Evaluating Skin Color Diversity in the Validation of Scar Assessment Tools

Chirag Goel, BA, Stuti Garg, BA, Tokoya Williams, MD, Iulianna Taritsa, BA, Rou Wan, BS, Raiven Harris, BS, Robert D. Galiano, MD, FACS

Department of Surgery, Division of Plastic Surgery, Northwestern University Feinberg School of Medicine

Background
- Across scar studies, there is a lack of dark-skinned individuals included
- Darker-skinned patients have a predisposition for keloid formation, altered pigmentation, and poorer quality-of-life
- Currently, more than 10 scar assessment scales exist in literature to date. The first validated scar assessment scale presently known as the Vancouver Scar Scale (VSS), was introduced in 1990
- There is a need for patients-of-color to be included in scar scale development and validation
- In this study, we evaluate the racial diversity of patients included in the validation of scar assessment scales

Methods
- A systematic review was conducted for articles reporting on the validation of a scar assessment tool; racial, ethnic, and Fitzpatrick skin type (FST) data was extracted
- Search terms: (scar) AND ((scale) OR (assessment)) AND (validation)
- Articles were excluded if they were:
  - not a validation study
  - the tool was not for scar assessment
  - reported on a medical device for scar assessment
  - to validate the translation of a scar assessment tool into another language

Results
- 15 studies were included
  - 13 did not include FST V or VI patients
  - 11 did not report FST
- mVSS
  - 7% and 13% of patients were categorized as Fitzpatrick’s type V-VI
- mPOAS
  - 83% of patients were Caucasian, 14% were African, and 3% were Arabian
- SCAR-Q
  - Fitzpatrick type I 1.6%, type II 18.9%, type III 43.5%, type IV 20.9%, and type V or VI 4.5%

Conclusions
- In this study, only the modified VSS, modified POSAS, and SCAR-Q provided information regarding FST or race. The percentage of dark-skinned patients was as much as 20% and as little as 4.5%
- Given the susceptibility of darker-skinned individuals to have poorer scar outcomes, it is critical to include patients-of-color in the very assessment tools that determine their scar prognosis
- Inclusion of patients-of-color in scar scale development will improve assessment of scar pathology and better inform scar care decision-making