# Measuring climacteric symptoms in an Ecuadorian population with the Greene Climacteric Scale

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## Abstract

*Objective:* Measure climacteric symptoms in a low socio-economic Ecuadorian population with the Greene Climacteric Scale and determine factors involved with higher scorings.

*Methods:* Women aged 40–65, non hormone therapy (HT) users, with intact uterus and ovaries, attending the Gynecologic Outpatient Service of the Enrique C. Sotomayor Obstetrics and Gynecology Hospital Guayaquil-Ecuador, were selected and asked to fill out the Greene Climacteric Scale.

*Results:* During the study period, 385 women met inclusion criteria and filled out the climacteric scale. Mean age of this sample was $47.6 \pm 5.5$ years and 36.6% were aged $\geq$50 years. Women were classified as: premenopausal 38.9%, perimenopausal 28.8% and postmenopausal 32.3%. The total Greene Climacteric score for postmenopausal was found to be higher than premenopausal total score ($18.78 \pm 8.11$ versus $16.31 \pm 7.62$, $p < 0.05$). Total, clusters and subclusters scorings maintained an increasing trend from one menopausal status to the next. The most frequently and intensive presenting symptoms of the 21 symptoms composing the scale were: difficulty in concentrating, feeling unhappy or distressed, headaches, and hot flashes ($n = 385$: 87, 82, 83.9 and 82%, anxiety and depression subclusters, and somatic and vasomotor clusters, respectively). Univariate analysis determined that age $\geq$47 years, parity $\geq$4 and schooling <12 years were associated to the risk for having a total Greene scoring of $\geq$18 (OR: [95% CI], 2.5[1.6–3.8]; 1.8[1.1–3]; 1.6[1–2.7], respectively, $p < 0.05$). Age $\geq$47 years was associated to increased rates of higher scorings in all clusters except for loss of sexual interest, which was contrarily increased together with vasomotor scoring in women with higher parity ($p < 0.05$). Women with educational level <12 years were related to higher somatic scorings. Logistic regression analysis confirmed all these associations except for parity, which was excluded as a risk factor for higher vasomotor scorings.

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*Conclusion:* In this specific population, climacteric symptoms presenting in all menopausal groups, as measured with the Greene Climacteric Scale, resulted to be higher than previously reported standards and age, parity and educational level were independent risk factors.

## 1. Introduction

Median age of natural menopause in Latin America varies (46.5–51.4 years), but in general has been reported to occur earlier than women in the USA and Europe, fact that has been related to lower socio-economic and educational level and the altitude of the geographical zone [1–4]. Therefore, a great number of women are experiencing the climacteric, transitional period from active reproductive state to an inactive one. This stage extends years into the postmenopause and does not only represent the cease of menses defined as menopause [5].

During the climacteric women are affected from a bio-psycho and social point of view, with compromise of their quality of life. Up to date several instruments have been designed to measure and assess symptoms during this stage [6–9]. Some however, as the Blatt menopausal index [6] as well as the Kupperman index [7], although widely used for this purpose, have recently been reassessed. Flaws in the original index, derived from clinical experience in New York in the 1950s, included: omitting vaginal dryness, loss of libido and demographic data; hot flashes beared a considerable weight, terms were ill defined, categories included overlapping scores, and most importantly, scores were summed without being based on independent factors [10]. In this sense, after examining seven factor analytic studies and coming to a consensus, a new standard scale for the measurement of climacteric symptoms was constructed, the so called Greene Climacteric Scale, which independently measures psychological, somatic and vasomotor symptoms [11].

The latter instrument has been used in selected population studies [12] and to measure quality of life and climacteric symptom improvement after estrogenic treatment [13–15]. In one study, the scale was used to assess climacteric symptoms and obtain normative data for the total score and subscales in a 504 female, mainly Caucasian, Dutch population. According to their findings, prevalence and intensity of climacteric symptoms, as expressed with the Greene Climacteric Scale, increase during the menopausal transition and stay high during the postmenopause [16]. Nevertheless, to the best of our knowledge, the instrument has never been used to assess and create normative data for climacteric symptoms in Latin American women. The objective of the present research was to measure climacteric symptoms in a low socio-economic Ecuadorian population with the Greene Climacteric Scale and determine risk factors involved with higher scorings.

## 2. Materials and methods

### 2.1. Subjects and sampling

This study was carried out after Institutional Review Board approval at the Gynecologic Outpatient Service of the Enrique C. Sotomayor Obstetrics and Gynecology Hospital of Guayaquil-Ecuador. This is one of four health care providing facilities managed by the "Junta de Beneficencia de Guayaquil" a private non profit organization whose mission is to provide partially subsidized services in healthcare and education basically to the low socio-economic population of all ages of Guayaquil [17]. The project was supported by the Foundation for Health and Well Being in the Climacteric "FUCLIM", entity sharing the Junta's similar mission: "the care of women of low socio-economic condition during their transition through the climacteric period".

The gynecologic outpatient service of the mentioned hospital is structured as five offices. In the year 2000, approximately 12,000 women aged >40 years were attended at the service. This population was used to determine a minimal sample size of 315 women, assuming a 30% postmenopausal prevalence with a 5% maximum acceptable error and a confidence interval of 95%. Women of low socio-economic status attending one of the mentioned gynecological office, aged 40–65, who