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Authors

Rowen, Tami S
Gaither, Thomas W
Shindel, Alan W
et al.

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FEMALE SEXUAL FUNCTION

Characteristics of Genital Dissatisfaction Among a Nationally Representative Sample of U.S. Women



Tami S. Rowen, MD, MS,¹ Thomas W. Gaither, MAS,² Alan W. Shindel, MD, MAS,² and Benjamin N. Breyer, MD, MAS²

ABSTRACT

Background: Female genital self-image is an important aspect of psychosocial and sexual health. The Female Genital Self-Image Scale (FGSIS) is a validated instrument that has been used to characterize women’s level of genital dissatisfaction.

Aim: In this report, we assess genital dissatisfaction using the FGSIS in a nationally representative sample of U.S. women.

Methods: We conducted a nationally representative survey of non-institutionalized adults aged 18–65 years residing in the United States. The survey included questions about demographics, sexual behavior, and the FGSIS.

Outcomes: Demographic characteristics were found to significantly correlate to women’s perceived genital dissatisfaction.

Results: In total, 3,372 women completed the survey and 3,143 (93.2%) completed the FGSIS. The mean age was 46 years, and there was broad representation across the United States in terms of age, education, and location. On bivariate analysis, women’s genital dissatisfaction was significantly correlated to their age, race, location, and education. Women who were sexually active were less likely to report genital dissatisfaction than women who were not sexually active (76% vs 62%, respectively, $P < .001$). The frequency of sexual activity was negatively correlated with genital dissatisfaction ($P = .002$). Women who reported genital dissatisfaction were less likely than those who reported satisfaction to engage in receptive vaginal sex (83% vs 88%, respectively, $P = .03$). There were no other significant associations between genital dissatisfaction and types of sexual activity. On multivariate analysis, women were less likely to report genital dissatisfaction if they were older, of black race, had an education level of high school or above, and/or lived in the Northeastern or Midwestern United States. There was no association between genital dissatisfaction and relationship status or gender of sexual partner.

Clinical Translation: Female genital dissatisfaction may be related to age, race, education, and geography.

Conclusions: This is the first nationally representative sample of U.S. women focusing on genital and self-image and dissatisfaction. These data may not apply outside the United States. These data may help providers who provide information for women and manage concerns related to genital self-image. **Rowen TS, Gaither TW, Shindel AW, et al. Characteristics of Genital Dissatisfaction Among a Nationally Representative Sample of U.S. Women. J Sex Med 2018;15:698–704.**

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Key Words: Genitals; Cosmetics; Sexuality

INTRODUCTION

There has been a recent increase in interest and attention to female genital appearance.^{1–4} There are numerous means by

which women change/optimize genital appearance (eg, grooming, piercing, surgery).^{1,5} Interventions to alter genital appearance typically stem from a desire to improve genital appearance, a concept defined as genital self-image.^{5,6} Women’s genital self-image, positive or negative, has been associated with sexual health, sexual behaviors, and sexual satisfaction.^{7,8} Genital self-image may influence health-seeking behaviors in women, such as obtaining routine gynecologic screening.^{8,9} The prevalence of cosmetic gynecology is commensurate with an increasing cultural focus on having the “ideal vulva.”¹⁰

A variety of scales have been developed to assess female genital self-image.^{7,8,11–13} The majority of these scales have been validated

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¹Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, San Francisco, CA, USA;

²Department of Urology, University of California, San Francisco, San Francisco, CA, USA

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by measuring internal consistency and correlation with other validated sexual health metrics, such as the Female Sexual Function Index.^{8,12} The Female Genital Self-Image Scale (FGSIS) is an established and validated scale focused specifically on quantifying genital self-image.^{9,11} This Likert scale includes 7 items that address a woman’s perception of her genitals as well as how comfortable she feels with a partner or a health care provider seeing her genitals.⁸ The FGSIS has been studied and validated in a variety of populations in the United States and other countries.^{7,8,14–16}

Most validated genital self-image scales have been studied in convenience samples, which may not be representative of larger populations.^{7,8,11–13} To our knowledge there are no studies that specifically assess the demographic characteristics that may be associated with poor genital self-image. Self-image in general is highly influenced by sociocultural factors, and thus genital self-image may vary for reasons that have little to do with anatomy.¹² We are not aware of any quantitative metrics that have developed a cut-point consistent with elevated risk for poor genital self-image. Establishing a cut-point for poor genital self-image would help to inform future studies of female sexual well-being. This measure may also improve patient selection and assessment of therapeutic response in the burgeoning field of female genital aesthetic surgery.

In this study we utilize data from a representative, nation-wide survey of women’s genital self-image to explore the relationship among genital self-image, demographic factors, and sexual behaviors. We hypothesized that genital dissatisfaction, which we define

here as poor genital self-image, would be associated with specific demographic characteristics such as age, relationship status, and education level, and differences in sexual activity/behaviors.

METHODS

This is a secondary analysis of a nationally representative survey of non-institutionalized adults aged 18–65 years residing in the United States. The goal of the original study was to examine the prevalence of injuries and infections that occur as a result of personal grooming and associated risk factors. The FGSIS, demographic, and sexual behavior factors germane to the current analysis were included in this survey. The survey was conducted with the GfK Group (formerly Knowledge Networks; East Hanover, NJ, USA). Details regarding GfK study methods have been reported previously.^{17,18} The committee on human research at our institution approved the study. GfK consented all participants prior to the beginning of the survey.

Panel members were randomly recruited using address-based sampling methods. GfK samples addresses from the U.S. Postal Service Delivery Sequence File. Address-based sampling estimates 97% of households can be reached and contacted through household mail. GfK uses statistical weighted adjustments to correct for known deviations in their sampling design. Additional survey errors, such as non-coverage and non-response, are also corrected for using panel demographic post-stratification weights.

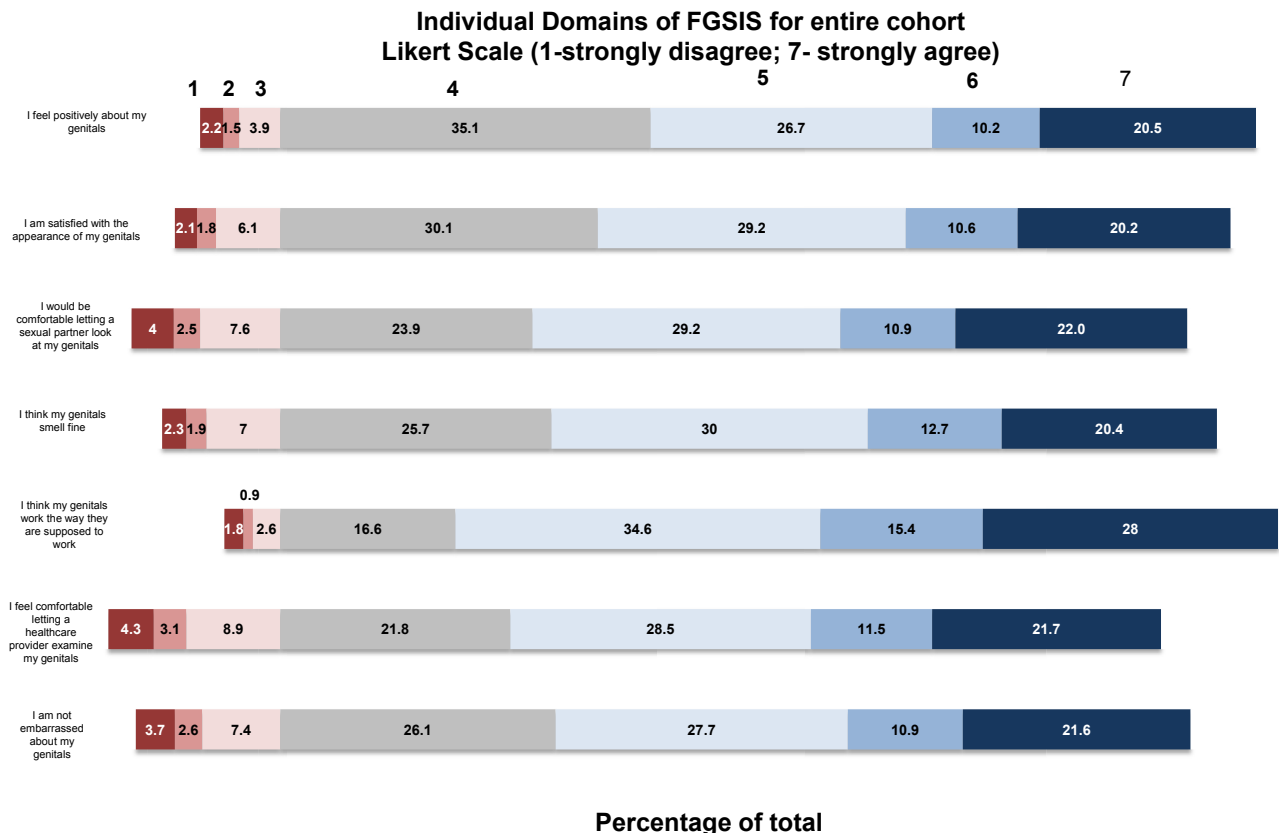


Figure 1. Individual domains of Female Genital Self-Image Scale (FGSIS) for entire cohort Likert scale. Figure 1 is available online at www.jsm.jsexmed.org.

Once panel members are recruited for participation, they receive notification via e-mail to participate in a study sample. Panel members may also check their personal online member page to participate in surveys. The topic of the survey is given to participants. Participants do not see any questions from a particular survey until they accept the survey. The topic of the current study given to participants was “personal grooming injuries.” GfK provides a laptop or netbook computer and free Internet service to all panel members without access to the Internet. For the current study, panel members received 1,000 points for completing the survey, which was the cash equivalent of US\$1.

In addition to standard measures taken by GfK to enhance survey cooperation, e-mail reminders were sent to non-responders on day 3 of the field period. A pre-test survey was completed in December 2013 to ensure participants understood the questions. The final survey was conducted in January 2013 in which 7,580 participants completed the survey out of 14,409 sampled via mail (completion rate of 52.5%).

Participants answered the 7-item Likert scale female genital self-image survey in our survey instrument. Genital satisfaction was measured on a 7-point Likert scale for each question, with 1 being the lowest and 7 being the highest score (range 7–49). We used the Cronbach α as a measure of internal consistency.¹⁹

We collected the following demographic data: age, race, relationship status, education, geographic region, and sexual partner preferences (male, female, both, or not sexually active). We also collected sexual characteristics including whether or not participants were sexually active, frequency of sexual activity, and prior experience with specific sexual behaviors.

Data analysis was performed using the survey function within Stata 13.1 (Stata, StataCorp, College Station, TX) to adjust and weight the observations for the complex sampling design. We used Student *t* tests and χ^2 tests for all continuous and categorical variables, respectively. All *P* values (2-sided) less than .05 were considered statistically significant. All missing or incomplete data were excluded from the analyses.

Currently, no single cut-off score has been identified to identify individuals with genital dissatisfaction. We inspected the distribution of total scores and found a natural cut-off at the 10th percentile (Figure 1). This corresponds to a total score of 26, which is just under the score reported if a participant selected “neutral” for all categories (score of 28). This approximates the distribution of FGSIS scores in women with dyspareunia.²⁰ Any score 26 or lower was classified as “dissatisfied.” We performed bivariate and multivariate logistic regression to determine which demographic factors significantly influenced genital satisfaction.

RESULTS

The survey was completed by 3,372 self-identified women; of these, 3,143 (93.2%) completed the FGSIS. Table 1 shows the demographics of the cohort who completed the survey. There was broad representation from across the United States. The

Table 1. Demographic characteristics of women who completed the Female Genital Self-Image Scale in our representative sample

	Completed, n = 3,143
Age, y, mean (SD)	46 (13)
Race	
n (% of total)	
White	2,146 (68)
Black	398 (13)
Other, non-Hispanic	106 (3)
Hispanic/Latino	369 (12)
Mixed races	124 (4)
Sexual partner	
n (% of total)	
Men	2,220 (71)
Women	72 (2)
Both	40 (1)
Not sexually active	787 (25)
Marital status	
n (% of total)	
Married	1,622 (52)
Widowed	110 (4)
Divorced	402 (13)
Separated	68 (2)
Never married	669 (21)
Living with partner	272 (9)
Education	
n (% of total)	
Less than high school	248 (8)
High school	853 (27)
Some college	957 (30)
Bachelor's degree or higher	1,085 (35)
Location	
n (% of total)	
Northeast	586 (19)
Midwest	775 (25)
South West	1,110 (35)
West	672 (21)

ethnic/racial makeup was also representative of the United States, with 68% identifying as white, 13% as black, 12% as Latina, and 7% as other or mixed races.

Figure 1 shows the score distribution of the FGSIS. The internal consistency and reliability of the scale was high; Cronbach α was 0.93. The median score was 34, interquartile range was 29–41.

On bivariate analysis, we found that genital dissatisfaction was associated with younger age, when categorized into 10-year age groups ($P = .004$), race ($P = .001$), gender of sexual partner ($P < .001$), education level ($P < .001$), and location within the United States ($P = .001$) (Table 2). Relationship status also appeared to be highly correlated with genital satisfaction ($P = .05$). The proportion of respondents who were sexually active was 62% for women with genital dissatisfaction compared to 76% for women without genital dissatisfaction ($P < .001$)

Table 2. Demographic characteristic comparison of women who are satisfied and dissatisfied on the Female Genital Self-Image Scale, n = 3,143

		Dissatisfied, n = 317	Satisfied, n = 2,826	P value
Age, y, mean (SD)		43 (14)	46 (13)	.004
Race				.001
n (% of total)	White	213 (67)	1,933 (68)	
	Black	23 (7)	375 (13)	
	Other, non-Hispanic	12 (4)	94 (3)	
	Hispanic/Latino	55 (17)	314 (11)	
	Mixed races	14 (4)	110 (4)	
Sexual partner				
n (% of total)	Men	189 (60)	2,031 (72)	<.001
	Women	8 (3)	64 (2)	
	Both	1 (0.3)	39 (1)	
	Not sexually active	118 (37)	669 (24)	
Marital status				.05
n (% of total)	Married	140 (44)	1,482 (52)	
	Widowed	13 (4)	97 (3)	
	Divorced	45 (14)	357 (13)	
	Separated	4 (1)	64 (2)	
	Never married	84 (27)	585 (21)	
	Living with partner	31 (10)	241 (9)	
Education				<.001
n (% of total)	Less than high school	42 (13)	206 (7)	
	High school	90 (28)	763 (27)	
	Some college	108 (34)	849 (30)	
	Bachelor's degree or higher	88 (24)	1,008 (36)	
Location				.001
n (% of total)	Northeast	39 (12)	547 (19)	
	Midwest	70 (22)	705 (25)	
	South West	121 (38)	989 (35)	
	West	87 (27)	585 (21)	

(Table 3). Sexual activity was also less frequent in women who reported genital dissatisfaction ($P = .002$). The proportion of patients who reported receptive vaginal intercourse in the last 12 months was 83% for women with genital dissatisfaction compared to 88% for women without genital dissatisfaction ($P = .03$). The prevalence of genital dissatisfaction did not significantly differ as a factor of other sexual activities queried.

On multivariable analysis, we found that genital dissatisfaction was associated with younger age (odds ratio [OR] for dissatisfaction 0.86, 95% CI 0.78–0.95) for each 10-year age increase (Table 4). Black women were significantly less likely to report genital dissatisfaction compared to white women (OR 0.45, 95% CI 0.53–1.92, $P = .001$). Women who were not sexually active were more likely to report genital dissatisfaction compared to partnered women (OR 2.13, 95% CI 1.57–2.97, $P < .001$) but there was no significant relationship between partner gender and genital dissatisfaction. Women with a high school or higher education reported lower rates of genital dissatisfaction compared to less educated women. We did not find a significant association between relationship status and genital dissatisfaction on multivariable analysis.

Figure 1 shows the distribution of scores by domain. Women were most likely to strongly agree that their genitals function as they are supposed to and were least likely to strongly agree that they are satisfied their genital appearance. However, there was no statistically significant difference in specific domain analysis of the FGSIS.

DISCUSSION

In our large sample of women in the United States, we found that genital dissatisfaction was significantly related to specific demographic characteristics, namely age, race, education level, and sexual activity. Furthermore, we determined that women who reported dissatisfaction with their genital appearance were less likely to be sexually active, which further validates the cut-off chosen. Among the respondents who were sexually active, the frequency of sexual activity was lower in women who reported genital dissatisfaction.

Prior research has explored the role of genital self-image and sexual behaviors. Herbenick and Reece⁸ found that higher scores on the FGSIS were associated with higher scores on the Female

Table 3. Comparing sexual behaviors between women with genital dissatisfaction vs women with genital satisfaction

		Genital dissatisfaction, total average score <26, n = 317	Genital satisfaction, total average score ≥26, n = 2,826	P value
Sexually active*				
n (% of total)	Yes	198 (62)	2,134 (76)	<.001
Frequency of sex*				
n (% of total)	Daily	4 (2)	69 (3)	.002
	1–3/wk	79 (41)	1,091 (53)	
	Monthly	57 (29)	513 (25)	
	Every ≤3 mo	55 (28)	393 (19)	
Sexual behaviors in the last year*				
n (% of total)	Receptive vaginal sex	165 (83)	1,901 (88)	.03
	Receptive anal sex	19 (10)	236 (11)	.55
	Performed oral genital sex	113 (57)	1,269 (59)	.58
	Received oral genital sex	94 (47)	1,131 (52)	.16
	Performed oral anal sex	4 (2)	77 (4)	.25
	Received oral anal sex	10 (5)	148 (7)	.32
No of sexual partners*/				
	Mean (SD) within the past year	1.2 (1.7)	1.3 (6.7)	.91
	Mean (SD) lifetime	7.2 (8.8)	9.2 (18.8)	.15

*Missing data excluded from the analysis.

Sexual Function Index in a nationally representative sample. These authors also reported that women who had been to a gynecologist recently also had higher scores on the FGSIS. This finding was confirmed in a subsequent validation study in female college students.⁷ Both these studies found strong internal consistency in the FGSIS, which was similar to our findings. Herbenick et al¹⁵ did study the FGSIS in a nationally representative sample, and did find that certain demographic characteristics were associated with lower levels of genital satisfaction, including black race, location (Northeast and South), and relationship status. Our findings are similar, with the exception of the specific regional differences. However, the focus of that study was to study a modified version of the FGSIS and how genital satisfaction related to sexual activity and satisfaction. Furthermore, no prior study has attempted to set a FGSIS-based cut-point for genital dissatisfaction. A variety of other validated scales have been developed to quantify genital self-image and satisfaction but in the absence of defined cut-points, it is sometimes difficult to know how to interpret these reports.^{11–13,21}

Our data suggest that genital dissatisfaction has demographic associations implying that genital self-perception may be culturally influenced. We previously reported that genital grooming practices are more frequent in younger women.⁴ In this current study we found that younger women were more likely to be dissatisfied with their genital appearance; grooming may be an effort by some young women to change genital appearance due to baseline dissatisfaction. There were small but significant differences in dissatisfaction between racial and ethnic groups. These findings imply that cultural factors may influence an individual woman's satisfaction with her genitals. This may be a factor of cultural pressures for female genitalia to look a certain

“ideal” way. The ideal way is also likely different in different communities and the fact that both the Herbenick et al¹⁵ 2011 study and ours found that black women were less likely to be dissatisfied with their genital appearance further supports this notion. Further, our data suggest that women feel less confident about the way their genitals appear rather than how they function, a subtle but important difference that informs how women may or may not feel satisfied with their bodies.

In an interesting contrast to our data indicating generally better genital self-image in women with more education, prior reports in women have indicated that body satisfaction tends to be lower in women with greater educational achievement.²² Whether this represents a difference in our cohort or a general difference between a woman's body and genital self-image is an intriguing topic for future research. Education level also plays a role in health literacy. In patients seeking surgery for genital dissatisfaction, there may be differences in health literacy that could affect their understanding of the potential harms and benefits of the procedures offered.

Sexual activity is highly correlated with emotional well-being and body image.^{23,24} Genital satisfaction is an important part of body image in relation to sexual well-being. We confirmed findings from other researchers who found that sexual activity and frequency are negatively associated with genital dissatisfaction. There are many potential explanations for this although causality cannot be gleaned from these data. We did not find any specific sexual activities aside from vaginal intercourse that were associated with genital dissatisfaction. Our ability to make comment on the relationship between genital dissatisfaction and sexual activities other than oral sex is limited as these activities were relatively uncommon in this cohort. It is interesting to note

Table 4. Multivariable analysis of demographic factors

		Adjusted odds ratio (95% CI)	P value
Age (for every 10 y)		0.86 (0.78–0.95)	.004
Race			
n (% of total)	White	1.00 (Reference)	
	Black	0.45 (0.28–0.72)	.001
	Other, non-Hispanic	1.00 (0.53–1.92)	.98
	Hispanic/Latino	1.27 (0.91–1.79)	.16
	Mixed races	0.93 (0.51–1.72)	.83
Sexual partner			
n (% of total)	Men	1.00 (Reference)	
	Women	1.26 (0.57–2.74)	.57
	Both	0.22 (0.03–1.66)	.14
	Not sexually active	2.13 (1.57–2.91)	<.001
Marital status			
n (% of total)	Married	1.0 (Reference)	
	Widowed	0.93 (0.49–1.79)	.84
	Divorced	0.95 (0.64–1.42)	.81
	Separated	0.43 (0.15–1.22)	.11
	Never married	0.96 (0.66–1.39)	.82
	Living with partner	1.12 (0.72–1.75)	.62
Education			
n (% of total)	Less than high school	1.0 (Reference)	
	High school	0.63 (0.41–0.95)	.03
	Some college	0.63 (0.42–0.94)	.02
	Bachelor's degree or higher	0.41 (0.27–0.63)	<.001
Location			
n (% of total)	Northeast	1.0 (Reference)	
	Midwest	1.32 (0.88–2.00)	.18
	South West	1.71 (1.16–2.51)	.006
	West	1.85 (1.23–2.80)	.003

that there was no relationship between oral sex and genital satisfaction, as nearly half of both groups (satisfied and dissatisfied) engaged in receptive oral sex. Prior research has shown that oral sex is positively associated with sexual esteem,²⁵ but this is a different construct from genital self-image.

This study is the first to use the FGSIS in a large nationally representative sample to analyze specific demographic characteristics associated with female genital dissatisfaction. We demonstrated high internal consistency within the FGSIS, indicating that the test is reliable in a demographically diverse population representative of the U.S. population. This study is also the first of its kind to investigate a cut-off score below which 10% of women fall. This is important as no prior scale has been used in the manner and establishing a relevant cut-point may be very useful for clinical and research purposes that may look at treatments that alter genital appearance or how women feel about their genitals. Follow-up studies in different populations are warranted to validate this cut-off point.

Our survey was anonymous and web-based, which helped to protect privacy and might have enhanced truthfulness in answering questions. That said, the anonymous nature of this survey may also be seen as a limitation. All of our participants

were required to have addresses in the United States and be non-institutionalized. This may limit generalizability. Some participants may not have been comfortable answering every question. We did see fewer women who were sexually active complete the FGSIS portion of the study. We did not explore other psychological or medical conditions that may affect body image and genital satisfaction. Although we identified statistically significant differences, the absolute differences between groups for some metrics (eg, receptive vaginal intercourse) were small.

Despite these limitations, our findings contribute to the growing body of literature addressing body image, sexual well-being, and satisfaction with genital appearance in women. Our sampling method optimizes how these findings may be generalized to the non-institutionalized U.S. population. As interest and concern regarding genital appearance becomes increasingly prevalent in women, it is critical to understand what may be driving women to alter their genital anatomy and help optimize research to measure outcomes.

Corresponding Author: Tami S. Rowen, MD, MS, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, 2356 Sutter St, Floor 5, San Francisco CA

94115, USA. Tel: 415-885-7841; Fax: 415-353-9550; E-mail: Tami.Rowen@ucsf.edu

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STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design

Tami S. Rowen; Thomas W. Gaither; Benjamin N. Breyer

(b) Acquisition of Data

Benjamin N. Breyer

(c) Analysis and Interpretation of Data

Tami S. Rowen; Thomas W. Gaither; Alan W. Shindel; Benjamin N. Breyer

Category 2

(a) Drafting the Article

Tami S. Rowen; Thomas W. Gaither; Alan W. Shindel; Benjamin N. Breyer

(b) Revising It for Intellectual Content

Tami S. Rowen; Thomas W. Gaither; Alan W. Shindel; Benjamin N. Breyer

Category 3

(a) Final Approval of the Completed Article

Tami S. Rowen; Thomas W. Gaither; Alan W. Shindel; Benjamin N. Breyer

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