

Impact of Genitourinary Syndrome of Menopause on Sexual Functioning and Overall Quality of Life of Egyptian Menopausal Women

Original
Article

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ABSTRACT

Aim: To estimate the prevalence of genitourinary syndrome of menopause and assess its effect on sexual functioning and overall quality of life of Egyptian postmenopausal women using the Day-to-Day Impact of Vaginal Aging questionnaire.

Methods: This cross-sectional study included menopausal women aged 40-75 years presenting to a gynecology outpatient clinic. Diagnosis of genitourinary syndrome of menopause required at least two symptoms or one symptom and one sign and was confirmed by clinical examination. Diagnosed women had their quality of life assessed using an Arabic-translated version of the Day-to-Day Impact of Vaginal Aging questionnaire. The questionnaire was clearly and comprehensively translated following the cross-cultural adaptation guidelines for quality-of-life measures.

Results: The prevalence of genitourinary syndrome of menopause was 89.9%. The most prevalent symptoms were vaginal dryness (91.1%), inadequate vaginal lubrication with sexual activity (87.9%), and dyspareunia (83.2%). The most prevalent signs were decreased moisture (92.1%), loss of vaginal rugae (81%), and decreased vaginal elasticity (64.9%). The mean overall score derived from the questionnaire was 1.22 denoting moderate impact on overall quality of life. The greatest impact of vaginal symptoms on quality of life affected sexual functioning. Longer duration of menopause (>5 years) was associated with worse impact on sexual functioning and emotional wellbeing domains of the questionnaire.

Conclusion: Genitourinary syndrome of menopause is highly prevalent among Egyptian postmenopausal women and its symptoms significantly impair their quality of life. The progressive nature of the condition emphasizes the need for early identification and proper management.

Key Words: Arabic, DIVA questionnaire, GSM, vulvovaginal atrophy, vaginal dryness.

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INTRODUCTION

Genitourinary syndrome of menopause (GSM) refers to a constellation of symptoms and signs resulting from the deleterious effect of estrogen deficiency during menopause on the vulva, vaginal, and urethra, and urinary bladder^[1]. Estrogen receptors are known to be richly expressed by the lower urinary tract and the entire female genital tract^[2]. Estrogen deprivation after menopause results in several anatomical and functional changes including decreased collagen, elastin, and hyaluronic acid; altered smooth muscle proliferation; loss of elasticity; loss of vascularity; thinning of epithelial lining; and decline in vaginal lactobacilli^[1,3].

GSM is a very common problem affecting up to 90% of menopausal women^[4]. About 93% of menopausal women suffer from at least one symptom related to urogenital atrophy^[4]. Vaginal dryness is the most common symptoms

reported by menopausal women; while vaginal mucosal dryness and loss of vaginal rugae are the most common findings on clinical examination^[5,6].

Vulvovaginal symptoms of menopause can be distressing enough to impair psychosocial and sexual aspects of women's life. For examples, vaginal symptoms have negative effects on relationships, impair sexual intimacy and lower women's self-esteem^[7]. Despite the detrimental effects of GSM symptoms on women's life, the majority of postmenopausal women show poor understanding of the disorder underlying their vaginal symptoms and its specific treatments^[7].

In Egypt, the mean age of menopause in Egypt is 46.7 years^[8]. Females above 50 years of age comprised about 16% of the total female population in Egypt in (2014)^[9].

Supposing that this ratio remains unchanged, and based on the United Nations population prospects^[10], it is expected that about 8 million women in Egypt are above 50 years of age in (2020). Furthermore, life expectancy of females in Egypt has risen remarkably from 67 in the nineties to 74 years in (2019)^[11]. The prevalence of menopause-related symptoms among Egyptian women is generally high^[8]; and the prevalence of good knowledge about menopause is low^[8,12]. These facts highlight the need for more efforts to increase awareness, research, and provide management options for women suffering from GSM.

The main objectives of the current study were to determine prevalence of genitourinary syndrome of menopause (GSM) among a cohort of Egyptian menopausal women and to assess the effect of GSM on sexual functioning and quality of life (QoL) using the Day-to-Day Impact of Vaginal Aging (DIVA) questionnaire.

PATIENTS AND METHODS

This descriptive cross-sectional study included postmenopausal women aged 40 to 75 years, presenting the gynecology outpatient clinic for any reason between January and September 2020. The research protocol was previously approved by the faculty ethical committee and the hospital administration board. Menopause was defined as amenorrhea for, at least, one year. Women were assessed for symptoms and signs of vulvovaginal atrophy and only women diagnosed with GSM were included in the study. Other eligibility criteria included ability to comprehend, read, and write and signing the informed consent. Exclusion criteria included history of previous genitourinary surgeries, including female circumcision and women currently on hormonal treatment.

The aim of the study is to assess the prevalence of GSM diagnosis, evaluate the frequency of different symptoms and signs of GSM and examine their impact on sexual functioning and overall quality of life of postmenopausal women.

After signing the informed consent, women attending the outpatient clinic and meeting the eligibility criteria were subjected to detailed history and physical examination for assessment of genital, urinary, or sexual features of GSM. GSM was diagnosed as the presence of at least two symptoms or one symptom and one sign, reported by the patient to be bothersome and are not attributable to other pathological conditions that can cause similar presentations^[1].

GSM symptoms explored in clinical history included vaginal dryness; burning, irritation, itching of the vulva or vagina; dyspareunia, diminished lubrication with sexual activity; postcoital bleeding; dysuria; and urinary frequency and urgency. Signs evaluated during pelvic examination were decreased moisture, decreased elasticity, tissue fragility/fissures/petechiae, loss of vaginal rugae, loss of hymeneal remnants, labia minora resorption, introital retraction,

urethral eversion or prolapse, and prominence of urethral meatus^[1,13].

The impact of GSM on wellbeing and quality of life was assessed using the Day-to-Day Impact of Vaginal Aging (DIVA) questionnaire^[14]. The questionnaire is originally published in English, and no validated Arabic version could be found after reviewing the literature. For the purpose of this research, Arabic translation of the DIVA questionnaire was done following the guidelines for cross-cultural adaptation of quality-of-life measures^[15,16]. Initially, two native Arabic-speaking professional English translators independently translated the DIVA questionnaire into Arabic. The agreed upon Arabic version was then back translated into English by two native English-speaking Arabic translators. An agreed upon English (back-translated) version was then compared to the original questionnaire and discrepancies revised and resolved by the authors. A review panel consisting of three expert gynecologists validated the final Arabic version in clear easily understood words devoid of ambiguity. A pilot study was then performed on 15 postmenopausal women who completed the Arabic version of the questionnaire and confirmed clarity and comprehensiveness of questions.

All women who met the GSM diagnostic criteria completed the DIVA questionnaire on paper during their visit to the clinic. The DIVA questionnaire is a self-administered questionnaire consisting of 23 questions covering four main domains: activities of daily living, emotional well-being, sexual functioning, and self-concept and body image. The sexual functioning domain has two versions, a short version that can be completed by all postmenopausal women, and a longer version (four additional questions) that is appropriate only for women who had sexual activity in the past 4 weeks. Each individual question/item is scored between 0 and 4. The total score for each domain was calculated by estimating the mean scores of its individual items. Higher scores indicate a greater impact of GSM on quality of life^[14].

Data analysis was performed using IBM SPSS Statistics for Windows, Version 21.0 (Armonk, NY: IBM Corp). Quantitative data was expressed as mean±SD while qualitative data were expressed as numbers and percentages. Chi Square and Student *t*-tests were used to test significance of difference for qualitative and quantitative variables, respectively. Statistical significance was judged at a probability value (*p*-value) of <5%.

RESULTS

A total of 365 women presenting to the Gynecology outpatient clinic were considered eligible for participation in the study. They were assessed for symptoms and signs of vulvovaginal atrophy. Only 328 women were diagnosed with GSM^[13]. Of these, only 316 women completed the DIVA questionnaire for assessment of the impact of GSM symptoms on their quality of life and were included in the final analysis (Figure 1).

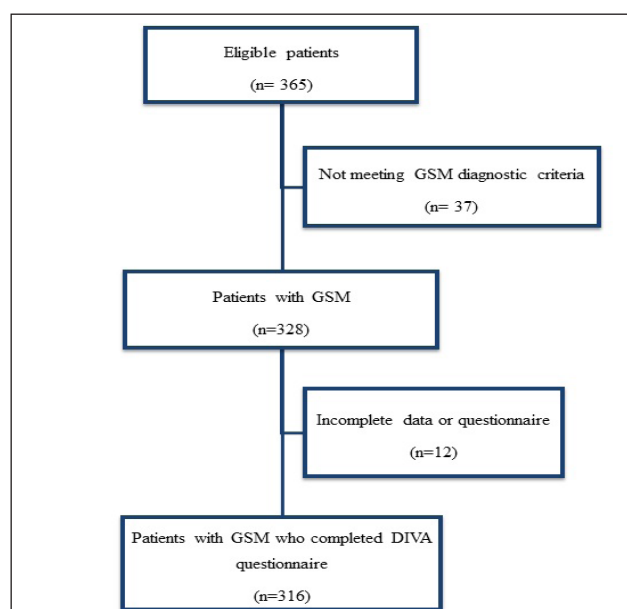


Fig. 1: Flowchart of the study population ($n=316$).

The mean age ($\pm$ SD) of the study population was 57.25 (± 6.25), distributed almost equally between urban and rural residence (51.9% and 48.1%, respectively). The duration of menopause ranged between 1 and 23 years with a mean of 9 years (± 4.85 SD). About 60% of women ($n=190$) were sexually active in the past 4 weeks before participation in the study. Baseline characteristics are presented in Table (1).

Table 1: Baseline characteristics of the study population with GSM ($n=316$):

Variable	Mean $\pm$ SD / Frequency	Range/Percent
Age	57.25 $\pm$ 6.25	41–75
Duration of menopause (years)	9.03 $\pm$ 4.82	1–13
Residency		
Rural	152	48.1%
Urban	164	51.9%
Occupation		
Housewife	138	43.7%
Retired	59	18.7%
Employed	119	37.6%
Sexual activity in past 4 weeks		
yes	190	60.1%
No	126	39.9%
BMI (kg/m ²)	23.4 $\pm$ 1.4	19-29

Out of 365 eligible women, 328 were diagnosed as GSM, indicating a prevalence of 89.9% among our population of postmenopausal women. GSM diagnosis was based on detailed history and confirmed by clinical gynecological examination. Among women diagnosed with GSM, the most prevalent symptom (Figure 2) was vaginal dryness (91.1%) followed by inadequate vaginal lubrication with sexual activity (87.9%) and dyspareunia (83.2%). On examination, the most prevalent signs (Figure 2) were decreased moisture (92.1%), loss of vaginal rugae (81%), and decreased vaginal elasticity (64.9%). No statistically significant difference was found in the prevalence of various GSM symptoms and signs based on the duration of menopause (< and >5 years).

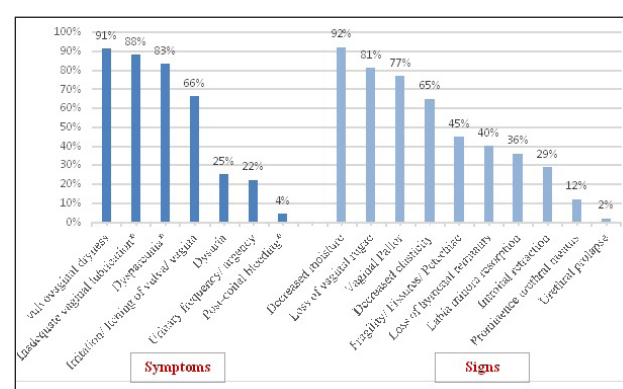


Fig. 2: Prevalence of symptoms and signs of genitourinary syndrome of menopause.

*: Calculated in women with sexual activity in the past month.

The mean scores of the five domain scales of the DIVA questionnaire (Table 2) ranged between 0.8 and 1.63, while the overall score of our population of postmenopausal women was 1.22. The “activities of daily living” domain scale yielded the lowest mean (0.8 ± 0.41) score followed by emotional wellbeing (0.92 ± 0.33). The highest mean scores were associated with sexual functioning scales denoting a greater impact of vaginal symptoms on sexual life of postmenopausal women. The 5-item sexual functioning scale (short version) generated a mean score of $1.56(\pm 0.51)$, while the 9-item sexual functioning scale, designed for sexually active women (long version), generated a mean score of 1.63 ± 0.47 .

When DIVA scores were analysed based on the time since menopause, longer duration of menopause (>5 years) was associated with significantly higher mean scores for the two versions of the sexual functioning scale and also for the “emotional wellbeing” scale. This suggests a progressive course of GSM with consequent worsening quality of life with time.

Table 2: Impact of vaginal symptoms on quality of life of postmenopausal women (DIVA scores) based on duration of menopause (mean±standard deviation):

	Total (n= 316)	Duration of menopause		P value
		≤5years (n= 83)	>5years (n= 233)	
Activities of daily living	0.80±0.41	0.79±0.43	0.81±0.40	0.224
Emotional well-being	0.9 ±0.33	0.87±0.24	0.97±0.39	0.043*
Sexual functioning short version	1.56±0.51	1.51±0.50	1.62±0.51	0.039*
Sexual functioning long version ^a	1.63±0.47	1.59±0.46	1.68±0.48	0.041*
Self-perception and body image	1.53±0.52	1.51±0.50	1.54±0.52	0.634
Overall	1.22±0.15	1.01±0.11	1.43±0.17	0.028*

*: Statistically significant result; a: Calculated in women with sexual activity in the past month.

DISCUSSION

The current study revealed that the prevalence of GSM confirmed by clinical gynecological examination among Egyptian postmenopausal women is 90%. These vaginal symptoms adversely affected their quality of life assessed using the DIVA questionnaire. The adverse effect on emotional and sexual aspects of life of postmenopausal women seems to be time-related with longer duration of menopause (>5 years) being associated with significantly worse quality of life scores.

The reported prevalence of GSM is highly variable among different studies^[4-6,17,18], with GSM symptoms affecting between 27% and 84% of menopausal women^[1]. This wide variation may be related to the absence of uniform diagnostic criteria for GSM with some studies depending on symptoms only, others requiring physical examination^[4], and fewer studies using additional tests, such as, vaginal pH^[5] and vaginal maturation index/value^[19]. Another reason is the heterogeneity in the characteristics of the study populations. For example, the prevalence of GSM symptoms increases progressively with increasing age^[5] and with time since menopause^[17]. Furthermore, GSM symptoms seem to be more prevalent among women visiting gynecology or menopause clinics compared to random cohorts^[4].

The clinical manifestations of GSM in our cohort of postmenopausal women generally agree with presentations reported in literature. Vaginal dryness has been the most commonly reported symptom of GSM with a prevalence ranging between 35%^[20] up to 100%^[4-6]. The next most common symptoms reported were dyspareunia and vulval/vaginal burning or itching^[4-6]. On physical examination, the most frequent findings were vaginal mucosal dryness, loss of vaginal rugae, and mucosal pallor^[5,6].

In the current study, we found no statistically significant difference in the prevalence of GSM symptoms and signs based on the duration of menopause. About 74% of our study population were menopausal for >5 years and all had natural menopause. However, in the AGATA

study, all physical signs of GSM showed significantly higher prevalence when evaluated 10 and 20 years after menopause, while symptoms showed variable trends^[17]. Similar findings were reported by the GENISSE study after 5 years of menopause^[6].

The possible explanation why the current study failed to identify difference based on the duration of menopause may be related to the cut-off value used or the characteristics of the study population. The progressive nature of the disease^[4] suggests that more obvious differences will be detected with advanced age compared to earlier years of menopause and that higher cut-off value may have yielded more significant results. Also, the specific nature of our cohort may play a role since they all share the same ethnicity. Furthermore, our cohort only included women presenting to a gynecology clinic; most of them presented for assessment or follow up of gynecologic disorders. This may explain the high prevalence of GSM symptoms/signs irrelevant of the duration of menopause.

The overall DIVA score for our GSM cohort was 1.2, with the highest scores reported for the sexual functioning domains followed by self-perception and body image, while the activities of daily living domain yielded the lowest score. The overall DIVA score from our cohort is higher than the total score (0.94) reported by Palacios *et al.*,^[4] Their score was significantly higher among symptomatic women with GSM confirmed by clinical examination compared to those where GSM was not confirmed (0.94 vs. 0.77, *P*-value<0.001). Scores of individual domains were also significantly higher among women with GSM confirmed by clinical examination. However, such difference was not significant with the activities-of-daily-living domain^[4]; the same domain that yielded the lowest score in our menopausal cohort.

The GENISSE study also reported similar findings with the greatest impact of menopausal symptoms affecting sexual functioning and minimal or slight impact on the other domains^[6].

Analysis of DIVA scores from our cohort based on the time since menopause revealed that the longer the duration of menopause, the greater the GSM impact on women's quality of life. The progressive nature of GSM has been confirmed in multiple studies. The prevalence as well as the severity of GSM symptoms and signs was found to increase with longer duration of menopause^[6,17]. Furthermore, a recent study examining the factors affecting quality of life of menopausal women concluded that the quality-of-life scores decreased (indicating poorer quality of life) with increased duration of menopause. Besides, the severity of menopausal symptoms assessed by the menopause rating scale (MRS) was also associated with lower quality of life scores^[21].

The present study is the first study to use an Arabic-translated version of the DIVA questionnaire to assess the impact of vaginal symptoms on women's quality of life during menopause. The translation process followed the guidelines for cross-cultural adaptation of quality-of-life measures and was tested to ensure clarity and comprehensiveness. Another strength of this study is that GSM diagnosis was not solely based on symptomatology and all women underwent physical examination for confirmation of diagnosis.

This study has some limitations as well. First, this was a cross-sectional study including only menopausal women with GSM and no control group was included. A comparison with a control group would have added greater significance to the study findings. Second, in addition to the ethical homogeneity, the study population was limited to women presenting to an outpatient gynecology clinic. Gynecology and menopause clinic visitors are known to show higher prevalence of GSM compared to random cohorts^[4]. Due to the specific nature of this study population, caution should be paid before generalisation of the study results to the entire Arabic menopausal population. Another weakness in the current study is that the DIVA questionnaire was originally developed to assess the impact of vaginal symptoms on quality of life of menopausal women. However, GSM includes vaginal as well as urinary and sexual symptoms and the presence of vaginal symptoms is not a prerequisite for the diagnosis of GSM. It is not clear whether DIVA questionnaire can be used to assess the impact of GSM in general on quality of life of menopausal women.

AUTHOR CONTRIBUTIONS

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Mohammed Abdelzaheer and Noha Al-Okda. The first draft of the manuscript was written by Mohammed Abdelzaheer. The final manuscript was edited by Noha Al-Okda. Manuscript revision and critical

review was performed by Amal Elshahat and Mariam Lotfy. All authors read and approved the final version of the manuscript.

CONCLUSION

Genitourinary syndrome of menopause is highly prevalent among Egyptian postmenopausal women and its symptoms significantly impair their quality of life. The progressive nature of the condition emphasizes the need for early identification and proper management.

ABBREVIATIONS

DIVA: Day-to-Day Impact of Vaginal Aging; BMI: Body Mass Index; GSM: Genitourinary Syndrome of Menopause; SD: Standard Deviation.

CONFLICT OF INTERESTS

There is no conflict of interests.

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