

Severe menopausal symptoms in middle-aged women are associated to female and male factors

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Abstract

Background The frequency and intensity of menopausal symptoms within a given population, as assessed by several tools, may vary and depend on several factors, such as age, menopausal status, chronic conditions and personal and partner socio-demographic profile.

Objective To determine the frequency and intensity of menopausal symptoms and related risk factors among middle-aged women.

Methods In this cross-sectional study a total of 404 women aged 40 to 59 years, visiting inpatients at the Enrique C. Sotomayor Gynecology and Obstetrics Hospital, Guayaquil, Ecuador, were requested to fill out the menopause rating scale (MRS) and a questionnaire containing personal and partner data.

Results Mean age of surveyed women ($n = 404$) was 48.2 ± 5.7 years, 85.1% had 12 or less years of schooling and 44.8% were postmenopausal. None was on hormonal therapy (HT) for the menopause or psychotropic drugs. Regarding their partner, erectile dysfunction was present in 23.8%, premature ejaculation in 21.2% and 43.5% abused

alcohol. The four most frequently found symptoms of those composing the MRS were muscle and joint problems (80%), depressive mood (73.5%), physical and mental exhaustion (71.3%) and irritability (68%). Mean total MRS score was 18 ± 10.6 (median 17) and for subscales: 7.2 ± 4.5 (somatic); 6.9 ± 4.8 (psychological) and 3.9 ± 3.4 (urogenital). Women presented severe scores in 53, 36.1, 48.3 and 49.8% for total MRS and somatic, psychological and urogenital subscales, respectively. After adjusting for confounding factors, logistic regression analysis determined that female higher parity and partner premature ejaculation increased the risk for presenting severe total MRS scores (impaired female quality of life), whereas women who had a positive perception of their health status were at decreased risk.

Conclusion In this middle-aged series psychological menopausal symptoms were the most frequent in which severity was associated to parity and partner sexual dysfunction.

Keywords Menopause · Symptoms · Menopause rating scale · Risk factors · Male factors · Premature ejaculation

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Introduction

The menopause exerts a negative impact on the lives of many women [21, 36, 42]. Menopausal symptoms relate to decreased estrogenic secretion (ovarian function decline), metabolic changes and co-morbidities [22, 49, 56], psychosocial behavioral and general health factors [8]. Frequency varies depending on the used tool and the epidemiological characteristics of the assessed population [33]. For instance, premenopausal women with vasomotor symptoms present more psychological and somatic symptoms and stress,

independent of vital events, family dysfunction or poor social support, hence increasing the risk for anxiety [10]. A recent Latin American Multicenter study found that the prevalence of women presenting moderate to severe menopausal symptoms (higher total MRS scorings) was rather high (>50%) in which socio-demographic, personal, and partner issues were associated risk factors [18].

Several factors predicting menopausal symptom severity (thus impaired quality of life [QoL]) have been described, such as age [44, 48], menopausal status [9, 41], hormone therapy (HT) use [28, 34], chronic conditions and co-morbidities [14, 22, 23, 49], ethnicity [16, 21, 36, 42, 51, 57] and female/partner socio-demographics [20, 21]. In addition, economical income and educational level have also been implicated in more severe menopausal symptoms [6, 13, 36, 38, 39]. However, there is also evidence supporting the opposite view, mainly that the menopausal transition exerts no negative effects when there is good health, partner positive feelings, physical activity and no work or family-related stress [24, 26, 45, 53]. In an open survey, the most important issues in women's lives were family relationships, health status, health of loved ones and finances [11].

The objective of the present research was to bring together biomedical and sociological aspects by determining the frequency and intensity of menopausal symptoms and risk factors among middle-aged women.

Methods

Participants

From April 2007 to June 2007 a cross-sectional study was carried out among middle-aged women at one of the associated teaching facilities of the Medical Faculty of the Universidad Católica de Guayaquil Ecuador (The Enrique C. Sotomayor Obstetrics and Gynecology Hospital), aimed to assess QoL and depressive symptoms. During the study period, a total of 420 healthy non-black Hispanic women aged 40 to 59 years, who were visiting inpatients at the different wards of the Hospital (visiting hours: 12 p.m. to 14 p.m./day), were requested to fill out the menopause rating scale (MRS) and a questionnaire containing personal and partner data. Sotomayor Hospital is a major referral center providing reproductive healthcare basically to low income women of Guayaquil and surrounding peripheral areas [46]. Hence, women participating in this study were also of low income. All participants were informed about the research, its purpose and the contents of the MRS. Women excluded from the study were those refusing participation or were incapable of understanding the items included in the questionnaire. This document presents data exclusively related to the QoL assessment branch of the

study (MRS data); data regarding depressive symptoms has been recently reported elsewhere [19]. Research protocol was reviewed and approved by the Research Committee of the Medical Faculty of the Universidad Católica.

Using EPI-INFO statistical software, a minimal sample of 382 subjects was calculated considering that the hospital covers for an estimated population of 50,000 women and assuming that 50% of the surveyed population would present menopausal symptoms [21] with an estimated 5% error and a 95% confidence interval.

General data questionnaire

Female data

Female data included: age (years), parity, menopausal status (pre, peri or postmenopausal), marital status, educational level (expressed in years), accessed healthcare system (free-minimal cost or paid), smoking habit (current, sometime and non-smoker), partner status, church attendance, history of sexual abuse, psychiatric consultation and the use of psychotropic drugs and HT/alternative treatments for the menopause. Women were asked about how they perceived their health status (and that of their partner). Those capable of performing daily routine activities were defined as healthy [12].

Partner data

Data related to partner was obtained from women and included: age (years), educational level (total years), health status, faithfulness, presence of alcoholism and sexual dysfunction (erectile dysfunction or premature ejaculation). Alcoholism was defined as a chronic conduct disorder manifested by repeated and excessive alcohol consumption which interferes with health, economic or social relationships. Men capable of performing daily routine activities were defined as healthy. Erectile dysfunction was defined as the persistent or recurrent incapacity to achieve or maintain an erection to allow satisfactory sexual intercourse [3], whereas premature ejaculation as the persistent or recurrent ejaculation after minimal sexual stimulation before, during or shortly after penetration or before the individual's desire to do so [4]. For surveyed women and their partners insufficient educational level was considered as 12 years or less of study [17].

The menopause rating scale (MRS)

The MRS is a menopause-specific health-related QoL instrument composed of 11 items which assess menopausal symptoms and is divided into three subscales: *a. somatic*: hot flushes, heart discomfort, sleeping problems and muscle

and joint problems (items 1–3 and 11, respectively); *b. psychological*: depressive mood, irritability, anxiety and physical and mental exhaustion (items 4–7, respectively); and *c. urogenital*: sexual problems, bladder problems and dryness of the vagina (items 8–10, respectively). Each item can be graded by the subject from 0 (not present) to 4 (1 = mild; 2 = moderate; 3 = severe; 4 = very severe). For a particular individual, the total score per each subscale is the sum of each graded item contained in that subscale. Total MRS score is the sum of the scores obtained for each subscale. Values equal or above 9 (somatic), 7 (psychological), 4 (urogenital) and 17 (total) were used to define severe scorings [2]. For the purpose of this research the Spanish version of the MRS was used [35], which has been validated in Chile [5] and previously used to assess QoL in Ecuador [21]. More details of the scale and scoring are reported elsewhere [1, 34].

Menopausal status definitions

In regard to the menopausal status the following definitions were used: premenopausal, women having regular menses; perimenopausal, those presenting irregularities >7 days from their normal cycle and postmenopausal, no more menses in the last 12 months [52]. Those with bilateral oophorectomy were considered as postmenopausal. For statistical purposes hysterectomized women were considered as a separate group.

Statistical analysis

Analysis was performed using EPI-INFO 2000 statistical software (Centers for Disease Control, Atlanta, GA, USA; WHO, Basel, Switzerland). Data are expressed as mean \pm standard deviations, medians and percentages. Items composing the MRS are also presented as frequencies (present or not). Risk factors for severe total MRS scorings (impaired QoL) were analyzed using logistic regression. Therefore, total MRS scorings, as continuous variables, were transformed into a categorical one, now considered as cases those exhibiting scores 17 or more (severe scores). Independent variables to be entered in the regression model related to surveyed women included: older age (≥ 48 , median), higher parity (≥ 4 , median), marital status (married or not), low schooling (≤ 12 years), postmenopausal status, smoking status, perceived health status, free healthcare access and if attending a psychiatrist and currently has a partner. Those related to partner were: age, low schooling, alcoholism, healthiness, faithfulness and sexual dysfunction (premature ejaculation or erectile dysfunction). Entry of variables (female and partner) into the model was considered with a 20% significance level and

Table 1 Characteristics of surveyed women and their partners ($n = 404$)

	<i>n</i> (%)
Female	
Married status ^a	155 (38.4)
Premenopausal	96 (23.8)
Perimenopausal	127 (31.4)
Postmenopausal	181 (44.8)
Bilateral oophorectomy	21 (5.2)
Hysterectomized	43 (10.6)
Low schooling (≤ 12 years)	344 (85.1)
Current smoking	26 (6.4)
Private health care access	15 (3.7)
Psychiatric consultation	39 (9.7%)
History of sexual abuse	15 (3.7)
Currently having a partner	306 (75.7)
Positive perception of their health status	352 (87.1)
Church assistance	291 (72)
Partner	<i>n</i> = 306
Low schooling (≤ 12 years)	270 (88.2)
Alcohol abuse	133 (43.5)
Healthiness	259 (84.6)
Erectile dysfunction	73 (23.8)
Premature ejaculation	65 (21.2)
Unfaithfulness	122 (39.9)

^a Those not married were either single (1.7%), divorced (19.8%), widowed (4.2%) or co-habited with partner (35.9%)

the back stepwise procedure performed. A *p* value of <0.05 was considered as statistically significant.

Results

A total of 16 women requested to participate were excluded due to refusal (3.8%, 16/420), leaving 404 who completely filled out the MRS and the general data questionnaire. Characteristics of surveyed women and their partners are shown in Table 1. Women had a mean age and educational level of 48.2 ± 5.7 (median 48) and 6.9 ± 3.9 years (median 6) respectively, with a median parity of 4; 85.1% had 12 or less years of schooling and 44.8% were postmenopausal. At the moment of the survey no participant was on HT/alternative therapy for the menopause or taking psychotropic drugs. A very low percentage of women (3.7%) accessed the private healthcare system. Regarding the partner ($n = 306$), mean age was 51.3 ± 9 years (median 50) with an average schooling of 7.5 ± 4.2 years (median 6). Erectile dysfunction was present in 23.8%, premature ejaculation in 21.2%, 43.5% abused alcohol and 39.9% were unfaithful (Table 1).

Table 2 Frequency of the symptoms composing the MRS and mean total and subscale scores

Subscale and symptoms	<i>n</i> = 404
Somatic	7.2 ± 4.5 ^a (median 7)
1. Hot flushes, sweating (%)	268 (66.3)
2. Heart discomfort (%)	228 (56.4)
3. Sleeping problems (%)	242 (59.9)
11. Muscle and joint problems (%)	323 (80)
Psychological	6.9 ± 4.8 (median 6)
4. Depressive mood (%)	297 (73.5)
5. Irritability (%)	275 (68)
6. Anxiety (%)	208 (51.5)
7. Physical and mental exhaustion (%)	288 (71.3)
Urogenital	3.9 ± 3.4 (median 3)
8. Sexual problems (%)	222 (55)
9. Bladder problems (%)	187 (46.3)
10. Vaginal dryness (%)	192 (47.5)
Total score	18 ± 10.6 (median 17)

^a Mean ± standard deviation

Frequency of menopausal symptoms (composing the MRS) and MRS scores (mean total and subscale) in this series are shown in Table 2. Mean total MRS score was 18 ± 10.6 (median 17) and for subscales: 7.2 ± 4.5 (somatic); 6.9 ± 4.8 (psychological) and 3.9 ± 3.4 (urogenital). Severe MRS scores were presented in 53.0% (*n* = 216, total score), 36.1% (*n* = 140, somatic subscale), 48.3% (*n* = 195, psychological subscale) and 49.8% (*n* = 201, urogenital subscale) of women. The four most frequently observed symptoms of those composing the MRS were muscle and joint problems (80%), depressive mood (73.5%), physical and mental exhaustion (71.3%) and irritability (68%).

After adjusting for confounding factors, logistic regression analysis determined that female higher parity and partner premature ejaculation increased the risk for presenting severe total MRS scores (impaired female QoL), whereas women who had a positive perception of their health status were at decreased risk (Table 3).

Discussion

Menopausal health status and QoL depend on a wide range of factors including decreased hormone levels, educational and socio-economic level, cultural, marital and familial aspects and co-morbidities. The menopause occurs at a time when many other negative factors converge in woman's life, often being misidentified as the cause of physical and mental debilitation rather than a coincidental occurrence. In addition, there are many misconceptions and myths about

Table 3 Factors associated to severe total MRS scores (impaired QoL: ≥ 17): logistic regression analysis

Factors	Odds ratio (CI 95%)	<i>p</i> value
Female		
Higher parity (≥4)	1.65 (1–2.7)	0.04
Positive perception of their health status	0.3 (0.1–0.6)	0.002
Male		
Partner premature ejaculation	2.1 (1.0–4.3)	0.03
Partner older age (≥50 years)	1.5 (0.9–2.5)	0.08

the menopause, some of them established and emphasized by the male dominant society [32, 47]. However, it may be perceived positively by many women, as a natural aging process.

Age at menopause onset and menopausal symptom frequency and severity may vary according to the study, methodological issues, race and the geographical area. To highlight this, age at menopause has been reported to occur earlier in Latin America [15] compared to the USA and Europe, fact related to lower socio-economic and educational level and the altitude of the geographical zone. For women of lower economical status dealing with the natural changes of the menopause may be especially difficult when compared to those of more privileged classes. Indeed, more than 50% of women of a perimenopausal Swedish cohort [45] showed a positive attitude toward the menopause. Their attitude was studied in a factorial analysis that included negative mood, vasomotor symptoms, decreased sexual desire and sleep-related symptoms among others. Many symptoms were significantly associated to psychological factors, life style and information related to the menopause. Therefore, positive feelings of the social environment may condition the type of attitude toward the menopause. Low income and poorly educated woman, however, may not have these possibilities.

Our surveyed population was a low income series as one can deduce by a high rate of low schooling (female and partner) and the low rate accessing to private healthcare. Lower socioeconomic status has been related to a longer duration of the climacteric syndrome or increased severity of menopausal symptoms [13, 37, 51]. The present series confirms our previous observations, using the Greene Climacteric Scale [51] and the MRS [21], pointing out increased menopausal symptoms among low income middle-aged women. As assessed with the MRS instrument we have previously described that poorly educated women presented higher somatic and psychological scorings [21]. Unfortunately, we still lack the comparison with a high income and educated reference group to confirm the hypothesis in the same socio-cultural background. Despite

this, the relationship between low income/education and increased menopausal symptoms seems plausible and requires further studies. Muscle and joint problems (80%), depressive mood (73.5%), physical and mental exhaustion (71.3%) and irritability (68%) were the most important menopausal complaints found in this series, which correlates with our previous observations for low income series [21, 51]. Mean MRS total scorings may vary according to the studied population, as one can refer to the international standards found in the MRS website [2], but in general are lower than the ones obtained within this series (18 ± 10.6) and to the recently reported for Latin America (11.3 ± 8.5) [18]. Important to mention is the fact that no women in the present series were on HT, a factor found to decrease severity of menopausal symptoms and improve QoL [18]. Factors predicting menopausal symptom severity have been described among Latin American populations [8, 22, 51]. Among these, important to mention are those related to the partner; thus this issue cannot be ruled out during the assessment of climacteric women. In this series, masculine sexual dysfunction was rather high (erectile dysfunction 23.8% and premature ejaculation 21.2%) with a high rate of those abusing alcohol (43.5%) and being unfaithful (39.9%). Our regression model determined that male premature ejaculation increased the risk for women presenting severe menopausal symptoms and thus impaired QoL (MRS total score ≥ 17). This is in correlation with the Multicentre Latin American REDLINC IV study [18], which also found male sexual dysfunction (erectile and premature ejaculation) as an independent risk factor for severe menopausal symptoms. Finding a plausible reason to explain such association seems difficult; however it could be possible that high alcohol abuse (a risk factor for male sexual dysfunction), in this low income series, be linked to marital problems, domestic violence and other related conditions that increase female anxiety and depressive symptoms [30, 49, 55]. This may be true if one takes into account that the most frequent menopausal symptom was in fact depressive mood. In this series, lack of communication in the relationship, partner role failure and sexual dissatisfaction could be aggravating factors, highlighting low partner affective expressions and quality of time devoted to women which can also increase menopausal symptoms [54].

In older women possible reasons for low levels of distress, despite a high prevalence of sexual problems, could include other significant medical problems, changes in partner status and sexual function and partner physical health problems. It is also known that loss of desire is influenced by psychological factors from both, individual and couple [50]. In Latin American societies, men are still the head of the family and responsible for all decisions. Most women depend solely on economical aspects but most refer incomplete overall satisfaction reflected as a poor QoL [6].

Contrary to what can be depicted in other societies, such as the European [29] or Anglo [7] in which social and labor gender differences have been reduced.

The present series also determined higher parity as a risk factor for severe menopausal symptoms. High parity is a trait found in low income and low educated series [25] and confirms our previous observations as a risk factor for increased menopausal symptoms [21, 51]. It could be possible that with higher parity many women near the menopause are still childbearing or taking care of young ones. This situation can indeed produce increased anxiety and depressive symptoms. Contrary to this, young wealthy and educated women from other latitudes take advantage of family planning methods to reduce the number of children and social distress and face the menopausal transition as a positive rather than a negative situation. Hence, as we have previously described, the perception and attitude toward the menopause and its transitional period, would differ from one female population to another in relation to female age, parity and hormonal status as well as to social, economical, cultural, educational and geographical factors [40]. Indeed there is evidence supporting the fact that the menopausal transition exerts no negative effects when there is good health, partner positive feelings, physical activity and no work or family-related stress [24, 26, 45, 53]. Health status is an important determinant of the severity of menopausal symptoms. In this sense the present study found that women who had a positive perception of their health status had decreased risk for severe menopausal symptoms. Middle-aged women who perform regular daily exercise report fewer somatic and psychological symptoms, whereas those being obese present more severe vasomotor symptoms [24]. It has been reported that abdominal obesity is a significant risk factor for presenting hot flushes, depression and muscle and joint pain [22]. High triglyceride levels were associated to higher rates of sweating and depression and basal hyperglycemia associated to higher rates of dry skin and changes in sexual desire [22]. Under this scenario promoting healthy lifestyles, diet and exercise among menopausal populations would not only have a positive impact on cardiovascular risk yet also improve QoL, as reducing weight would also indirectly ameliorate menopausal symptom intensity.

Differences in menopausal experiences are also related to the type of psychological adjustments found in their male partners and how they face the fear of aging. The decline in estrogens is not the sole responsible for psychological problems during the menopause [27, 43]. In our series, male sexual morbid conditions, infidelity and alcohol consumption reflect male discomfort that might negatively affect female health status and happiness. Moreover high parity, the consequence of low education and low contraceptive method utilization, may also have an important role.

Finally, as for the limitations of this study one can mention its cross-sectional design and not being able to assess body mass index (risk factor for increased menopausal symptoms) [14, 31]. Obtaining partner data from surveyed women may also be seen as a limitation, as second hand information, for several variables, may bear certain degree of inaccuracy; however, attempting to survey both partners at the same time may be a difficult and a time consuming task and was not the objective of this research. Despite this, it has its strengths, such as the specific surveyed low income population which has given us more insights regarding the correlation between low income, higher parity and male sexual dysfunctions and the severity of menopausal symptoms.

In conclusion, in this middle-aged series psychological menopausal symptoms were the most frequent in which severity was associated to parity and partner sexual dysfunction. Therefore, the menopausal transition requires male and family support and comprehension to reduce morbidity and to improve QoL. Besides improving adequate and specific menopausal healthcare services, social welfare and/or educational programs or support groups should be encouraged within our specific low income population.

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Conflict of interest statement None.

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