

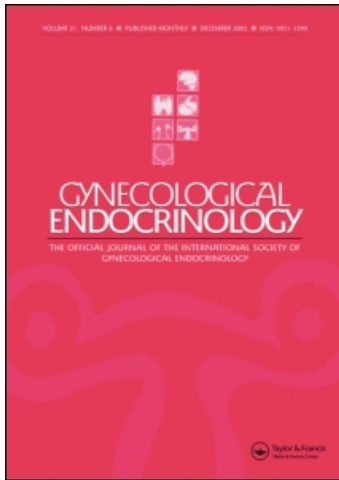
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MENOPAUSE

Quality of life impairment among postmenopausal women varies according to race

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Abstract

Background. Few studies have addressed the impact of menopausal symptom severity over quality of life (QoL) in Latin American women with different ethnics.

Objective. To assess menopausal symptom severity and the QoL among postmenopausal Colombian women with three different ethnicities.

Method. Data of healthy naturally occurring postmenopausal Hispanic, indigenous and black women aged 40–59 years who participated in a cross-sectional study filling out the Menopause Rating Scale (MRS) and a general questionnaire was analysed.

Results. A total of 579 women were included, 153 Hispanic, 295 indigenous and 131 Afro-descendent. Hispanic women had an average age of 55.3 ± 3.3 years. Indigenous and black women were less educated than the Hispanic ones (2.2 ± 1.8 and 4.6 ± 4.4 vs. 6.4 ± 3.5 years, $p < 0.0001$). Hispanic women displayed lower total MRS scores (better QoL) when compared to indigenous and black women. Urogenital scoring was worse among indigenous women compared to Hispanic and black women. Black women presented higher MRS psychological and somatic scorings than Hispanic and indigenous women. After adjusting for confounding factors, indigenous and black women continued to display a higher risk for impaired QoL, total MRS score > 16 (OR: 3.11, 95% CI: 1.30–7.44 and OR: 5.29, 95% CI: 2.52–11.10, respectively), which was significantly higher among indigenous women due to urogenital symptoms (OR: 102.75, 95% CI: 38.33–275.47) and black women due to psychological (OR: 6.58, 95% CI: 3.27–13.27) and somatic symptoms (OR: 3.88, 95% CI: 1.83–8.22).

Conclusion. In this postmenopausal Colombian series, menopausal symptoms in indigenous (urogenital) and black (somatic/psychological) women were more severe (impaired QoL) when compared to Hispanic ones.

Keywords: Postmenopause, quality of life, black race, indigenous, Hispanic, Menopause Rating Scale

Introduction

Biological changes taking place during the menopausal transition [1], not only the onset of menstrual cycle irregularities, but also include a diversity of manifestations such as vasomotor, psychological and urogenital symptoms that can profoundly affect female quality of life (QoL) [2]. Symptom intensity has been linked to bio-psycho and social aspects that can render improved or impaired QoL [3,4]. Indeed, age and socio-cultural status have been found to be independent risk factors for menopausal symptom severity [5].

Ethnicity is another factor affecting the prevalence and intensity of climacteric symptoms in different populations [6–9]. In a previous study, we have reported that Afro-descendant middle aged Colombian women display more severe menopausal symptoms (psychological and somatic) and thus impaired QoL when compared to Hispanic ones [10].

Besides black and Hispanic ethnicity, there are small groups of indigenous natives living in Colombia. Few studies have addressed the impact of the climacteric over QoL in native indigenous Latin American women. Hence, the objective of the

following study was to compare QoL and menopausal symptom severity among postmenopausal Colombian women with three different ethnicities: Hispanic, black and indigenous.

Methods

Study design

From November 2006 to January 2007, a cross-sectional study known as REDLINC IV was carried out in 18 cities of 12 Latin American countries aimed to assess QoL among women aged 40–59 years using the Menopause Rating Scale (MRS) and a questionnaire containing personal data [11]. Using the same methodology, Colombia participated in REDLINC IV through the CAVIMEC study (Quality of life in the menopause and Colombian ethnics), surveying healthy middle aged women of the Colombian Caribbean coast with three different ethnicities. Although indigenous and black women were exclusively part of the CAVIMEC study, the sample of Hispanic women was part of the REDLINC IV study [11]. The present study specifically analyzes data of those women who were naturally postmenopausal extracted from the CAVIMEC database.

Subjects

Hispanic participants are a heterogeneous group living in low-income urban sectors of Cartagena City, Colombia. These are neither black nor indigenous yet are basically mestizo with other multi-ethnic components of the major ethnical blending occurred for the last 500 years as a consequence of numerous and diverse migrations. Hence, ethnical diversity does not allow categorising these women as white or Caucasian.

Participating indigenous women are members of the Zenú tribe (father and mother indigenous). This group is circumscribed to the San Andrés de Sotavento indigenous area, naturally residing the rural areas of Vidales, Patio Bonito, Cruz del Guayabo and Carretal, which are part of the Tuchín Municipio of the Department of Córdoba, Colombia. These populations are ancestral settled native indigenous, non-blended with any other ethnicity and of low socio-economical background.

Afro-descendant participants (mother and father black) are natural residents of the Municipio of San Cayetano and nearby areas (Municipio de San Juan Nepomuceno) in the Department of Bolívar, Cartagena, Colombia. San Cayetano Municipio is a small partially isolated village, which is populated by approximately 4000 low-income black individuals who are direct descendents of African slaves who settled in the area during the colonial days.

Survey

Door-to-door visits (B.G, C.V) were carried out within these communities seeking women with the inclusion criteria. Once participants were identified, they were informed about the research, its purpose, the MRS and its content. After consenting to participate they filled out the general survey and the MRS. Women denying participation and/or incapable of understanding the items included in the questionnaire were excluded.

Personal data included in the questionnaire were as follows: age, marital status, parity, educational level (years), current smoking habit, menopausal status, age at menopause onset, years since menopause onset, if currently having a stable partner, and if currently using hormone therapy (HT) for the menopause. Postmenopausal status was defined as no more menses in the last 12 months [12]. Research protocol of the CAVIMEC study, as part of the Multicentre Latin American REDLINC IV QoL study, was reviewed and approved by the Bioethics Committee of the PROSAM Foundation, Santiago de Chile, Chile.

The Menopause Rating Scale

This is a specific menopause health-related QoL instrument composed of 11 items assessing menopausal symptoms divided into three subscales: (1) somatic (items 1–3 and 11, respectively); (2) psychological (items 4–7, respectively) and (3) urogenital (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. Each item of the MRS can be presented as a mean score and values above 8 (somatic), 6 (psychological), 3 (urogenital) and 16 (total) were defined as severe scorings [13]. The MRS scale has been translated to more than 27 languages, and for the purpose of this research the Spanish version of the MRS was used [14], which has been used to assess QoL in Ecuadorian and Chilean climacteric populations [5,15]. More details of the scale and its scoring are reported elsewhere [13,16].

Statistical analysis

Analysis was performed using EPI-INFO 2000 statistical software (Centers for Disease Control, Atlanta, GA; WHO, Basel, Switzerland). Data are expressed as mean \pm standard deviations and percentages. Chi-square calculation and student's *t*-test were used to compare the categorical and continuous

data, respectively. Logistic regression was used to assess race as a risk factor for impaired QoL (severe MRS scorings [total and subscale]) after adjusting for several confounding variables. Severe MRS scorings (total and subscale) were considered as the dependent variable and ethnicity, age, years since menopause onset, HT use, years of schooling and smoking habit as independent variables. Continuous variables were converted into dichotomic values using medians as cut-off points. Entry of variables into the regression model was considered with a 20% significance level and the stepwise procedure was applied. A p -value of <0.05 was considered as statistically significant.

Results

During the study period, a total of 1343 women fulfilling inclusion criteria were asked to participate in the study. Of these 86 (6.4%) were excluded as they denied participation or indicated as not adequately understanding the survey. Hence 1257 surveys were filled out, of which 42 (3.3%) were incomplete. Of the remaining 1215 women, 579 (47.7%) corresponded to postmenopausal status, 153 Hispanic, 295 indigenous and 131 black. Demographic characteristics of surveyed women are depicted in Table I. Hispanic women had an average age of 55.3 ± 3.3 years, mean schooling of 6.4 ± 3.5 years and mean parity of 4.2 ± 2.1 and 7.2 ± 3.7 years since onset of menopause. A 55.9% of them had one partner and 3.3% were on menopausal HT. Compared to Hispanics, indigenous women had a similar mean age, however a higher rate of partner co-habitation (92.5% vs. 22.9%, $p < 0.0001$), an older age at menopause onset (49.5 ± 3.0 vs. 48.3 ± 2.5 years, $p < 0.0001$), lower educational level (2.2 ± 1.8 vs. 6.4 ± 3.5 years, $p < 0.0001$) and less smoking habit (5.1% vs. 17.0%, $p < 0.0001$). Black women had a similar profile as Hispanic ones; however, younger (53.4 ± 3.3 vs. 55.3 ± 3.3 years, $p < 0.0001$) and with less schooling (4.6 ± 4.4 vs.

6.4 ± 3.5 years, $p < 0.0001$). HT use was low among all studied group with no statistical differences among them.

Total and subscale MRS scorings according to ethnicity are depicted in Table II. Hispanic women displayed better QoL (lower total MRS score) when compared to black and indigenous women (8.6 ± 5.7 vs. 13.7 ± 7.0 and 14.7 ± 2.4 , respectively, $p < 0.0001$). Black women presented higher MRS psychological and somatic scorings when compared to Hispanics and indigenous women (5.9 ± 2.9 vs. 2.7 ± 2.6 and 3.1 ± 1.6 , $p < 0.0001$ and 6.5 ± 3.3 vs. 4.6 ± 2.9 and 5.3 ± 1.7 , respectively, $p < 0.0001$). Urogenital scoring was higher among indigenous women in comparison to Hispanic and black women (6.2 ± 1.3 vs. 1.1 ± 1.9 and 1.3 ± 2.3 , respectively, $p < 0.0001$).

The percentage of postmenopausal women presenting with severe MRS scorings (total and subscale) according to ethnicity is depicted in Table III. Hispanic women presented a lower rate of severe MRS total scorings when compared to indigenous and black women (11.1 vs. 38.7% and 38.9%, respectively, $p < 0.0001$). Black women presented a higher rate of severe somatic and psychological MRS scorings when compared to Hispanic and indigenous ones (44.3 vs. 17.0% and 11.5% and 48.1 vs. 10.4% and 5.1%, respectively, $p < 0.0001$). Indigenous women presented with a higher rate of severe urogenital MRS scorings when compared to Hispanic and black women (92.2 vs. 12.4% and 15.3%, respectively, $p < 0.0001$).

After adjusting for age, years after menopause onset, HT use, years of schooling, parity and smoking habit, logistic regression analysis determined that indigenous and black women, compared to Hispanics, had an increased risk for impaired QoL (Total MRS score > 16) (OR: 3.11, 95% CI: 1.30–7.44; and OR: 5.29, 95% CI: 2.52–11.10, respectively). Indigenous women had an increased risk for compromised QoL because of urogenital symptoms (OR: 102.75, 95% CI: 38.33–275.47) and black

Table I. Socio-demographic characteristics of surveyed women according to ethnicity.

Parameters	Hispanic ($n = 153$)	Indigenous ($n = 295$)	Black ($n = 131$)
Age (years)	$55.3 \pm 3.3^*$	54.9 ± 3.4	$53.4 \pm 3.3^\ddagger$
Educational level (years)	6.4 ± 3.5	$2.2 \pm 1.8^\ddagger$	$4.6 \pm 4.4^\ddagger$
Married	51 (33.0)**	17 (5.8) [‡]	50 (38.2)
Co-habiting with partner	35 (22.9)	273 (92.5) [‡]	51 (38.9) [†]
Parity	4.2 ± 2.1	4.2 ± 2.0	3.9 ± 2.0
Age at menopause onset	48.3 ± 2.5	$49.5 \pm 3.0^\ddagger$	48.7 ± 2.4
Time since menopause (years)	7.2 ± 3.7	$5.3 \pm 3.1^\ddagger$	$4.7 \pm 3.1^\ddagger$
Current hormone therapy use	5 (3.3)	7 (2.3)	6 (4.6)
Current smoking	26 (17.0)	15 (5.1) [‡]	13 (9.9)

*Mean \pm standard deviation.

**Numbers in parenthesis are percentages.

$^\dagger p$ values compared to Hispanic group were $^\dagger p < 0.01$; $^\ddagger p < 0.0001$ otherwise non-significant.

Table II. Total and subscale MRS scoring according to ethnicity.

Subscale and symptoms	Score		
	Hispanic (<i>n</i> = 153)	Indigenous (<i>n</i> = 295)	Black (<i>n</i> = 131)
Somatic	4.6 ± 2.9*	5.3 ± 1.7‡	6.5 ± 3.3§
1. Hot flushes, sweating	1.3 ± 1.1	1.9 ± 0.3§	1.7 ± 1.3‡
2. Heart discomfort	0.6 ± 1.0	0.5 ± 0.7	1.0 ± 1.0‡
3. Sleeping problems	1.5 ± 1.0	0.5 ± 0.7§	1.4 ± 1.1
11. Muscle and joint problems	1.1 ± 1.1	2.3 ± 0.7§	2.2 ± 1.0§
Psychological	2.7 ± 2.6	3.1 ± 1.6**	5.9 ± 2.9§
4. Depressive mood	1.0 ± 1.0	0.3 ± 0.7§	1.5 ± 0.9§
5. Irritability	0.4 ± 0.8	0.9 ± 0.5§	1.3 ± 0.9§
6. Anxiety	0.3 ± 0.8	0.5 ± 0.7†	1.3 ± 0.9§
7. Physical and mental exhaustion	0.8 ± 1.0	1.2 ± 0.7§	1.6 ± 1.0§
Urogenital	1.1 ± 1.9	6.2 ± 1.3§	1.3 ± 2.3
8. Sexual problems	0.2 ± 0.6	1.7 ± 0.6§	0.3 ± 0.7
9. Bladder problems	0.5 ± 1.0	2.7 ± 0.6§	0.4 ± 1.0
10. Vaginal dryness	0.3 ± 0.8	1.7 ± 0.7§	0.4 ± 0.9
Total MRS score	8.6 ± 5.7	14.7 ± 2.4§	13.7 ± 7.0§

*Mean ± standard deviation.

Note: *p* values compared to Hispanic group were as follows: ***p* < 0.05, †*p* < 0.01, ‡*p* < 0.001, §*p* < 0.0001 otherwise non-significant.

Table III. Percentage of postmenopausal women with severe menopausal scorings (total and subscale) according to ethnicity.

MRS total and subscale	Hispanic (%)	Indigenous (%)	Black (%)
Somatic	17.0	11.5	44.3*
Psychological	10.4	5.1	48.1*
Urogenital	12.4	92.2*	15.3
Total	11.1*	38.7	38.9

**p* < 0.0001 compared to the other ethnics.

women due to psychological (OR: 6.58, 95% CI: 3.27–13.27) and somatic symptoms (OR: 3.88, 95% CI: 1.83–8.22).

Discussion

This study determined the ethnic differences concerning menopausal symptom intensity and QoL impairment. Postmenopausal Hispanic Colombian women, compared to black and indigenous ones, presented lower total MRS scorings. This could reflect, at least in part, a lesser negative impact of the climacteric among Hispanic women. In addition, this difference cannot be attributed to age and years of postmenopausal status (higher among Hispanics), well-known risk factors for QoL impairment [11]. In this series, total MRS score among Hispanic women was lower (8.6 ± 5.7 vs. 11.3 ± 8.5 , *p* < 0.0001) than that of the whole cohort of Latin American women recently determined by our Climacteric Research Network (REDLINC) [11] and the standards (10.4 ± 8.8) reported on the MRS Web site [17].

The differences observed between Hispanic, indigenous and black women found in this study can

be related to existing biological and/or socio-cultural factors found among them. Several investigations emphasise the importance of ethnicity in relation to the prevalence of climacteric symptoms. In one study carried out in 11 Asian countries, Tan et al. [18] determined that the prevalence of hot flashes varies among different Asian ethnical backgrounds. After controlling for confounding factors, Monterrosa et al. [10] have determined that Afro-descendant Colombian middle aged women are at higher risk for presenting more severe menopausal symptoms when compared to their Hispanic controls, clearly delineating black race as a risk factor. This observation is in correlation with a study carried by Randolph et al. [19] who demonstrates that Afro-American women display higher FSH levels compared to their Caucasian counterparts, suggesting a biological explanation for the increased risk of presenting more severe menopausal symptoms found among black women. Moreover, the Study of Women's Health Across the Nation (SWAN) has determined that increased FSH levels is a risk factor for more severe menopausal symptoms [20]. Socio-cultural factors such as education [21], diet [22] or physical activity [23] can also explain ethnical symptom intensity differences found in the present series. Although mentioned studies suggest that there are differences in the prevalence of menopausal symptoms in relation to race and that these could be associated to cultural and biological factors [24], methodological limitations and differences make comparisons difficult.

Indigenous women of this study had the most impaired QoL (highest total MRS score) of all. Our results are similar to those reported upon Maya Indians from Guatemala with high rates of menopausal symptoms [25,26] and to those reported by

Castelo-Branco et al. [27], among Movima indigenous women (Bolivia) aged 35–54 years, in which the prevalence of hot flashes was 45% [27]. However, they differ from other publications regarding American aborigines in which menopausal symptoms seem to be less intense. Webster in a literature review, regarding 13 studies related to North American Indians, indicates that the prevalence of hot flashes is lower when compared to Caucasian ones [28]. Another study carried out among 228 Maya women of Yucatan (Mexico) indicates that none of them present hot flashes or any other symptoms related to the menopause [29].

This study found that Hispanic women displayed lower total and subscale MRS scorings (less compromised QoL) when compared to indigenous and black ones. Black women presented impaired QoL in relation to higher somatic and psychological scorings. This was also confirmed after adjusting for several confounding factors (Table IV). Comparison of these results with the literature is difficult as data regarding black populations assessed with the MRS is lacking. Despite this, the SWAN [30], a US study carried out among 14,906 women (Caucasian, Afro-American, Hispanic, Japanese and Chinese) aged 40–55 years found that Caucasian women present higher rates of psychological symptoms when compared to black ones, situation that is contrary to our findings. However correlating with the fact that black women present higher rates of vasomotor symptoms. As already mentioned, methodological differences (i.e used tool for assessment of menopausal symptoms) from one study to another makes comparisons very difficult.

It was interesting to find that indigenous women have the most compromised QoL in relation to higher MRS urogenital scorings. This may correlate to a recent report indicating that in Quito, a city with a population of 78% autosomic indigenous [31], more than 90% of women aged 40–59 years, as assessed with the Female Sexual Function Index (FSFI), present sexual dysfunction in relation to vaginal dryness as its main risk factor [32]. On the

other hand, in Bolivia, climacteric Movima women also present a high prevalence of sexual dysfunction in relation to urogenital symptoms, the main menopausal complaint [27]. In this same sense, a multi-ethnic study carried out in the US among 16,065 women aged 40–55 years found that Hispanics, with increased Amerindian genetic background, present high rates of urinary incontinence and vaginal dryness when compared to Caucasian, Chinese, Japanese, and Afro-American ones [33]. One of the few studies carried out among native African women does not mention urogenital complaints among the most frequently reported menopausal symptoms [34].

Finally as for the limitations of this study one can mention its cross-sectional nature and due to the great diversity of the Latin American population [11], assessment of more socio-demographic data and body mass index would have been very useful. Because of this, generalisation of these results cannot be made to the general population of Colombia and/or to any other Latina American one. Not obtaining information regarding the use of alternatives to HT, which could possibly have an influence over menopausal symptoms, among the black and indigenous group can also be seen as a potential limitation. Herbal therapy for the treatment of climacteric symptoms has been mentioned in several Latin American studies [11,25,35]. However, their use seems to be less frequent than in other populations. Indeed, Bair et al. [36] in a multiethnic US study showed that alternative therapies are used in 60% by Caucasian and Japanese, 40% by Afro-American and only 20% by Hispanic women. Chedraui et al. [11] have determined that 7.6% of women from 12 Latin American countries use alternative therapies for the menopause. Finally, clinical efficacy of alternative therapies is controversial. A Cochrane review found no evidence of effectiveness of phytoestrogens for the alleviation of menopausal symptoms [37]. Another review on randomised clinical trials pointed out that although there is evidence that Black Cohosh may be beneficial in some women for menopausal symptoms, current evidence does not support the use of red clover, phytoestrogens, ginseng, evening primrose, dong quai and vitamin E [38]. Finally, a randomised clinical trial found that Black Cohosh, used alone or as part of a multibotanical product, with or without soy dietary changes, had no effects on the vaginal epithelium [39], an importantly affected site in the indigenous group of our series related to estrogenic deficiency. Despite these limitations, this is the first to compare QoL in a Latin American postmenopausal series with three different ethnics, hence providing a useful referral tool.

In conclusion, in this postmenopausal Colombian series, menopausal symptoms in indigenous (urogenital) and black (somatic/psychological) women

Table IV. Risk of impaired QoL (MRS) among postmenopausal indigenous and Black women compared to Hispanic women: logistic regression analysis*.

MRS total and subscale	Indigenous		Black	
	OR	CI 95%	OR	CI 95%
Somatic (>8)	0.43	0.13–1.44	3.88	1.83–8.22
Psychological (>6)	0.52	0.18–1.51	6.58	3.27–13.27
Urogenital (>3)	102.75	38.33–275.47	1.87	0.82–4.23
Total (>16)	3.11	1.30–7.44	5.29	2.52–11.10

*Note: Hispanic OR: 1.0; Risk adjusted for age, years after menopause onset, HT use, years of schooling, parity and smoking habit.

were more severe and thus QoL was more impaired when compared to Hispanic ones. These findings are most likely the result of differences in biological and socio-cultural interactions. More research in this regard is thus warranted.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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