

## Development and Validation Study of the Korean Genital Image Scale; Focused on Korean Married Women

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### Abstract

*The purpose of this study is to develop and validate the genital image scale using 167 open-question questionnaire responded by 170 married women living in Seoul, Busan, Incheon, Daejeon, Jeonju, Gwangju, Mokpo and Jeju. A total of 109 preliminary items were distributed to 410 general women and 200 women who visited the obstetrics clinic. It was revised to 75 items through content validity rating, exploratory factor analysis of the final preliminary questionnaire was conducted. The final 371 participants were analyzed. The Korean version of the Korean Genital Image Scale (K-FGIS) was developed as 37 items. As a result of exploratory factor analysis of the image, the KMO value was .910, which was a general standard of .80 or higher. The reliability a value of the genital image scale was as high as .922. In confirmatory factor analysis, the CFI was .912, the TLI was .901, and the RMSEA was .053. The coefficient of factor was larger than .40 in all items and it was found that a reasonable scale to measure the genital image. In the analysis of convergent validity and criterion validity through correlation analysis with related scales, all of the components and sub-factors of genital image were highly correlated with the Genital Self-image Scale in US ( $r+.22\sim.62, p<.01$ ). In Korea, sexual satisfaction, and marital satisfaction scale also showed a significant positive correlation.*

**Keywords:** Genital image, Married women, Sexual satisfaction, Marital satisfaction

### 1. Introduction

In United States, Female Genital Self Image Scale (FGSIS) was developed using the diagnostic criteria of female sexual dysfunction in DSM-III-R and selected 7 items related to sexual satisfaction.[1] Especially, it was reported that women focused on "image of genital for spouse" rather than "image of genital for oneself", so sexual satisfaction and marital satisfaction were increased.[2] In contrast, despite the fact that researchers[3][4] has shown that there was a lower correlation between genital image and sexual satisfaction, the FGSIS is a appropriate tool for measuring the sexuality-related variables of women.[5] However, the FGSIS developed in the United States did not distinguish between self and spouse when dividing the sub-structure of variables. Additionally, most of the results were obtained through online surveys. Above all, the genital image scale has not been developed in South Korea, and there are no studies related to this field yet.

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In South Korea, only body image is important for sex satisfaction and only sexual satisfaction is related to sexual function after surgery.[6] The results of the sexual satisfaction and marital satisfaction after the sexual dysfunction surgery have been mainly studied.[7] It should not be overlooked that maintaining good relationships with your spouse is also difficult. Therefore, the negative image of genital negatively affects the evaluation of the quality of relationship with the spouse by making the interpretation of sexual and marital satisfaction more biased. In this present study, we intend to reflect the aspect of genital image on the spouse. Also, we would like to incorporate the suggestions of previous studies[8][9] has shown that valid and reliable factors need to be addressed. Therefore, the purpose of this study is to develop the Korean version of FGSIS, which includes both aspects of women's perception of genital self-image and spouse genital image.

## **2. Methods**

### **2.1. Participants and procedures**

**2.1.1 First phase: Open-ended questionnaire:** Married women who responded to open-ended questionnaires on the image of genital were between the ages of 19 and 60, with an average age of 41.97 years. Finally, 170 married women living in Seoul, Busan, Incheon, Daejeon, Jeonju, Gwangju, Mokpo and Jeju city participated in the study. Of these, 2 persons who did not fill in the questionnaire were excluded from the first questionnaire and a total of 168 questionnaires were used for the analysis. The questionnaire was conducted for seven months from December 2012 to July 2013.

**2.1.2 Second phase: Preliminary Questionnaire:** Prior to developing the scale based on the open questionnaire, one doctor of clinical psychology and one doctor of measurement psychology evaluated the content validity of the preliminary question. The items were classified into 1) the consistency with the concept of genital image composition, 2) the degree to which questionnaires were understood by questionnaires, and 3) the correspondence with the concept of genital image of sub-factors. It was excluded that the mean score of items was low or high through the evaluation results. The selected preliminary questionnaire was administered to 410 for general women and 200 for patients who visited the university hospitals and obstetrics and gynecology clinics. A total of 610 copies were distributed. The scale was rated on a 5-point Likert scale (1: not at all, 5: very agreeable). A total of 371 data were used for the analysis except for the missing values that were responded incorrectly.

**2.1.3 Third phase: Analysis of descriptive statistics and exploratory factors:** In the first statistical analysis, 9 items with an average of 2 or less or 4 or more of the 109 preliminary items, and those with a standard deviation of less than .8 and many missing values were excluded. In order to estimate the number of factors in the remaining 75 items, we conducted an exploratory factor analysis except for 25 items with subjective or ambiguous expressions.

**2.1.3 Fourth phase:** Development of Korea-Female Genital Image Scale (K-FGIS) :Finally, 38 items with less than .3 factor load were removed. A total of 37 items were identified and exploratory factor analysis was conducted again. In our study, we constructed six factors based on 6 items except "I am comfortable even when my doctor examines my penis" in the FGIS of Herbenick and Reece [1]. Thereafter, five sub-factors

(genitalia, sex satisfaction, sexual function, sexual partner, no thought) were assumed. However, based on the second questionnaire data, factor analysis was conducted and the final 9 sub-factors were confirmed. It also distinguished genital self image and genital spouse image. The final questionnaire consisted of 9 factors of 5 genital self image (sexual function, sexual anxiety, genital perception, sexual self-esteem, perception of sexual relations) and 4 genital spouse image (sexual motivation, sexual satisfaction, sexual anxiety, perception of sexual relations).

## 2.2. Measure

**2.2.1 Korea-Female Genital Image Scale (K-FGIS):** Korea Female Genital Image Scale (K-FGIS) developed by the present researcher consists of 9 factors and 37 items. The first sub-factors of 'genital self image' consist of sexual function, sexual anxiety, sexual perception, perception of sexual relations, and sexual motivation. In addition, the second sub-factors of 'genital spouse image' consist of sexual motivation, sexual satisfaction, sexual anxiety, and perception of sexual relations. For each question, the scale of 5 points of 'not at all' to 'very agree' was rated, and the higher the score, the more positive the degree of genital image. The Cronbach's  $\alpha$  was .922.

**2.2.2 Female Genital Self Image Scale (FGSIS):** FGSIS is a measure of women's beliefs and feelings about their penis by Herbenick and Reece [1] in the United States. It consists of 7 items and uses 4 points scale. The scale validated the reliability and validity of women across the United States. The total score of the item is between 7 and 28, which means that the higher the score, the more positive the self image of genitalia. The Cronbach's  $\alpha$  was .922

**2.2.3 Derogatis Sexual Function Inventory (DSFI):** The Derogatis Sexual Function Scale (DSFI) was translated into Korean in Chang [6], and 11 items were used to answer the question "Yes or No". In the present study, a Likert 5-point scale was used.[10] The final eleventh question is to fill in the sexual satisfaction in self-report form. It is a 9 point scale from the worst (0) to the best (8). The Cronbach's  $\alpha$  was .85.

**2.2.4 Korean-Marital Satisfaction Inventory (K-MSI):** The Marital Satisfaction Inventory developed by Snyder [11] was modified and standardized by Kwon and Choi [12] to fit Korean culture. The Cronbach's  $\alpha$  was .917.

## 2.3. Data analysis

Exploratory factor analysis, correlation analysis, and validity analysis were performed using SPSS 18.0. Confirmatory factor analysis was performed using M-PLU 6.12.

## 3. Results

### 3.1 Analysis of confirmatory factors

As a result of confirmatory factor analysis on the 37 items of 9 factors, CFI showed good agreement with .902, RMSEA was .056, but TLI was lower than the standard value of .889. As a result of confirmatory factor analysis after modifying the model, CFI was .912, TLI was .901, and RMSEA was .053. Factor coefficients were also greater than .40 for all items. Therefore, the results were found that K-FGIS is a valid scale to measure the genital image. Table 1, Table 2

Table 1. Confirmatory factor analysis and confidence index of the Korea-Female Genital Image Scale

X2	df	TLI	CFI	RMSEA
1360.406	592	.901	.912	.053 [.050, .057]

Table 2. Confirmatory factor analysis and factor of the Korea-Female Genital Image Scale

Variables	Item	Non-standard factor	Standard error	Standard factor	
Genital self image	75	1.000		0.869	
	76	0.948	0.04	0.843	
	Sexual function	80	0.806	0.053	0.642
		83	0.826	0.049	0.688
		71	1.003	0.048	0.797
		73	0.859	0.045	0.749
		24	1.000		0.65
	Sexual anxiety	21	0.896	0.101	0.565
		26	1.135	0.144	0.694
		3	1.000		0.908
	Genital perception	12	0.789	0.049	0.695
		2	0.835	0.05	0.754
		81	1.000		0.603
	Sexual self-esteem	82	1.286	0.123	0.722
		78	1.173	0.12	0.76
46		1.000		0.786	
perception of sexual relations	51	1.06	0.058	0.813	
	43	0.975	0.058	0.757	
	37	1.081	0.058	0.823	
	93	1.000		0.847	
Sexual motivation	90	0.866	0.052	0.713	
	87	0.943	0.045	0.842	
	91	0.861	0.053	0.696	
	86	0.891	0.053	0.739	
	103	1.000		0.814	
Sexual satisfaction	104	1.051	0.048	0.872	
	105	0.955	0.049	0.826	
	97	0.857	0.054	0.707	
Genital image of spouse	23	1.000		0.621	
	Sexual anxiety	20	0.99	0.108	0.598
		16	1.142	0.145	0.64
	107	1.000		0.699	
	perception of sexual relations	108	1.005	0.052	0.696
66		1.076	0.08	0.759	
101		0.939	0.074	0.705	
64		0.779	0.08	0.531	
95		0.699	0.07	0.525	

### 3.2 Analysis of Validity

The whole K-FGIS and the sub-factors showed a high correlation with the FGIS (US), indicating a similar concept ( $r=.22\sim.62$ ,  $p<.01$ ). Specifically, FGIS (US) showed a high correlation between sexual function ( $r=.51$ ,  $p<.01$ ) and genital perception ( $r=.51$ ,  $p<.01$ ).

Sexual self-esteem ( $r=.23$ ,  $p<.01$ ) and perception of sexual relations ( $r=.22$ ,  $p<.01$ ) of the genital image of spouse showed a significant but low correlation. It seems that the sub-factors also reflect the genital image. It was a significant positive correlation between the sub-factors of genital image and sexual satisfaction and marital satisfaction. Specifically, the sexual function ( $r=.65$ ,  $p<.01$ ), perception of sexual relations ( $r=.58$ ,  $p<.01$ ) of genital self-image, sexual satisfaction ( $r=.67$ ,  $p<.01$ ), and perception of sexual relations ( $r=.60$ ,  $p<.01$ ) of genital image of spouse were highly correlated with sexual satisfaction. Perception of sexual relations of spouse ( $r=.59$ ,  $p<.01$ ) showed a high correlation with marital satisfaction. As a result of the covariance validity, the overall and sub-factors of genital image showed a positive correlation with marital satisfaction and sexual satisfaction. Table 3

Table 3. Convergence of Korea-Female Genital Image Scale and coexistence validity

Variables	FGSIS	DSFI	MSS
Total	.615**	.776**	.567**
Self-sexual function	.505**	.664**	.384**
Self-sexual anxiety	.338**	.272**	.275**
Self-genital perception	.513**	.449**	.275**
Self-sexual self-esteem	.226**	.258**	.372**
Self-sexual perception	.449**	.582**	.398**
Sexual motivation of spouse	.469**	.427**	.198**
Sexual satisfaction of spouse	.438**	.668**	.405**
Sexual anxiety of spouse	.448**	.383**	.283**
Sexual perception of spouse	.217**	.596**	.588**

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

#### 4. Conclusions

The significance of the present study was to develop and validate a measurement tool for the genital image which was overlooked in the existing types of sex satisfaction and marital satisfaction. K-FGIS sampled the general women who are married. Among the women who visited the obstetrics clinic, women who did not undergo sexual surgery or sexual organs surgery were selected as subjects. It was intended to equate the requirements for women who had visited the obstetrics and gynecology clinic within one year at the time of developing the FGIS in US. The average difference between the general group and the obstetric patients group was relatively small. Also, the mean difference between the two groups for marital satisfaction was relatively low. Based on these small average differences and large number of cases, it was estimated that there was no difference in the actual level of the marital satisfaction between the two groups. It might be necessary to further examine whether a variety of genital image groups can be generalized as a sample (eg, sexual dysfunction, depression, obsessive compulsive disorder, etc.). In future study it will be possible to examine whether K-FGIS could be validated for other sampling such as couples as well as general women. In addition, cross validation studies are needed to confirm the applicability of the clinical group of patients who underwent surgery for sexual dysfunction or sexual organs (vagina, uterus, pelvis, etc.). This cross validation study is also helpful in examining the possibility of generalization of the results of the statistical analysis of the sub-factors of the genital

image. In other words, if the K-FGIS developed in further study is proved to have high reliability and validity over various samples, it could be expected to play a role in the purpose of screening sexual satisfaction.

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