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Short communication

Is the Menopause Rating Scale accurate for diagnosing sexual dysfunction among climacteric women?

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ABSTRACT

Background: Although several tools have been designed to assess quality of life (QoL) among middle-aged women their capacity to specifically assess sexual dysfunction (SD) remains uncertain. Moreover, if SD impairs QoL within this population, then sexual assessment becomes a key issue.
Objectives: To evaluate the accuracy of the Menopause Rating Scale (MRS) in diagnosing SD among climacteric women.
Methods: In this cross-sectional study 370 women aged 40–59 years filled out the MRS and the Female Sexual Functioning Index (FSFI) simultaneously. SD among surveyed women was defined as those obtaining a total FSFI score of ≤26.55. A receiver-operator curve (ROC) was used to plot and measure the diagnostic accuracy of one MRS item (item 8, assessing sexual problems) using the FSFI total score as a gold standard.
Results: Mean age of surveyed women was 49.3 ± 5.8 years. A 56.5% of them were married, 44.3% were postmenopausal, 66.8% were sexually active and 57% had SD (FSFI total score ≤26.55). ROC curve determined a score ≥1 in the MRS item 8 as a cut-off value for discriminating women with SD (78% sensitivity and 62% specificity with an area below the curve of 0.70 Swett).
Conclusions: The MRS was moderately accurate for diagnosing SD among climacteric women. More research is warranted in this regard.

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1. Introduction

Quality of life (QoL) is a subjective concept modified by the cultural context in which one lives. Assessing QoL during the female climacteric is complex, as it encompasses changes occurring from a bio, psycho, sexual, social and familial point of view. Various tools have been designed to assess QoL during and after the menopause [1], one such tool is the Menopause Rating Scale (MRS) which measures the severity of menopausal symptoms found within three domains: the somatic, psychological and urogenital. Within this scale item 8 evaluates sexual problems (presence and intensity) [2].

Although assessment of female sexuality is also complex, the Female Sexual Function Index (FSFI) has demonstrated high reliability and consistency [3,4], capable of determining the presence of sexual dysfunction (SD) independent of female menopausal status. Although the MRS and other tools have been designed to assess QoL among middle-aged women their ability to specifically assess SD remains uncertain.

The objective of the following communication was to evaluate the accuracy of the MRS in discriminating SD among climacteric women.

2. Methods

2.1. Participants

This cross-sectional study was carried out from August 2007 to November 2007 among healthy women aged 40–59 years, accompanying patients being attended at three health care centers of Santiago, Chile: Hospital San José, Hospital Dipreca and the Hospital de Urgencias, Asistencia Pública. Pregnant women, and those who did not consent to participate or were incapable of understanding the items included in the questionnaire were excluded. Women fulfilling inclusion criteria were requested to simultaneously fill out the MRS and the FSFI questionnaires, after being informed about the research, its purpose, the MRS and FSFI and their content. After consenting to participate and upon filling out the questionnaire (if

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this was the case) they received additional support. This research is a sub-analysis of two multicenter Latin American initiatives, the so called REDLINC III and IV studies performed by the Collaborative Group for Research of the Climacteric in Latin America, intended to assess among middle-aged women sexuality and QoL, respectively [5,6]. Methodological aspects as well as the results of studies I and II have recently been published [7,8]. Additionally women were surveyed with an itemized questionnaire containing demographic and personal data. Age, parity, educational level (in years), menopausal status (pre, peri or post), if sexually active, use of hormone therapy (HT) and their marital status were variables used for analysis in this study. Research protocol of REDLINC studies III and IV were reviewed and approved by the Bioethics Committee of the PROSAM Foundation, Santiago de Chile, Chile.

2.2. Instruments

2.2.1. The Menopause Rating Scale (MRS)

The MRS is composed of 11 items assessing menopausal symptoms divided into three subscales: somatic, psychological and the urogenital. The latter subscale has three items (items 8–10, respectively): sexual problems, bladder problems and dryness of the vagina. Each item can be graded by the subject from 0 (not present) to 4 (1 = mild; 2 = moderate; 3 = severe; 4 = very severe). Scores obtained from item 8 (sexual problems, defined as changes in sexual desire, activity and satisfaction) were taken into account for statistical analysis [2]. 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 [9]. More details of the scale, punctuation and scoring is detailed elsewhere [10].

2.2.2. The Female Sexual Functioning Index (FSFI)

This instrument is composed of 19 questions grouped in 6 domains: desire, arousal, lubrication, orgasm, satisfaction and dyspareunia [3]. Each question has five or six alternatives to response, with a score varying from 0 to 5 in each question. The score obtained in each domain is multiplied by a constant factor. The total FSFI score is the sum of all the scores obtained in each domain. The higher the score the better sexuality. Subjects obtaining a total FSFI score of ≤26.55 were defined as having SD [11].

2.3. Statistical analysis

Statistical analysis was performed with the following programs: EPI-INFO 6.04 (Centers for Disease Control, Atlanta, GA, USA; WHO, Basel, Switzerland) and the Analyse-it [12]. Data are presented as mean ± standard deviations and percentages. Total FSFI was converted into dichotomic variables: those with SD (score ≤26.55) and those not (score > 26.55). Considering the FSFI as the gold standard a ROC (receiver-operator curve) was plotted in order to calculate a cut-off value for item 8 of the MRS and determine its accuracy in the diagnosis of SD. Confidence intervals are presented and a p-value of <0.05 was considered as statistically significant.

3. Results

During the study period a total of 412 women were invited to participate, of which 42 (10.2%) denied participation leaving 370 surveys for analysis. Mean age of the studied population was 49.3 ± 5.8 years, 50.5% having 12 or less years of schooling, 56.5% were married and 11.6% cohabited with their partner. A 6.2% were HT users and 44.3% of surveyed women were postmenopausal (12 months of amenorrhea), with 24.4% of these being hysterectomized.

Of the total of surveyed women, 66.8% (n = 247) were sexually active. Among those not, 50.4% (n = 62) had a stable partner. Of all surveyed women, 183 (49.5%) answered having sexual problems according to the MRS (score > 0); with no significant difference in the rate of women having sexual problems among those sexually active as compared to inactive ones (52.7% vs. 43.1%, p = 0.09).

Table 1
Statistical analysis of the ROC curve: accuracy of the MRS (item 8) in discriminating those with sexual dysfunction.

MRS: item 8 cut-off value	Sensitivity	Specificity
0	1.00 (0.96–1.00)[a]	0.00 (0.00–0.02)
1, 2, 3 and 4[b]	0.78 (0.68–0.86)	0.62 (0.54–0.69)

[a] Numbers in parenthesis are confidence intervals lower and upper values.
[b] Diagnostic accuracy when scores 1–4 were group as one.

Using the FSFI (score ≤26.55) the prevalence of SD among all surveyed women was found to be 57%. ROC curve determined a score ≥1 in the MRS item 8 as a cut-off value for discriminating women with SD (Table 1). This allowed re-grouping item 8 MRS scores as women with normal sexual function (score 0) and those with SD (scores 1–4). Accuracy of item 8 of the MRS in discriminating women with SD (FSFI as gold standard) was then calculated to be 78% (sensitivity) and 62% (specificity) with an area below the ROC curve of 0.70 Swett (95% CI 0.64–0.76) (Fig. 1).

4. Discussion

The climacteric imposes a negative impact on sexuality [13] and several other aspects of women's life which eventually impair QoL [14]. Various instruments have been designed to assess QoL [1] and female sexuality [15]. Assessment of female sexuality is not easy, moreover when it comes to defining dysfunction. Methodological issues involving sexuality studies are relatively common (i.e. majority include only sexually active women during analysis). In the present series all surveyed women (sexually active and inactive) were considered for statistical analysis. This was based on our previous observation that nearly one half of sexually inactive women aged 40–64 years have SD [16], hence if sexually inactive women (one-third in the present series) are eliminated from analysis, an important number of those with SD will also. Bearing this in mind, important to mention is that nearly 50% of sexually inactive women in this series had stable partners and despite not having sexual activity they responded having sexual problems with diverse severity (MRS item 8) and in a similar rate than those sexually active.

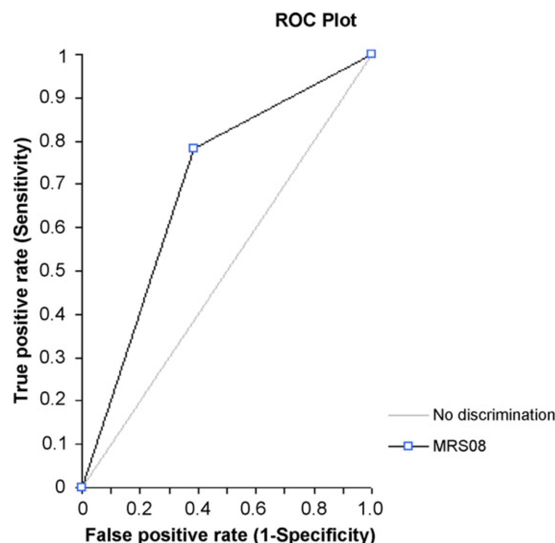

Fig. 1. Plotted ROC curve.

Several tools have been designed to simplify the assessment of sexual function such as the FSFI, a validated instrument demonstrating high reliability and consistency in the diagnosis of SD. Despite this, one must mention that although it may be used among climacteric populations [17,18] it is not menopause specific. The MRS, on the other hand, is a menopause specific instrument designed for the assessment of QoL through the rating of the severity of 11 menopausal items. Although it was not created for the assessment of sexuality one of its items (item 8) covers sexual problems [2]. All items (symptoms) of the MRS may be graded from 0 (not present) to 4 (very severe). Identifying women with SD among those graded 1–4 within item 8 becomes very subjective, moreover when it comes to definiting them. Although in a recent study a significant inverse linear correlation between the total MRS and FSFI scorings has been reported among middle-aged women simultaneously filling out the MRS and FSFI [19], accuracy of item 8 of the MRS in discriminating those with SD has not been performed. Hence, the present series, intended to evaluate the accuracy of the MRS (item 8) in discriminating women with SD, using the FSFI as a gold standard (score $\leq$26.55). In this sense our ROC curve determined that a MRS item 8 score of $\geq$1 (cut-off value capable of discriminating women with SD) is moderately accurate (78% sensitivity and 62% specificity). The utility of applying the MRS scale as a tool for sexual assessment among menopausal women is thus challenged. One limitation of this study, and of any other regarding sexuality, is trying to establish a gold standard for the diagnosis of SD. The present series used the FSFI and a total score cut-off value of 26.55 as the gold standard. Although we recognize it imposes a certain degree of limitation, important to mention is that this cut-off value in a cross-validation study demonstrated to correctly classify women with SD and those sexually functional with high reliability and consistency [11].

Despite the mentioned limitation to the best of our knowledge this is the first study intended to determine the accuracy of the MRS in discriminating women with SD. Future research must necessarily involve the construction and validation of a short easy to apply scale with sufficient power for detecting SD, designed exclusively for menopausal women.

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