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ORIGINAL ARTICLE

Importance of genitourinary syndrome of menopause on the quality of life of postmenopausal women: a cross-sectional study from Turkey

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Abstract

Background

Genitourinary Syndrome of Menopause (GSM), as defined by the International Society for the Study of Women's Sexual Health and the North American Menopause Society, encompasses genital, sexual, and urinary signs and symptoms associated with estrogen deficiency.

Objective

To evaluate the impact of GSM on quality of life among postmenopausal women in a Turkish population using validated menopause-specific instruments.

Methods

This cross-sectional study included 194 sexually active postmenopausal women aged 45-65 years attending a university-affiliated teaching hospital in Turkey. GSM was diagnosed based on clinical symptoms and physical examination findings. Participants completed the Menopause-Specific Quality of Life (MENQOL) and Day-to-Day Impact of Vaginal Aging (DIVA) questionnaires. Women receiving systemic or local menopausal hormone therapy were excluded. Factor analysis, reliability testing, group comparisons, and Pearson correlation analyses were performed.

Results

Women with GSM had significantly higher total DIVA and MENQOL scores than women without GSM ($p<0.001$). The sexual functioning domain was the most affected dimension across both instruments. A very strong correlation was observed between the DIVA sexual functioning and MENQOL sexual domains ($r=0.919$), indicating concordant assessment of GSM-related sexual impairment.

Conclusions

In this Turkish cohort, GSM was associated with significantly impaired quality of life, particularly in the domain of sexual functioning. These findings underscore the need for routine GSM screening and proactive management in postmenopausal women, especially in settings where cultural barriers may limit symptom disclosure.

Keywords: Atrophic vaginitis, DIVA questionnaire, Genitourinary syndrome of menopause, Menopausal symptoms, MENQOL questionnaire, Sexual health, Vulvovaginal atrophy.

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Introduction

Genitourinary syndrome of menopause (GSM) is defined as a constellation of genital, sexual, and urinary signs and symptoms associated with estrogen deficiency that may occur during and after the menopausal transition [1]. These include vulvovaginal dryness, burning, irritation, dyspareunia, urinary urgency, dysuria, and recurrent urinary tract infections. The term was introduced to replace the narrower concept of vulvovaginal atrophy, recognizing the multisystem nature of the condition [2].

Estrogen deficiency leads to reduced vascularization, thinning of the vaginal epithelium, decreased elasticity, and diminished lubrication, contributing to progressive genitourinary symptoms [1-3], including dyspareunia, vaginal dryness, mucosal irritation, itching, dysuria, and sexual dysfunction [4]. Women may also experience reduced sexual desire, impaired arousal and orgasm, decreased sexual satisfaction, and urinary tract symptoms such as frequency, urgency, nocturia, dysuria, incontinence, and recurrent postcoital urinary tract infections, in addition to vaginal atrophy [5-6]. Unlike vasomotor symptoms, GSM is a chronic condition that typically worsens over time if left untreated.

Approximately 30% of women aged 55-75 years in the Pan-European Study experienced symptoms of GSM [7]. The EMPOWER survey revealed that three-quarters of women who did not receive treatment for GSM symptoms had never discussed their symptoms with a healthcare provider [8]. In the international VIVA (Vaginal Health: Insights, Views & Attitudes) survey, 45% of women experienced symptoms, but only 4% recognized them as being attributable to menopause-related vaginal atrophy [9]. Previous studies have demonstrated that many postmenopausal women feel embarrassed to discuss GSM with healthcare providers [10-12]. Likewise, many clinicians are uncomfortable addressing issues related to patients' sexual intimacy [13], although patients are more willing to discuss these concerns when their healthcare providers initiate the conversation [14].

Vulvovaginal atrophy typically becomes clinically apparent approximately 4-5 years after the menopausal transition, and unlike vasomotor symptoms, such as hot flashes and night sweats, it does not resolve over time. In fact, its severity tends to increase with time [5]. To avoid delays in diagnosis and treatment, it is important to understand the extent to which vaginal atrophy and its associated symptoms affect women during the perimenopausal and postmenopausal periods. It is important to recognize that women's sexual health is influenced not only by vaginal atrophy, but also by aging, the menopausal transition itself, including the redefinition of feminine roles [15], interpersonal relationships [16], and changes in body image and self-esteem over time [5]. The 2020 North American Menopause Society position statement emphasizes that GSM is a chronic condition requiring long-term management rather than episodic treatment [1,17].

Taken together, although approximately one-third of postmenopausal women experience GSM, many do not seek medical care, many do not receive treatment, few attribute their symptoms to the menopausal transition, and some clinicians are reluctant to address these concerns. These factors may perpetuate a cycle of untreated symptoms without definitive management. In Turkey, sociocultural norms surrounding sexuality and menopause have been associated with reluctance to openly discuss sexual and genitourinary symptoms, which may contribute to delayed recognition and treatment [11,18-19]. Despite this, data specifically evaluating the impact of GSM on quality of life among Turkish women remain limited.

The Menopause-Specific Quality of Life (MENQOL) and Day-to-Day Impact of Vaginal Aging (DIVA) questionnaires are validated instruments for assessing menopausal symptoms and the burden of vaginal symptoms, respectively. Using both instruments allows a comprehensive evaluation of the impact of GSM on quality of life. The primary objective of this study was to quantify the impact of GSM on quality of life in postmenopausal Turkish women, with particular emphasis on sexual functioning.

Methods

This was a cross-sectional observational study conducted between December 2018 and December 2019 at a university-affiliated teaching hospital in Turkey. Postmenopausal, sexually active women aged 45-65 years were recruited. Postmenopause was defined as ≥12 months of amenorrhea. Women within the first two years after menopause and those beyond the second year were included to capture both early and

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late postmenopausal stages.

Women receiving systemic or local menopausal hormone therapy, those with medical comorbidities affecting sexual function, and those with active genital infection or malignancy were excluded. The study was approved by the local institutional ethics committee and conducted in accordance with the Declaration of Helsinki. All participants provided written informed consent before enrollment. Each participant underwent a pelvic examination and was evaluated for objective signs of GSM. The diagnosis of GSM was confirmed based on physical examination and laboratory findings.
After obtaining both oral and written informed consent, demographic data, medical, surgical, obstetric, gynecologic, and family history, current medical conditions, medication use, and lifestyle habits (alcohol consumption, smoking, and exercise) were recorded.

The Menopause-Specific Quality of Life (MENQOL) questionnaire was administered [20] The MENQOL consists of 29 items. Participants rated each item on a scale from 0 to 6, where 0 indicated that the symptom had not bothered them during the previous 4 weeks and 6 indicated that it had bothered them extremely during the same period.

The Day-to-Day Impact of Vaginal Aging (DIVA) questionnaire was also administered [21]. The DIVA consists of 23 items assessing the extent to which vaginal symptoms affected participants' daily life during the previous 4 weeks. Responses were scored on a 5-point scale ranging from 1 (never) to 5 (very much).

Statistical analysis

Factor and reliability analyses were performed for each questionnaire. Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) for Windows, version 23.0 (IBM Corp., Armonk, NY, USA). Demographic characteristics were summarized using descriptive statistics. Independent-samples t-tests were used for continuous variables, and Fisher's exact test was used for categorical variables, when appropriate. Data are presented as mean ± standard error of the mean (SEM). A two-sided p value <0.05 was considered statistically significant. Pearson correlation coefficients with two-tailed p values were calculated to assess the association between each MENQOL domain and each DIVA domain.

Results

Patient demographics are presented in Table 1. Age group, time since menopause (within the second year or after the second year), body mass index (BMI) category (healthy weight, overweight, or obese), educational level, and employment status were similar between women with GSM and those without GSM.

Table 1. Demographic data of women.

	Women with Genitourinary Syndrome of Menopause (n=154)	Women without Genitourinary Syndrome of Menopause (n=40)	p value
Age			
45-49	69	19	0.108
50-54	42	9	
55-59	30	5	
60-65	13	7	
Mean ± SD (min;max)	49.97 ± 5.14 (45;65)	51.05 ± 6.56 (45;65)	
Time since Menopause			
The first two years *	100	27	0.585
After the second year	54	13	
Body Mass Index (kg/m^2)			
18.5-24.9 (normal)	26	0	
25.0-29.9 (overweight)	42	20	0.778
> 30.0 (obese)	86	20	
Education level			
Illiterate	13	2	0.349
Elementary School	66	23	
High School	19	3	
University and higher	56	12	

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	Women with Genitourinary Syndrome of Menopause (n=154)	Women without Genitourinary Syndrome of Menopause (n=40)	p value
Employment status Employed Unemployed	 58 96	 21 19	 0.738

Data are presented as mean ± standard deviation (SD) or frequencies.

Exploratory factor analysis identified four MENQOL domains: physical, vasomotor, sexual, and psychosocial. The data were suitable for factor analysis, with a Kaiser–Meyer–Olkin (KMO) value of 0.91. Internal consistency was high across all domains (Cronbach's α: physical, 0.92; vasomotor, 0.86; sexual, 0.84; psychosocial, 0.87), indicating good reliability.

Exploratory factor analysis identified four DIVA domains: sexual functioning, self-concept and body image, emotional well-being, and daily activities. The data were suitable for factor analysis, with a Kaiser–Meyer–Olkin (KMO) value of 0.86. Internal consistency was high across all domains (Cronbach's α: sexual functioning, 0.88; self-concept and body image, 0.92; emotional well-being, 0.85; daily activities, 0.84), indicating good reliability.

Compared with women without GSM, women with GSM had significantly higher mean total DIVA (p<0.001), DIVA sexual functioning (p<0.001), total MENQOL (p<0.001), MENQOL physical (p=0.017), and MENQOL sexual (p<0.001) scores (Table 2).

Table 2. DIVA and MENQOL dimensions according to GSM status.

	Women with Genitourinary Syndrome of Menopause (n=154)	Women without Genitourinary Syndrome of Menopause (n=40)	p value
DIVA Self-concept and body image	2.30 ± 1.20	2.02 ± 1.47	0.201
DIVA Sexual functioning	2.40 ± 0.90	0.42 ± 0.43	0.001
DIVA Activities of daily living	1.12 ± 1.09	1.13 ± 1.16	0.976
DIVA Emotional well-being	1.09 ± 0.95	1.15 ± 1.14	0.724
DIVA Total score	40.22 ± 14.43	22.78 ± 16.03	0.001
MENQOL Physical	2.61 ± 1.57	1.95 ± 1.42	0.017
MENQOL Vasomotor	2.66 ± 2.00	2.37 ± 1.96	0.402
MENQOL Sexual	3.46 ± 1.41	0.31 ± 0.43	0.001
MENQOL Psychosocial	2.53 ± 1.61	2.10 ± 1.57	0.141
MENQOL Total score	77.90 ± 36.64	54.55 ± 34.40	0.001

Data are presented as mean ± standard deviation (SD).

There was a low correlation between the DIVA sexual functioning domain and the total MENQOL score (r=0.413). A moderate correlation was observed between the total DIVA score and the MENQOL sexual domain (r=0.616). A very strong correlation was found between the DIVA sexual functioning and MENQOL sexual domains (r=0.919) (Table 3).

Table 3. The correlation of DIVA and MENQOL dimensions among women with GSM.

	MENQOL Physical	MENQOL Vasomotor	MENQOL Sexual	MENQOL Psychosocial	Total MENQOL score
DIVA Self-concept and body image	0.307 r=0.074	0.910 r=0.008	0.035 r=0.153	0.588 r=0.040	0.294 r=0.076
DIVA Sexual functioning	0.000 r=0.278	0.137 r=0.108	0.000 r=0.919	0.001 r=0.229	0.000 r=0.413

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	MENQOL Physical	MENQOL Vasomotor	MENQOL Sexual	MENQOL Psychosocial	Total MENQOL score
DIVA Activities of daily living	0.472 r=0.052	0.258 r=0.082	0.556 r=0.043	0.741 r=0.024	0.329 r=0.071
DIVA Emotional	0.747 r=-0.023	0.583 r= -0.040	0.476 r=0.052	0.562 r= -0.042	0.556 r= -0.043
Total DIVA score	0.006 r=0.195	0.441 r=0.056	0.000 r=0.616	0.092 r=0.122	0.000 r=0.263

Presented are data as p values (upper values) and coefficient correlations (lower value).

Discussion

This study demonstrates that total scores of both MENQOL and DIVA questionnaires are influenced by the presence of GSM, which is associated with substantial impairment in quality of life among postmenopausal Turkish women, with sexual functioning being the most affected domain. Women diagnosed with GSM had a markedly higher overall quality-of-life burden than women without GSM, indicating that the syndrome exerts measurable and clinically relevant effects beyond isolated genital symptoms. The inclusion of a non-GSM comparison group enabled us to quantify the magnitude of GSM-related impairment directly, reinforcing that the observed differences reflect disease impact rather than measurement variability. The strong concordance between sexual domains across instruments further highlights the central role of sexual dysfunction in the overall burden of GSM.

Epidemiologic surveys underscore this relationship. The international VIVA (Vaginal Health: Insights, Views & Attitudes) survey consists of 3,520 postmenopausal women, aged 55-65 years. Among respondents, 45% reported vaginal symptoms; of those symptomatic, 75% reported negative effects on sexual intimacy, overall quality of life, and feelings of health and attractiveness [9]. In the CLOSER (Clarifying Vaginal Atrophy's Impact On SEx and Relationships) survey, conducted on 4,100 postmenopausal women, 58% reported less frequent sexual intercourse, 49% reported less satisfying sexual experiences, and 55% avoided intimacy due to pain, changes associated with strain in both emotional and physical aspects of relationships [22]. Consistently, the REVIVE survey, conducted in 3,046 postmenopausal women with vulvar and vaginal atrophy (dryness, dyspareunia, and irritation), found that 59% reported reduced sexual pleasure, 24% reported sleep disturbance, and 23% reported lower overall life satisfaction and negative mood changes, linking GSM symptoms to measurable decrements in QoL [23]. Collectively, these large-scale data support our findings that sexual functioning represents the most vulnerable domain in women affected by GSM.

Interventional data further support these associations. The 12-week SMART-3 study (Selective Estrogen Menopause And Response to Therapy 3) evaluated 664 postmenopausal women, aged 45-60 years, each with at least one moderate-to-severe bothersome vulvovaginal atrophy symptom (dryness, itching/irritation, or pain with intercourse). VVA symptom severity showed a strong relationship with MENQOL, and even a 1-point improvement in vaginal symptom severity was associated with meaningful improvement in MENQOL scores [24]. In another study that included data obtained from the Menopause Strategies: Finding Lasting Answers for Symptoms and Health Vaginal Health Trial, which is a 12-week, double-blind, placebo-controlled randomized trial for the treatment of vulvovaginal symptoms, treatment arms received either a vaginal 10-µg estradiol tablet plus placebo gel, a vaginal moisturizer plus placebo tablet, or dual placebo (n=94), and completed DIVA at week 12; all arms improved across DIVA domains, with the largest clinically important change in sexual functioning [25]. In another descriptive cross-sectional study conducted among 385 postmenopausal women, almost 75% had a diagnosis of GSM, and sexual functioning was the most affected QoL domain [26]. These findings reinforce that targeted management of GSM symptoms can translate into tangible improvements in sexual well-being and overall life satisfaction.

Beyond symptom severity, sociocultural perceptions and attitudes toward sexuality also influence quality-of-life outcomes. Postmenopausal women's perception and understanding of sexuality during the menopausal period in Europe were evaluated through a telephone survey. Overall, 34% of the participants

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mentioned that they had experienced reduced sex drive, while 71% emphasized the importance of having an active sex life throughout their lives, noting that mental and sexual wellness are directly related to self-esteem, life fulfillment, and vaginal discomfort [27]. Consistent with this, maintaining sexual activity after menopause is associated with better overall well-being and is considered a component of successful aging [28-30]. These perspectives align with our findings and underscore that GSM-related sexual dysfunction carries broader psychosocial implications.

Across diverse populations, poorer sexual function correlates with lower QoL, with the largest decrements in sexual domains and additional impacts on sleep, mood, and daily functioning [23-24]. In our cohort, while sexual functioning was significantly affected, we did not observe measurable differences in the self-concept/body-image, activities-of-daily-living, or emotional well-being subdomains. One possible explanation is that some daily-life items capture general midlife experiences rather than GSM-specific limitations, potentially attenuating detectable associations. Additionally, emotional distress or body image concerns may be underreported, particularly in cultural contexts where genitourinary symptoms are often normalized as part of aging [31].

Screening considerations reinforce these findings. GSM diagnosis was more likely at annual wellness visits when structured tools such as the DIVA questionnaire are utilized [32]. This aligns with prior reports of communication barriers and supports the use of structured questionnaires to facilitate earlier recognition of GSM [10-12]. Therapeutic response data also point in the same direction. In Domoney et al.'s study, among patients receiving treatment for vaginal atrophy, 40% felt they had regained their previous bodies and 33% felt less isolated and closer to their partners [33]. Together, these data suggest that alleviating GSM symptoms improves physical comfort, body image, and relationship well-being: core elements of QoL.

Several limitations should be acknowledged. The study was conducted in a single teaching and research hospital, and the majority of participants were from middle- or lower-income backgrounds, which may limit generalizability. The findings should therefore be interpreted cautiously and validated in broader socioeconomic and regional populations within Turkey. Additionally, although we assessed quality-of-life outcomes, more detailed evaluation of psychological comorbidities, comprehensive sexual function parameters, and systemic medical conditions could provide deeper insight into the multidimensional burden of GSM. Future research incorporating additional validated instruments and longitudinal designs may further clarify the long-term impact of GSM and its management.

In conclusion, Genitourinary Syndrome of Menopause is associated with significant impairment in quality of life among postmenopausal Turkish women, with sexual functioning emerging as the most affected domain. These findings directly support the primary objective of this study, demonstrating that GSM extends beyond localized vaginal symptoms and exerts measurable effects on broader physical and psychosocial well-being. Clinicians can improve postmenopausal women's quality of life, particularly in the domain of sexual functioning, through timely recognition and appropriate management of GSM symptoms [34]. Treatment strategies should address not only local genital complaints but also related outcomes including self-esteem, sexual and emotional well-being [35,36], medical comorbidities [37], and sexual quality-of-life [38]. Given that sexual concerns are frequently under-discussed in routine clinical encounters, proactive assessment of GSM and sexual health by gynecologists, nurse practitioners, and primary care clinicians may facilitate earlier diagnosis, reduce stigma, and support longitudinal management of this chronic condition, ultimately improving patient outcomes and satisfaction [34,39].

Disclosures

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Conflicts of interests

The authors declare having no conflicts of interest.

Attestation statement

Data regarding any of the subjects in the study has not been previously published and will be made available to the editors of the journal for review or query upon request.

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Data sharing statement

Data will be shared with all qualified investigators.

References

1. The NAMS 2020 GSM Position Statement Editorial Panel. The 2020 genitourinary syndrome of menopause position statement of The North American Menopause Society. Menopause. 2020;27(9):976-992. https://doi.org/10.1097/GME.0000000000001609
2. Bachmann GA, Nevadunsky NS. Diagnosis and treatment of atrophic vaginitis. Am Fam Physician. 2000;61(10):3090-3096.
3. Salvatore S, Athanasiou S, Candiani M. The use of pulsed CO2 lasers for the treatment of vulvovaginal atrophy. Curr Opin Obstet Gynecol. 2015;27(6):504-508. https://doi.org/10.1097/GCO.0000000000000230
4. Pieralli A, Fallani MG, Becorpi A, et al. Fractional CO2 laser for vulvovaginal atrophy (VVA) dyspareunia relief in breast cancer survivors. Arch Gynecol Obstet. 2016;294(4):841-846. https://doi.org/10.1007/s00404-016-4118-6
5. Sturdee DW, Panay N. Recommendations for the management of postmenopausal vaginal atrophy. Climacteric. 2010;13(6):509-522. https://doi.org/10.3109/13697137.2010.522875
6. Pastore LM, Carter RA, Hulka BS, Wells E. Self-reported urogenital symptoms in postmenopausal women: Women's Health Initiative. Maturitas. 2004;49(4):292-303. https://doi.org/10.1016/j.maturitas.2004.06.019
7. Park BY, Boles I, Monavvari S, et al. The association between wildfire exposure in pregnancy and foetal gastroschisis: a population-based cohort study. Paediatr Perinat Epidemiol. 2022;36(1):45-53. https://doi.org/10.1111/ppe.12823
8. Calleja-Agius J, Brincat MP. The urogenital system and the menopause. Climacteric. 2015;18 Suppl 1:18-22. https://doi.org/10.3109/13697137.2015.1078206
9. Nappi RE, Kokot-Kierepa M. Vaginal Health: Insights, Views & Attitudes (VIVA) - results from an international survey. Climacteric. 2012;15(1):36-44. https://doi.org/10.3109/13697137.2011.647840
10. Portman DJ, Gass ML, Panel VATCC. Genitourinary syndrome of menopause: new terminology for vulvovaginal atrophy from the International Society for the Study of Women's Sexual Health and the North American Menopause Society. Climacteric. 2014;17(5):557-563. https://doi.org/10.3109/13697137.2014.946279
11. Gott M, Hinchliff S. Barriers to seeking treatment for sexual problems in primary care: a qualitative study with older people. Fam Pract. 2003;20(6):690-695. https://doi.org/10.1093/fampra/cmg612
12. Lindau ST, Schumm LP, Laumann EO, Levinson W, O'Muircheartaigh CA, Waite LJ. A study of sexuality and health among older adults in the United States. N Engl J Med. 2007;357(8):762-774. https://doi.org/10.1056/NEJMoa067423
13. Simon JA, Lukas VA. Distressing Sexual Function at Midlife: Unmet Needs, Practical Diagnoses, and Available Treatments. Obstet Gynecol. 2017;130(4):889-905. https://doi.org/10.1097/AOG.0000000000002268
14. Cuerva MJ, Gonzalez D, Canals M, et al. The sexual health approach in postmenopause: The five-minutes study. Maturitas. 2018;108:31-36. https://doi.org/10.1016/j.maturitas.2017.11.009
15. Dennerstein L, Dudley E, Burger H. Are changes in sexual functioning during midlife due to aging or menopause? Fertil Steril. 2001;76(3):456-460. https://doi.org/10.1016/S0015-0282(01)01978-1
16. Nappi RE, Lachowsky M. Menopause and sexuality: prevalence of symptoms and impact on quality of life. Maturitas. 2009;63(2):138-141. https://doi.org/10.1016/j.maturitas.2009.03.021
17. Shifren JL, Gass ML. NAMS Recommendations for Clinical Care of Midlife Women Working Group. The North American Menopause Society recommendations for clinical care of midlife women. Menopause. 2014;21(10):1038-1062. https://doi.org/10.1097/GME.0000000000000319
18. Cayan S, Akbay E, Bozlu M, Canpolat B, Acar D, Ulusoy E. The prevalence of female sexual dysfunction and potential risk factors that may impair sexual function in Turkish women. Urol Int. 2004;72(1):52-57. https://doi.org/10.1159/000075273

doi.org/10.11138/ego.4

19. Ayranci U, Orsal O, Orsal O, Arslan G, Emeksiz DF. Menopause status and attitudes in a Turkish midlife female population: an epidemiological study. BMC Womens Health. 2010;10:1. https://doi.org/10.1186/1472-6874-10-1

20. Hilditch JR, Lewis J, Peter A, et al. A menopause-specific quality of life questionnaire: development and psychometric properties. Maturitas. 2008;61(1-2):107-121. https://doi.org/10.1016/j.maturitas.2008.09.014

21. Huang AJ, Gregorich SE, Kuppermann M, et al. Day-to-Day Impact of Vaginal Aging questionnaire: a multidimensional measure of the impact of vaginal symptoms on functioning and well-being in postmenopausal women. Menopause. 2015;22(2):144-154. https://doi.org/10.1097/GME.0000000000000281

22. Nappi RE, Kingsberg S, Maamari R, Simon J. The CLOSER (CLarifying Vaginal Atrophy's Impact On SEx and Relationships) survey: implications of vaginal discomfort in postmenopausal women and in male partners. J Sex Med. 2013;10(9):2232-2241. https://doi.org/10.1111/jsm.12235

23. Kingsberg SA, Wysocki S, Magnus L, Krychman ML. Vulvar and vaginal atrophy in postmenopausal women: findings from the REVIVE (REal Women's VIews of Treatment Options for Menopausal Vaginal ChangEs) survey. J Sex Med. 2013;10(7):1790-1799. https://doi.org/10.1111/jsm.12190

24. Pinkerton JV, Bushmakin AG, Komm BS, Abraham L. Relationship between changes in vulvar-vaginal atrophy and changes in sexual functioning. Maturitas. 2017;100:57-63. https://doi.org/10.1016/j.maturitas.2017.03.315

25. Gibson CJ, Huang AJ, Larson JC, et al. Patient-centered change in the day-to-day impact of postmenopausal vaginal symptoms: results from a multicenter randomized trial. Am J Obstet Gynecol. 2020;223(1):99.e1-99.e9. https://doi.org/10.1016/j.ajog.2019.12.270

26. Ojha N, Bista KD, Bajracharya S, Katuwal N. Genitourinary Syndrome of Menopause among Postmenopausal Women in a Tertiary Care Centre: A Descriptive Cross-sectional Study. JNMA J Nepal Med Assoc. 2022;60(246):126-31. https://doi.org/10.31729/jnma.7237

27. Nappi RE, Nijland EA. Women's perception of sexuality around the menopause: outcomes of a European telephone survey. Eur J Obstet Gynecol Reprod Biol. 2008;137(1):10-16. https://doi.org/10.1016/j.ejogrb.2006.10.036

28. Nappi RE, Palacios S. Impact of vulvovaginal atrophy on sexual health and quality of life at postmenopause. Climacteric. 2014;17(1):3-9. https://doi.org/10.3109/13697137.2013.871696

29. Hinchliff S, Gott M. Seeking medical help for sexual concerns in mid- and later life: a review of the literature. J Sex Res. 2011;48(2-3):106-117. https://doi.org/10.1080/00224499.2010.548610

30. Biddle AK, West SL, D'Aloisio AA, Wheeler SB, Borisov NN, Thorp J. Hypoactive sexual desire disorder in postmenopausal women: quality of life and health burden. Value Health. 2009;12(5):763-772. https://doi.org/10.1111/j.1524-4733.2008.00483.x

31. Moral E, Delgado JL, Carmona F, et al. The impact of genitourinary syndrome of menopause on well-being, functioning, and quality of life in postmenopausal women. Menopause. 2018;25(12):1418-1423. https://doi.org/10.1097/GME.0000000000001148

32. Mastroianni J, Thompson JA, Shifren JL, Zuckerman AL, Pereira K. Improving the identification of genitourinary syndrome of menopause through the utilization of the Day-to-Day Impact of Vaginal Aging questionnaire. Menopause. 2020;27(11):1295-1301. https://doi.org/10.1097/GME.0000000000001668

33. Domoney C, Currie H, Panay N, Maamari R, Nappi RE. The CLOSER survey: impact of postmenopausal vaginal discomfort on women and male partners in the UK. Menopause Int. 2013;19(2):69-76. https://doi.org/10.1177/1754045313484139

34. Koseoglu S, Yoldemir T. The association between day-to-day impact of vaginal aging and female sexual function. Climacteric. 2026;29(2):248-255. https://doi.org/10.1080/13697137.2025.2548799

35. Dogan MC, Yoldemir T. The association between depression and anxiety with female sexual function in young women with polycystic ovary syndrome. J Sex Med. 2025;22(5):859-868. https://doi.org/10.1093/jsxmed/qdaf050

36. Yoldemir T, Garibova N. The association between depression and female sexual function in postmenopausal women. Climacteric. 2026;29(1):100-108. https://doi.org/10.1080/13697137.2025.2539850

 doi.org/10.11138/ego.4

37. Yoldemir T, Garibova N, Atasayan K. The association between sexual dysfunction and metabolic syndrome among Turkish postmenopausal women. Climacteric. 2019;22(5):472-477. https://doi.org/10.1080/13697137.2019.1580256

38. Koc Kulaksiz G, Yoldemir T. The associations of sleep parameters with sexual quality of life among postmenopausal women. Gynecol Endocrinol. 2026;42(1):2679796. doi: 10.1080/09513590.2026.2679796

39. Sobecki JN, Curlin FA, Rasinski KA, Lindau ST. What we don't talk about when we don't talk about sex: results of a national survey of U.S. obstetrician/gynecologists. J Sex Med. 2012;9(5):1285-1294. https://doi.org/10.1111/j.1743-6109.2012.02702.x

doi.org/10.11138/ego.4