Interpretability of the Modified Melasma Area and Severity Index (mMASI)

Melasma is a disorder of pigmentation commonly affecting women with darker skin types. Owing to the recalcitrant nature of melasma, more randomized controlled clinical trials of new treatment modalities are needed. These trials require precise categorization of disease severity to select appropriate patients for enrollment and determine response to treatment. The Melasma Area and Severity Index (MASI) is the most common outcome measure used for melasma studies, and was validated 20 years after it was first reported. This validation process eliminated homogeneity as a part of the MASI, resulting in the new modified MASI score (mMASI).

Calculation of the mMASI score is performed by rating darkness and area of involvement of 4 areas of the face. These figures are then inserted into an equation, resulting in the final mMASI score (Table). Despite the development of the mMASI score, a global severity score is also needed to determine optimal outcomes in clinical trials in melasma. Global scores are commonly used in clinical research studies and are intended to provide a clinically meaningful snapshot of disease severity that is easily understandable to physicians and patients. The melasma severity score (MSS) has been used in large trials as a global score. The MSS has 4 grades of severity (clear, mild, moderate, severe), with clear or mild as ideal outcomes in trials of patients with moderate to severe melasma. This is important to clinicians because treatments that show a significant reduction of moderate to severe melasma to clear or mild melasma are favored by patients. However, the correlation of the mMASI to MSS categories is unknown. We sought to stratify the mMASI into ranges correlating with mild, moderate, and severe melasma so that clinicians can better interpret melasma studies and investigators can identify patients with moderate to severe melasma by correlating MSS categories to mMASI scores.

One-way analysis of variance (ANOVA) was used to examine mMASI and MSS by MSS group. Assumptions of ANOVA (equal group variance and normality) were checked. When the ANOVA was significant, the Bonferroni post hoc test was performed. SPSS software (version 21) was used for analyses, and Sigma Plot (version 12.5) was used to produce the figures.

Results | Modified MASI. The MSS groups for mMASI were found to be significantly different (P < .001; partial η² = 0.42) (Figure). All pairwise Bonferroni post hoc tests were significant (P < .001); the means for mMASI were the highest for those with severe MSS and the lowest for those with mild MSS (means: mild, 3.8 [95% CI, 2.7–4.9]; moderate, 6.5 [95% CI, 5.8–7.2]; severe, 8.9 [95% CI, 8.0–9.8]).

The MSS groups for MAS were also found to be significantly different (P < .001; partial η² = 0.60) (Figure). All pairwise Bonferroni post hoc tests were significant (P < .001); the
means for MASI were highest for those with severe MSS and the lowest for those with mild MSS (means: mild, 6.9 [95% CI, 4.9-8.8]; moderate, 12.4 [95 CI, 11.1-13.7]; severe, 20.2 [95% CI, 18.6-21.9]).

Discussion | This study provides a framework that facilitates meaningful clinical interpretation of the numerical mMASI score. The ranges for mMASI provided herein correspond to global levels of severity using the MSS. Such categorization in MSS levels can assist clinicians in interpreting clinical trial data, severity of disease, and response to treatment. The mMASI is a simple, reliable validated tool that is a modification of the most commonly used outcome measure for melasma. This user-friendly tool can now be correlated with the newly proposed clinical ranges of severity presented in the Figure, which can be used to assist researchers in determining entry criteria for clinical trials for melasma and improvement of melasma with treatment.

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Patient Preferences During Skin Cancer Screening Examination

Although skin cancer screening through total-body skin examination (TBSE) may reduce morbidity or mortality from skin cancer, one potential harm of screening is that the nature of this examination may cause patient embarrassment. Among female patients undergoing colonoscopy and pelvic examinations there is a strong preference for a female physician.1,2 To our knowledge, the influence of physician sex on patient attitudes toward skin cancer screening has not been studied in a nonveteran population.3,4

Methods | Using an anonymous, cross-sectional survey (determined to be exempt from full board review by the institutional review boards of the University of Pittsburgh, University of Utah, and East Carolina University), adults (≥18 years) undergoing a TBSE at these 3 institutions were surveyed to determine their preferences of screening clinician’s sex and degree of disrobenment during TBSE. Univariate significance was tested using the t test or the χ² test.

Results | Of 483 invited participants, 443 completed some or all of the survey and 82 refused (response rate, 85.5%). Population demographics and preferences for examining clinician’s sex are shown (Table 1). Eighty-five women (33.7%) and 32 men (16.8%) had a preference for physician sex (P < .001), among whom 84 women (98.8%) and 12 men (37.5%) preferred a female physician (P < .001). Clinician sex preference correlated inversely with patient age (50% of women were <30 years; 24.2% of women were ≥70 years) but not with educational attainment or body mass index.

For the TBSE, women were more likely than men to prefer to leave undergarments in place (46.2% vs 39.7%; P = .05) and to not have their genitals examined (31.3% vs 12.5%; P < .001) (Table 2). However, women were more likely...