






ORIGINAL ARTICLE

## Sexual Health Before and After Menopause: A Golombok Rust Sexual Satisfaction Scale-Mediated Assessment

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### Abstract

**Objective:** Menopause is often accompanied by changes in sexual desire, arousal, orgasm, and genital pain. We aimed to examine how premenopausal sexual functioning predicts postmenopausal desire, orgasm, aversion, and vaginismus/dyspareunia, and to explore the predictive value of the Golombok-Rust Inventory of Sexual Satisfaction (GRISS).

**Methods:** In this cross-sectional clinic-based study, 113 postmenopausal women with DSM-5-TR–diagnosed female sexual dysfunction attending psychiatry, gynecology, or urology outpatient clinics of a university hospital were enrolled. Sociodemographic and clinical data were collected with a structured form. Using the GRISS framework, participants retrospectively rated premenopausal desire, arousal, orgasm, and attitudes, and concurrently rated current postmenopausal sexual functioning. Within-subject changes were analysed with the Wilcoxon signed-rank test; associations with clinical variables were examined by Spearman correlations and chi-square tests. Binary logistic regression estimated odds ratios (OR) for postmenopausal aversion and vaginismus/dyspareunia according to premenopausal GRISS items.

**Results:** Sexual desire significantly declined after menopause ( $p < 0.001$ ). Higher premenopausal desire was positively associated with pre- and postmenopausal arousal and orgasm, and independently predicted maintenance of orgasm after menopause (OR = 4.02, 95% CI: 1.85–8.74,  $p < 0.005$ ). Among women without premenopausal disgust, favourable responses to GRISS items on adequate foreplay and enjoyment of affection were associated with markedly reduced odds of postmenopausal aversion, whereas reporting disgust during intercourse (“always”) strongly predicted aversion (OR  $\approx$  24). In women without premenopausal vaginismus/dyspareunia, more positive premenopausal responses regarding foreplay, comfortable penetration, relationship satisfaction, and orgasm were associated with substantially lower odds of postmenopausal vaginismus/dyspareunia (OR range  $\approx$  0.04–0.17).

**Conclusion:** Premenopausal desire, arousal, and orgasm markedly shape postmenopausal sexual functioning. Item-level GRISS responses, especially those related to disgust, foreplay, and pain-free penetration, may help identify women at increased or decreased risk for postmenopausal aversion and vaginismus/dyspareunia and support more targeted counseling around the menopausal transition.

**Keywords:** aversion, dyspareunia, menopause, Golombok-Rust Inventory of Sexual Satisfaction, sexual function, vaginismus

## INTRODUCTION

Sexual health is defined by the World Health Organization as a state of physical, emotional, mental, and social well-being in relation to sexuality, and not merely the absence of disease or dysfunction (1). The menopausal transition is frequently accompanied by changes in sexual desire, arousal, orgasm, and genital pain or dryness, which may adversely affect women's quality of life and intimate relationships (2–7). These complaints arise from a complex interplay of hormonal changes, psychosocial factors, and relationship dynamics, and they often persist rather than resolve spontaneously.

Several studies have suggested that sexual difficulties observed before menopause tend to continue into the postmenopausal period, and that premenopausal levels of sexual desire and arousal are important determinants of later sexual adjustment (6–8). Female sexual response is usually conceptualized as a sequence of desire, arousal, and orgasm with overlapping phases, and disturbances in one domain may influence the others (8–10). However, relatively few studies have examined how specific aspects of premenopausal sexual functioning, as recalled by women, are reflected in postmenopausal outcomes such as aversion or vaginismus/dyspareunia.

The Golombok-Rust Inventory of Sexual Satisfaction (GRISS) is a validated self-report instrument that assesses sexual difficulties and relationship quality in heterosexual couples and has been adapted for use in the Turkish population (3,4). Beyond providing subscale scores, GRISS item responses may offer clinically meaningful, item-level indicators of risk or protection. The present study aimed to examine how premenopausal sexual desire, arousal, and orgasm relate to postmenopausal sexual desire and orgasm, and to evaluate whether specific GRISS items can predict the development of postmenopausal aversion and vaginismus/dyspareunia in women with clinically diagnosed sexual dysfunction.

## MATERIALS AND METHODS

### Study Design and Setting

This was a cross-sectional observational study with retrospective assessment of premenopausal sexual functioning. It was conducted between 11 April 2006 and October 16, 2007, at the psychiatry, obstetrics

and gynecology, and urology outpatient clinics of a tertiary university hospital. During the study period, consecutive postmenopausal women presenting to these clinics for various reasons were screened for eligibility and invited to participate.

### Participants

Women were eligible for inclusion if they met all of the following criteria:

- Being in natural or surgical menopause at the time of assessment (according to clinical evaluation and patient report),
- Being in a stable heterosexual relationship,
- Meeting DSM-5-TR diagnostic criteria for female sexual dysfunction, as evaluated by clinicians experienced in sexual disorders,
- Having sufficient cognitive capacity to understand and complete self-report questionnaires,
- Providing written informed consent.

Exclusion criteria were:

- Sexual dysfunction due to the direct physiological effects of a substance (e.g., alcohol, illicit drugs, or prescribed medication) or a general medical condition,
- Presence of major mental disorders accompanied by cognitive impairment (such as dementia or delirium),
- Not being in menopause at the time of the interview.

In line with these criteria, a total of 113 postmenopausal women with clinically diagnosed sexual dysfunction were included in the study.

### Measures

#### *Sociodemographic and Clinical Data Form*

Participants completed a 28-item sociodemographic and clinical data form developed by the researchers. This form collected information on age, education, occupation, marital status, number of children, place of residence, origin (rural/urban), presence of systemic diseases, presence of psychiatric disorders, regular medication use, smoking status, and menopausal characteristics (type of menopause and duration).

#### *Golombok-Rust Inventory of Sexual Satisfaction (GRISS)*

Sexual functioning and satisfaction were assessed with the Golombok-Rust Inventory of ORSexual GRISS, a self-report instrument developed to evaluate sexual

difficulties and relationship quality in heterosexual couples. The GRISS consists of 28 items rated on a 5-point Likert-type scale. Items are summed to yield a total score and several subscale scores; some items are reverse-coded, and higher scores indicate more pronounced sexual dysfunction and relationship difficulties.

The Turkish adaptation and standardization of the GRISS has demonstrated acceptable reliability and validity. In the present study, the GRISS was used to evaluate sexual desire, arousal, orgasm, aversion, and vaginismus/dyspareunia dimensions.

Sexual functioning before and after menopause was evaluated as follows: at the time of data collection (when all women were postmenopausal), participants were instructed to rate their sexual experiences both for the premenopausal period ("before menopause") and for their current postmenopausal period ("after menopause") using the GRISS framework. Thus, pre- and postmenopausal sexual desire, arousal, and orgasm could be compared within the same individual. The presence of orgasm was accepted according to the patients' own perceptions and subjective experience.

### **Procedure**

All potentially eligible women attending the participating clinics during the study period were informed about the aims and procedures of the study. Those who agreed to participate provided written informed consent. Afterwards, the sociodemographic and clinical data form and the GRISS were administered in a quiet room under the supervision of a clinician, who was available to clarify any questions. All questionnaires were completed prospectively at the time of the clinic visit.

### **Sample Size and Power**

Prior to data collection, a power analysis was performed using G\*Power software to determine the required sample size. Assuming a moderate effect size (Cohen's  $d = 0.50$ ), a power of 80%, and a two-tailed alpha level of 0.05, the minimum required sample size was calculated as 88 participants. To compensate for potential missing data and to increase the robustness of the analyses, 113 women who met the inclusion criteria were ultimately enrolled, which was considered statistically adequate according to the initial power calculations.

### **Statistical Analysis**

Descriptive statistics were used to summarize sociodemographic and clinical characteristics. Continuous variables are presented as mean  $\pm$  standard deviation (SD) and categorical variables as frequencies and percentages.

The distribution of GRISS scores and related variables was examined visually and descriptively. As the majority of these variables did not meet the assumptions of normality, non-parametric tests were preferred. Differences between premenopausal and postmenopausal GRISS domain scores (e.g., desire, arousal, orgasm) within the same individuals were analysed using the Wilcoxon signed-rank test. Associations between GRISS scores and clinical variables (such as presence of systemic disease, psychiatric disorder, or regular medication use) were examined using the chi-square ( $\chi^2$ ) test for categorical variables and Spearman's rank correlation coefficient for ordinal/continuous variables.

To estimate the strength of the relationships between premenopausal GRISS responses and postmenopausal outcomes such as aversion and vaginismus/dyspareunia, separate binary logistic regression analyses were performed. In these univariate binary logistic regression models, the dependent variable was the presence or absence of the relevant postmenopausal symptom (e.g., aversion present vs. absent), and the independent variables were premenopausal GRISS items or subscale scores that had shown significant associations in the univariate binary analyses. Results of the logistic regression analyses are reported as odds ratios (OR) with 95% confidence intervals (CI).

All statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS) for Windows (SPSS Inc., Chicago, IL, USA). A two-tailed  $p$ -value  $< 0.05$  was considered statistically significant.

### **Ethical Approval**

The study protocol was approved by the Ethics Committee of Uludağ University (Date: 2006-04-11, Decision: 2006-8) and conducted in accordance with the principles of the Declaration of Helsinki. Written informed consent was obtained from all participants prior to enrolment.

## RESULTS

### Sociodemographic and Clinical Characteristics

A total of 113 postmenopausal women with clinically diagnosed sexual dysfunction were included in the study. The mean age of the sample was 53.3 ± 8.5 years (range 25–74). Almost half of the women were housewives or retired, and the great majority were married and living with their spouse. Most participants had at least a primary school education, and the number of children was typically between two and three. Regarding family structure and living environment, a considerable proportion of the women had grown up in a village or district, whereas more than half were living in a provincial centre at the time of the study. Detailed sociodemographic characteristics, including education, marital status, family structure, and current place of residence, are presented in Tables 1 and 2.

With respect to clinical and menopause-related variables, 67.6% of the women had at least one systemic disease, and 27.5% had a diagnosed psychiatric disorder. 69.1% were using regular medication,

and 10.8% were current smokers. Among those with available data, most had entered menopause naturally, while a smaller proportion had undergone surgical menopause. Clinical and menopause-related characteristics of the sample are summarized in Table 3.

### Changes in Sexual Desire, Arousal, and Orgasm

There was a statistically significant decline in sexual desire after menopause compared with the premenopausal period ( $p < 0.001$ ). Premenopausal desire was positively correlated with both premenopausal arousal ( $r = 0.53$ ,  $p < 0.001$ ;  $n = 104$ ) and postmenopausal arousal ( $r = 0.20$ ,  $p < 0.050$ ;  $n = 104$ ). Similarly, premenopausal desire showed positive correlations with premenopausal orgasm ( $r = 0.52$ ,  $p < 0.010$ ;  $n = 104$ ) and postmenopausal orgasm ( $r = 0.29$ ,  $p < 0.005$ ;  $n = 104$ ).

Premenopausal desire was not significantly related to general attitudes towards sexuality, whereas postmenopausal desire showed a significant association with patients' current approach to sexuality ( $p < 0.050$ ).

**Table 1.** Sociodemographic characteristics of the participants

Variable (valid n)	Category	n	%
<b>Education level (n = 111)</b>	No literacy	2	1.8
	Primary school	50	45.0
	Middle school	12	10.8
	High school	17	15.3
	University / College	30	27.0
	<b>Marital status (n = 110)</b>	Never married	1
Married		109	99.1
<b>Form of marriage (n = 110)</b>	Arranged marriage	60	54.5
	Self-choice / by meeting	50	45.5
<b>Occupation (n = 111)</b>	Housewife	51	45.9
	Worker	1	0.9
	Officer	4	3.6
	Retired	54	48.6
	Other	1	0.9
<b>Sexual partner (n = 101)</b>	Present	91	90.1
	Absent	10	9.9

**Table 2.** Family structure and living environment

Variable (valid n)	Category	n	%
<b>Number of children (n = 109)</b>	0	4	3.7
	1	12	11.0
	2	48	44.0
	3	36	33.0
	4	6	5.5
	5	3	2.8
<b>Presence of an elderly person at home (n = 106)</b>	None	82	77.4
	Mother	2	1.9
	Father	3	2.8
	Mother-in-law	9	8.5
	Father-in-law	2	1.9
	Other	8	7.5
<b>Current place of residence (n = 109)</b>	Village	8	7.3
	District	40	36.7
	Province / City	61	56.0
<b>Place of origin (n = 111)</b>	Village	45	40.5
	District	36	32.4
	City	30	27.0

**Table 3.** Clinical characteristics and menopause-related variables

Variable (valid n)	Category	n	%
<b>Type of menopause (n = 87)</b>	Natural	68	78.2
	Surgical	19	21.8
<b>Systemic disease (n = 111)</b>	Present	75	67.6
	Absent	36	32.4
<b>Psychiatric disorder (n = 109)</b>	Present	30	27.5
	Absent	79	72.5
<b>Regular medication use (n = 110)</b>	Yes	76	69.1
	No	34	30.9
<b>Cigarette smoking (n = 111)</b>	Yes	12	10.8
	No	99	89.2

Among women with low premenopausal sexual desire, the correlation between pre- and postmenopausal attitudes towards sexuality was inverse ( $r = -0.37$ ,  $p = 0.001$ ;  $n = 76$ ), indicating a further deterioration in sexual attitude after menopause. In contrast, in women who reported adequate premenopausal desire, no significant change was observed in their attitudes towards sexuality after menopause.

When premenopausal desire was entered into a logistic regression model, the odds of maintaining orgasm after menopause were approximately four times higher in women who had premenopausal desire compared with those who did not (OR = 4.02, 95% CI: 1.85–8.74,  $p < 0.005$ ).

### **Premenopausal Arousal, Systemic Disease, and Medication Use**

Premenopausal arousal was moderately correlated with postmenopausal orgasm ( $r = 0.70$ ,  $p < 0.050$ ). Women who reported premenopausal arousal problems had significantly lower odds of reaching orgasm after menopause than those without such problems (OR = 4.02, 95% CI: 1.85–8.74,  $p < 0.005$ ), whereas women without premenopausal arousal problems had a marked increase in the likelihood of achieving orgasm (OR = 4.02, 95% CI: 1.85–8.74,  $p < 0.005$ ). There was no statistically significant association between either premenopausal or postmenopausal

desire and the presence of a psychiatric disorder ( $p > 0.050$ ). However, in women with systemic disease, low premenopausal desire was significantly associated with low postmenopausal desire ( $r = 0.37$ ,  $p = 0.001$ ;  $n = 104$ ). In addition, postmenopausal desire was significantly related to regular medication use ( $p = 0.005$ ;  $r = 0.30$ ,  $p < 0.050$ ;  $n = 103$ ). Among participants without psychiatric illness, both systemic disease and medication use were positively correlated with postmenopausal desire ( $r = 0.44$  and  $r = 0.32$ , respectively; both  $p < 0.001$ ;  $n = 72$ ).

### **Determinants of Postmenopausal Aversion (disgust)**

In women who did not report premenopausal disgust on the GRISS, several premenopausal items were significantly associated with the development of postmenopausal aversion. More favourable responses to the items "Do you think the time you and your partner spend on foreplay (kissing, caressing, etc.) is sufficient?" (item 5) and "Do you enjoy hugging and caressing your spouse?" (item 9) were negatively correlated with later aversion ( $r = -0.35$  and  $r = -0.32$ , respectively; both  $p < 0.005$ ). By contrast, premenopausal reports of disgust during lovemaking, assessed by the item "Are you disgusted by what you do during lovemaking?" (item 23), were positively correlated with postmenopausal aversion ( $r = 0.34$ ,  $p < 0.005$ ). Negative correlations were also observed for items 25 and 28 ( $r = -0.45$  and  $r = -0.31$ , respectively;  $p < 0.005$ ).

Binary logistic regression analyses confirmed these patterns. Compared with women who answered "never", those who answered "most of the time" to item 5 ("Do you think the time you and your partner spend on foreplay is sufficient?") had an eight-fold reduction in the odds of developing postmenopausal aversion (OR = 0.09, 95% CI: 1.85–8.74  $p < 0.050$ ). Women who answered "most of the time" or "always" to item 9 ("Do you enjoy hugging and caressing your spouse?") were also substantially less likely to develop aversion (OR = 0.06 and OR = 0.05, respectively; both  $p < 0.050$ ).

In contrast, women who answered "sometimes" to item 23 ("Are you disgusted by what you do during lovemaking?") had approximately a six-fold higher risk of postmenopausal aversion than those who answered "never" (OR = 6.54, 95% CI: 1.85–8.74  $p < 0.050$ ), and those who answered "always" had about a 24-fold higher risk (OR = 25.50,  $p < 0.050$ ). In the

multivariable model, endorsement of “always” on item 23 emerged as the strongest independent predictor of postmenopausal aversion (OR = 24.58, 95% CI: 1.85–8.74,  $p < 0.050$ ). Items addressing enjoyment of being loved and caressed (item 25) and satisfaction during intercourse (item 28) did not contribute additional explanatory power once these variables were included.

### **Determinants of Postmenopausal Vaginismus/Dyspareunia**

Among women who had not experienced vaginismus or dyspareunia before menopause, several premenopausal GRISS items were associated with the emergence of these problems in the postmenopausal period. Significant differences in postmenopausal vaginismus/dyspareunia were observed according to responses to items 4, 5, 8, 17, 20, 22, and 26 (all  $p < 0.050$ ). In the same subgroup, significant negative correlations were found between postmenopausal vaginismus/dyspareunia and items 5, 8, 10, 17, 21, 22, 26, and 28 ( $r$  values ranging from  $-0.23$  to  $-0.39$ ; all  $p < 0.050$ ), suggesting a protective effect of more positive premenopausal sexual experiences.

Logistic regression analysis showed that women who answered “always” to item 5 (“Do you think the time you and your partner spend on foreplay, such as kissing and caressing, is sufficient?”) had about a nine-fold reduction in the risk of developing postmenopausal vaginismus or dyspareunia compared with those who answered “never” (OR = 0.06, 95% CI: 1.85–8.74,  $p < 0.050$ ). Women who reported being able to reach satisfaction “sometimes” on item 8 (“Can you reach satisfaction (orgasm) during sexual intercourse?”) were approximately eight- to ninefold less likely to develop dyspareunia than those who answered “never” (OR = 0.09 and OR = 0.07, both  $p < 0.050$ ).

Women who answered “always” to item 10 (“Do you find your sexual relationship with your spouse satisfactory?”) were almost ninefold less likely to develop dyspareunia (OR = 0.06, 95% CI: 1.85–8.74,  $p < 0.050$ ). Those who answered “most of the time” or “always” to item 21 (“Can your partner’s genitals enter your genitals without causing discomfort?”) had markedly reduced odds of postmenopausal vaginismus (OR = 0.17 and OR = 0.06, respectively;  $p < 0.050$ ). Likewise, affirmative answers (“most of the time” or “always”) to item 22 (“During lovemaking, is the time allocated only

for intercourse sufficient for you?”) were associated with an approximately 8.8-fold reduction in the risk of vaginismus (OR = 0.17 and OR = 0.04, respectively;  $p < 0.050$ ). Finally, women who answered “always” to item 28 (“Do you reach orgasm during sexual intercourse?”) were about ninefold less likely to develop vaginismus than those who answered “never” (OR = 0.06, 95% CI: 1.85–8.74,  $p < 0.050$ ). The results of the logistic regression analyses examining premenopausal GRISS items as predictors of postmenopausal aversion and vaginismus/dyspareunia are summarized in Table 4.

### **DISCUSSION**

The main finding of this study is the strong continuity between premenopausal and postmenopausal sexual desire in women with sexual dysfunction. Women who reported preserved desire before menopause were markedly more likely to report desire after menopause than those without premenopausal desire. This result is consistent with previous reports indicating that sexual problems in the premenopausal period frequently persist into the postmenopausal years and that premenopausal desire is a key determinant of later sexual adjustment (6,7). Clinically, our findings suggest that low desire before menopause should be regarded as a potential early marker of long-term hypoactive sexual desire rather than as a transient phase.

Our results also underscore the close relationship between desire, arousal, and orgasm. Premenopausal desire correlated positively with both pre- and postmenopausal arousal and orgasm, and women without premenopausal arousal problems were considerably more likely to continue to reach orgasm after menopause. This pattern supports models that view female sexual response as a dynamic sequence in which desire, arousal, and orgasm influence each other (8–10). As noted in earlier literature, women who experience chronic arousal difficulties rarely achieve orgasm and may be misclassified as having a primary orgasmic disorder (9). The present data reinforce the idea that premenopausal desire and arousal problems should be addressed proactively, as they may foreshadow persistent orgasmic difficulties in the postmenopausal period.

The role of systemic disease and medication use appeared more complex than expected. In most studies, climacteric symptoms, comorbid physical

**Table 4.** Logistic regression analysis of GRISS items predicting postmenopausal aversion and vaginismus/dyspareunia

Outcome	GRISS item (summary content)	Response category* (reference: "Never")	OR	p
<b>Aversion</b>	Item 5 – "Do you think the time you and your partner spend on foreplay is sufficient?"	Most of the time	0.089	< 0.05
	Item 9 – "Do you enjoy hugging and caressing your spouse?"	Most of the time	0.063	< 0.05
		Always	0.048	< 0.05
	Item 23 – "Are you disgusted by what you do during lovemaking?"	Sometimes	6.538	< 0.05
Always		24.575	< 0.05	
<b>Vaginismus / dyspareunia</b>	Item 5 – "Do you think the time you and your partner spend on foreplay is sufficient?"	Always	0.059	< 0.05
	Item 8 – "Can you reach satisfaction (orgasm) during sexual intercourse?"	Sometimes	0.089	< 0.05
	Item 10 – "Do you find your sexual relationship with your spouse satisfactory?"	Always	0.057	< 0.05
	Item 21 – "Can your partner's genitals enter your genitals without causing discomfort?"	Most of the time	0.173	< 0.05
		Always	0.064	< 0.05
	Item 22 – "During lovemaking, is the time devoted only to intercourse sufficient for you?"	Most of the time	0.167	< 0.05
		Always	0.044	< 0.05
Item 28 – "Do you reach orgasm during sexual intercourse?"	Always	0.061	< 0.05	

conditions, and mood symptoms are associated with reduced sexual desire and satisfaction (5,11–13). In our sample, however, among women without psychiatric disorders, systemic disease and regular medication use were positively associated with postmenopausal desire. One plausible explanation is that effective treatment of chronic disease improves overall well-being and indirectly enhances sexual interest (14). Another possibility is that women who are regularly followed for systemic illness may have greater access to health information and counseling, including opportunities to discuss sexual concerns. Because we did not differentiate between treated and untreated systemic conditions or examine disease severity and specific medications, these findings should be interpreted cautiously and considered hypothesis-generating.

An important contribution of this study is the demonstration that specific GRISS items related to disgust and aversion provide clinically meaningful information. Among women without premenopausal disgust, items reflecting sufficient foreplay and enjoyment of affectionate contact were associated with

a markedly reduced risk of postmenopausal aversion, whereas endorsing disgust during lovemaking was a strong predictor of later aversion. The item "Are you disgusted by what you do during lovemaking?" emerged as the most powerful single predictor. Aversion disorder, characterized by persistent or recurrent extreme disgust and avoidance of genital contact with a partner, has been conceptualized as a phobic-like condition in some frameworks (15–17). Our findings indicate that even subclinical or item-level indicators of disgust before menopause may foreshadow a postmenopausal aversion pattern. From a clinical point of view, careful attention to these GRISS items may allow earlier identification of women who would benefit from psychoeducational or psychotherapeutic interventions targeting disgust and avoidance (4,15–17).

Similarly, analyses restricted to women without premenopausal vaginismus or dyspareunia showed that GRISS items reflecting adequate foreplay, satisfaction with the relationship, comfortable penetration, sufficient time allocated to intercourse, and the ability to reach orgasm were associated with a reduced risk of

postmenopausal vaginismus/dyspareunia. Vaginismus and dyspareunia in the menopausal period may arise from psychogenic mechanisms, vulvovaginal atrophy, or a combination of both, and can lead to avoidance behaviors that seriously impair sexual functioning (4,16,18). Our results support the view that positive sexual experiences before menopause, including sufficient foreplay, enjoyable intimacy, and pain-free penetration, provide a protective background. In contrast, even modest premenopausal difficulties in these areas may, in the context of hormonal changes and relationship stressors, contribute to the emergence of vaginismus or dyspareunia in later life (4,7,16,18).

Taken together, these findings highlight the value of GRISS as more than a global measure of sexual satisfaction. The scale offers a structured framework for simultaneously evaluating desire, arousal, orgasm, communication, avoidance, vaginismus, and pain (2–4,8). Our study suggests that both subscale scores and specific items can help clinicians to identify women whose premenopausal sexual functioning places them at higher risk for postmenopausal problems, to recognize early signs of disgust and avoidance, and to detect protective patterns that may buffer against genital pain or vaginismus. Integrating such structured assessments into routine counseling before and during the menopausal transition may facilitate more individualized, preventive, and timely interventions in sexual medicine and menopause clinics (1,4–7,11–13,16–18).

### Limitations

This study has several limitations that should be acknowledged. First, the sample consisted exclusively of postmenopausal women who were diagnosed with sexual dysfunction and referred to psychiatry, gynecology, or urology clinics. Therefore, the results cannot be generalized to community samples or to women without clinically significant sexual complaints. Second, a cross-sectional observational study with retrospective assessment of premenopausal sexual functioning, information on premenopausal sexual functioning was based on retrospective self-report, which is vulnerable to recall bias and possible idealization or minimization of past experiences. Third, we did not systematically assess important variables such as partner sexual function, marital satisfaction, relationship conflict, or partner's health

status, despite evidence that these factors are closely related to sexual satisfaction and sexual functioning in marriage (17). Fourth, we did not include biological markers such as hormone levels, degree of urogenital atrophy, or detailed information about hormone replacement therapy and other medications. As a result, we cannot fully disentangle psychogenic mechanisms from organic contributors.

Finally, a relatively modest sample size was used for multiple regression models that included numerous GRISS items and clinical variables. This increases the risk of unstable odds ratio estimates and type I error, particularly for subgroup analyses with smaller effective sample sizes. Correction for multiple comparisons was not performed, and the findings regarding specific items should therefore be considered exploratory and hypothesis-generating rather than confirmatory.

### CONCLUSION

Menopause represents a critical turning point in women's sexual lives. The present study demonstrates that sexual attitudes and behaviors before menopause—especially levels of desire, arousal, orgasm, and the presence of disgust or pain—are strongly reflected in postmenopausal sexual functioning. Our results show that women with preserved premenopausal desire and arousal are more likely to maintain desire and orgasm after menopause, whereas those with early desire and arousal difficulties remain at risk for persistent dysfunction (6–10). In addition, even in the absence of overt premenopausal aversion or vaginismus, certain patterns of disgust and discomfort captured by GRISS items may predict the subsequent development of postmenopausal aversion and vaginismus–dyspareunia (4,7,16–19).

From a clinical standpoint, these findings support the systematic use of validated instruments such as GRISS in the assessment of women approaching or undergoing menopause (2,3,8). Careful interpretation of both subscale scores and item-level responses can help clinicians to recognize high-risk profiles early, provide targeted counseling, and, when necessary, refer patients for specialized psychosexual or couple-based interventions. In particular, addressing low desire, negative sexual cognitions, disgust, and pain symptoms before they become entrenched may prevent long-term deterioration in sexual health and

relationship quality (18,19).

In conclusion, sexual health after menopause is not determined solely by hormonal changes; it is also the continuation of a lifetime pattern of sexual attitudes, behaviors, and relationship dynamics. Evaluating these patterns with structured tools and integrating the findings into individualized counseling at the onset of menopause may help many women to preserve or regain a satisfying sexual life rather than accepting sexual dysfunction as an inevitable consequence of aging and menopause.

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**Conflict of Interest:** The authors declare no conflicts of interest.

**Informed Consent:** Informed consent was obtained from all participants involved in the study.

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**Ethical Approval:** The study was approved by the Uludağ University Medical Faculty Ethics Committee for Non-interventional Studies (Approval No: 2006-8, Date: 2006-04-11). and adhered to the principles of the Declaration of Helsinki.

**Author Contributions:** The authors contributed equally to the study.

- Concept and Design: S.Z., R.D.
- Supervision: O.E.
- Data Collection and/or Processing: Y.S., S.K.
- Materials: S.K.
- Analysis and/or Interpretation: S.Z., R.D.
- Literature Search: S.Z., Y.S.
- Writing and Critical Review: S.Z., R.D., O.E.

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