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Common outcome measures for AD lack adequate reporting of race, skin tone

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By [Doug Brunk](#)

FROM REVOLUTIONIZING AD 2021

Many validation studies of clinician- and patient-reported outcome measures for atopic dermatitis (AD) lack adequate reporting of race, ethnicity, and skin tone, according to results from a systematic review.



Trisha Kaundinya

“AD is associated with considerable heterogeneity across different races and skin tones,” presenting study author [Trisha Kaundinya](#) <<https://aspiringdocsdiaries.org/author/trisha-kaundinya/>> said at the Revolutionizing Atopic Dermatitis symposium. “Compared with lighter skin tones, darker skin tones more commonly have diffuse xerosis, Dennis-Morgan lines, hyperlinearity of the palms, periorbital dark circles, lichenification, and prurigo nodularis. This heterogeneity can be challenging to assess in clinical trials and in practice.”

The Harmonizing Outcome Measures for Eczema ([HOME](#) <<http://www.homeforeczema.org/>>) group has selected several scales by international consensus. For clinical trials, the group recommends the Patient-Oriented Eczema Measure (POEM), Eczema Area and Severity Index (EASI), and Dermatology Life Quality Index (DLQI). In clinical practice, the HOME group recommends the POEM, Patient-Oriented Scoring Atopic Dermatitis (PO-SCORAD), and the Numeric Rating Scale (NRS)-itch measures. “The psychometric validity and reliability of these outcome measures have undergone robust investigation before, but the validity and reliability of these outcome measures remains uncertain across different races, ethnicities, and skin tones,” Ms. Kaundinya said.

[Jonathan Silverberg, MD, PhD](#) <<https://www.gwdocs.com/find-a-doctor/jonathan-silverberg-md-phd-mph/>> , associate professor of dermatology at George Washington University, Washington, in collaboration with [Andrew F. Alexis, MD, MPH](#) <<https://weillcornell.org/andrew-alexis-md-mph>> , vice-chair for diversity and inclusion for the department of dermatology at Weill-Cornell Medicine, New York, and [Jacob P. Thyssen, MD, PhD](#) <<https://www.researchgate.net/profile/Jacob-Thyssen>> , at the University of Copenhagen, Denmark, sought to examine reporting of race, ethnicity, and skin tone, and to compare results across these groups

from studies of psychometric properties for outcome measures in AD. Under the mentorship of Dr. Silverberg, Ms. Kaundinya, a medical student at Northwestern University, Chicago, and her research associates conducted a systematic review that searched PubMed and Embase and identified 165 relevant published studies of 41,146 individuals.



Dr. Jonathan I. Silverberg

Of the individuals participating in these 165 studies, 73% had an unspecified racial background, 18% were White, 4% were Asian, 2% were Black, 2% were Hispanic, 1% were multiracial/other, and the remainder were American Indian/Alaskan Native. Only 55 of the studies (33%) reported the distribution of race or ethnicity, 5 (3%) reported the distribution of skin tone, and 16 (10%) reported psychometric differences in patients with different races, ethnicities, or skin tones. In addition, only 5 of 113 (4%) studies that did not report race, ethnicity, or skin tone–based differences acknowledged absence of stratification as a limitation.

Of note, significant differential item functioning was found between race subgroups for one or more items of the PO-SCORAD, the Patient-Reported Outcomes Measurement Information System (PROMIS) Itch Questionnaire (PIQ <[https://www.jaad.org/article/S0190-9622\(19\)33149-4/fulltext](https://www.jaad.org/article/S0190-9622(19)33149-4/fulltext)>) Short Forms, POEM, DLQI, Hospital Anxiety and Depression Scale (HADS), Itchy Quality of Life (ItchyQOL) scale, 5-dimensions (5D) itch scale, Short Form (SF)-12, and NRS-itch. “Correlations of the POEM with the Investigator’s Global Assessment (IGA) differed the most between skin of color and lighter skin,” Ms. Kaundinya said.

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“The POEM did seem to correlate similarly with the DLQI and the EASI in both white and nonwhite participants, which may indicate why this trifecta of instruments is recommended by the HOME group. One study found that substituting the erythema component of the EASI scale with greyness for darker skin, in which erythema is more challenging to assess, did not significantly improve the reliability of EASI. This indicates that further research is needed to investigate how EASI can be modified to perform better in darker skin tones.”

She pointed out that some studies of clinician-reported outcome measures were underpowered to detect meaningful differences between patient subgroups. “There were also insufficient data to perform meta-regression of differences between patient subgroups,” she said. “Overall, future studies are needed to determine whether outcome measures recommended by the HOME and other tools perform equally well across diverse patient populations. This systematic review indicates significant reporting and knowledge gaps for psychometric properties of outcome measures by race, ethnicity, or skin tone in AD.”

Ms. Kaundinya reported having no relevant financial disclosures. Dr. Silverberg, the study’s senior author, is a

consultant to and/or an advisory board member for several pharmaceutical companies. He is also a speaker for Regeneron and Sanofi and has received a grant from Galderma.

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