rapid development of GCS and increasing number of GCS applicants, which have been fueled by the media and due to easy access to pornographic films and images (25, 32, 34), a certain instructional guideline must be provided for this kind of surgery. On the other hand, female applicants must be examined and trained by a team of healthcare professionals, including surgeons, psychologists, sex therapists, and psychotherapists (32). In addition, these women are better to be psychologically consulted in the first step (25) although it is not clear that this consultation will affect the physical symptoms and self-esteem of this group of women or not (37); therefore, considering the lack of such a study so far, this intervention is recommended in subsequent studies.

One of the limitations of this study is the lack of assessment of the risk factors involved in depression of the participants. Using a convenience method for sampling was another limitation of the study. One of the important strengths of this study is that this research is the first study carried out in the field of genital GCS surgery in Iran, and this is a big step towards accepting the fact that as information and communication technology is progressing in the world, sexual and mental tastes of the community also undergo changes. Another important strength is that the mental health aspect has been addressed for the first time among the psychological examinations of the reasons for performing GCS, which can be an introduction to further and extensive research.

#### 4.1. Conclusion

The results of this study showed a difference between the two groups in terms of physical symptoms and depression subdomains. GCS applicant women had lower self-esteem than non-applicant women did. Therefore, it is recommended that service packages, including psychoso-

cial and medical counseling, should be considered for this group of women.

#### Footnotes

**Conflict of Interests:** There was no conflict of interest for all the authors.

**Ethical Considerations:** The ethics code (IR.TBZMED.REC.1395.1104) was obtained from the Ethics Committee of Tabriz University of Medical Sciences.

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**Table 1.** Comparison of Socio-Demographic Characteristics Between Study Groups

Variable	Case (n = 83) <sup>a</sup>	Control (n = 80) <sup>a</sup>	P Value
Age (mean $\pm$ SD)	31.6 $\pm$ 6.8	32.2 $\pm$ 6.2	0.54 <sup>b</sup>
<b>Marital status</b>			1.00 <sup>c</sup>
Single	1 (1.2)	1 (1.3)	
Married	80 (96.4)	77 (96.3)	
Divorced	2 (2.4)	2 (2.4)	
<b>Literacy</b>			0.08 <sup>d</sup>
Illiterate	1 (1.2)	0 (0)	
Primary school	12 (14.5)	3 (3.8)	
Secondary school	19 (22.9)	16 (20)	
High school	7 (8.4)	11 (13.8)	
Diploma	25 (30.1)	22 (27.5)	
University degree	19 (22.9)	28 (35)	
<b>Job status</b>			0.87 <sup>e</sup>
Housekeeper	60 (72.3)	56 (70)	
Working at home	7 (8.4)	7 (7.5)	
Working outside home	16 (19.3)	18 (22.5)	
<b>Economic status</b>			0.27 <sup>d</sup>
Adequate	69 (83.1)	59 (73.8)	
Less than adequate	12 (14.5)	16 (20)	
Inadequate	2 (2.4)	5 (6.3)	
<b>Residence status</b>			0.80 <sup>c</sup>
Personal	48 (57.8)	47 (58.8)	
Rent	24 (28.9)	19 (23.8)	
Wife's parent's home	3 (3.6)	3 (3.8)	
Husband's parent's home	8 (9.6)	11 (13.8)	
<b>Living status</b>			0.89 <sup>c</sup>
With husband and children	67 (80.7)	68 (85)	
Alone	1 (1.2)	0 (0)	
With husband's parent	11 (13.3)	9 (11.3)	
With wife's parent	4 (4.8)	3 (3.8)	
<b>Gravidity status</b>			0.57 <sup>e</sup>
Zero	5 (6)	7 (8.8)	
One	21 (25.3)	23 (28.8)	
Two	33 (39.8)	34 (42.5)	
Three or more	24 (28.9)	16 (20)	
<b>Number of children</b>			0.26 <sup>e</sup>
Zero	7 (8.4)	8 (10)	
One	26 (31.3)	31 (38.8)	
Two	37 (44.6)	36 (45)	

Three or more	13 (15.7)	5 (6.3)	
<b>Infertility</b>			0.36 <sup>c</sup>
Yes	4 (4.8)	7 (8.8)	
No	79 (95.2)	73 (91.3)	
<b>Chronic disease</b>			0.75 <sup>c</sup>
Yes	6 (7.2)	4 (5.0)	
No	77 (92.8)	76 (95.0)	
<b>Mental illness history</b>			0.50 <sup>c</sup>
Yes	2 (2.4)	0	
No	81 (97.6)	80 (100)	
<b>Having only one sexual partner</b>			1.00 <sup>c</sup>
Yes	82 (98.8)	80 (100)	
No	1 (1.2)	0	

<sup>a</sup>Values are presented as No. (%).

<sup>b</sup>Independent t-tests

<sup>c</sup>Fisher's exact test

<sup>d</sup>Chi-square test

<sup>e</sup>Chi-square for trend test