

The Effect of Ethnicity on Scar Perception: The Perspectives of African American and White Patients

Stuti Garg, BA¹, Abbas Hassan, MD¹, Anooj Patel, MD¹, Deima Koko, BS¹, Jeffrey Varghese, BS¹, Marco Ellis, MD, FACS¹, Gregory Dumanian, MD, FACS¹, John Kim, MD, FACS¹, Robert Galiano, MD, FACS¹

¹ Northwestern University Feinberg School of Medicine Division of Plastic & Reconstructive Surgery

Background

Scars often have significant morbidity and negatively impacts psychological, functional, and cosmetic outcomes as well as the overall quality of life.¹ As demonstrated by the propensity of patients with a family history or with darker skin to develop more aggressive scars, genetic factors can be driving factors in scars development.²⁻⁴ Patient-reported outcome measurements are used to understand the negative impact of scarring from the patient's perspective. However, there remains a need to study scarring impact on the patient's career and sexual well-being as well as how perception varies with ethnicity.

Objective

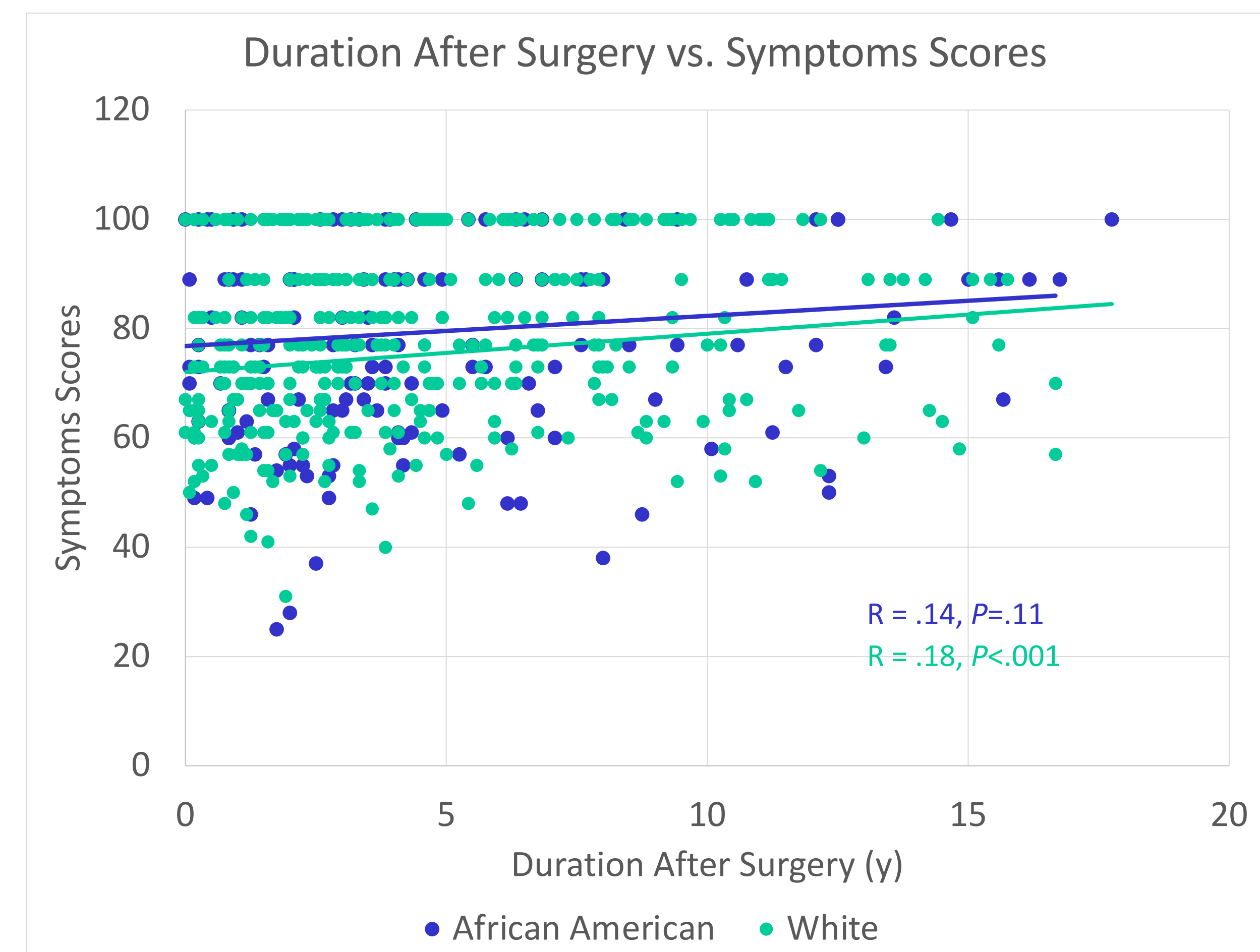
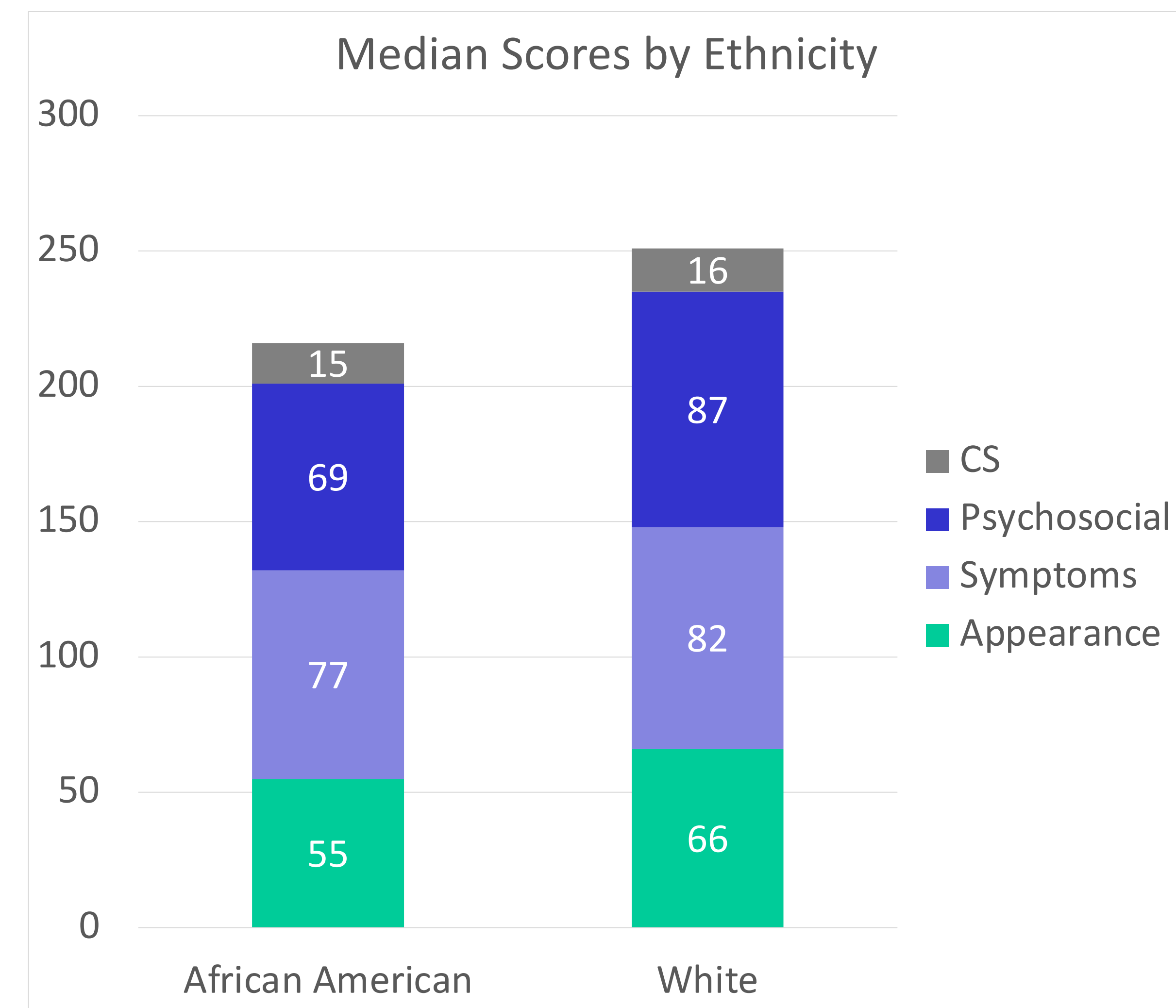
The objective of this study is to evaluate African American and White patients' perception of their scar's impact on symptoms, appearance, psychosocial health, career, and sexual well-being using validated assessment tools

Methods

A total of 675 abdominoplasty and breast surgery patients from four providers completed the SCAR-Q and Career/Sexual Well-Being (CS) scales via phone or email. The SCAR-Q is a validated 29-question scale that assesses appearances, symptoms, and psychosocial impact of scars.⁵ A previously established framework of scar themes generated from patient interview discussions informed the creation of the 4-question CS scale.⁶ Higher scores on both scales indicates a better outcome.

Patient Demographic Information

Procedure	African American	White	Total
Abdominoplasty	54	187	241
Breast Surgery	101	333	434
Breast Reduction	86	178	264
Mastectomy	8	92	100
Breast Augmentation	1	23	24
Breast Lift	4	27	31
Breast Reconstruction	2	13	15
Total	155	520	675



Results

Of 675 respondents, 77.0% were White, and 23.0% were African American. White patients scored significantly higher on the SCAR-Q (232 ± 79 vs. 203 ± 116), appearance (66 ± 26 vs. 55 ± 29), and CS (16 ± 2 vs. 15 ± 5) scales than African American patients ($P < .001$, $P < .001$, $P < .001$ respectively). African American patients scored significantly worse on questions regarding their scar color and scar pain than White patients ($P < .001$, $P < .001$ respectively). For White patients, duration after surgery was weakly positively correlated with symptoms scale score ($r = 0.18$, $P < .001$), appearance scale scores ($r = 0.14$; $P = .004$), and overall SCAR-Q scores ($r = .14$, $P = .004$). However, there was no significant correlation between duration after surgery and symptoms or appearance scores for African American patients ($P = .11$, $P = .37$). There was no significant correlation between patient age and SCAR-Q score or time after surgery and psychosocial scores.

Conclusions

African American patients are more likely to have lower perceptions of their scarring appearance, symptoms, psychosocial impact, career impact, and sexual well-being impact than White patients. Scar appearance and symptoms are less likely to improve over time for African American patients. Assessment of scar perception at multiple follow-ups would allow for the comparison of scar perception improvement among various ethnicities. This study highlights the need to address patient ethnicity when considering further follow-up, counseling, or other measures to enhance scar perception.

References

1. Ngaage M, Agius M. The Psychology of Scars: A Mini-Review. *Psychiatr Danub.* Nov 2018;30(Suppl 7):633-638.
2. Miller MC, Nanchahal J. Advances in the modulation of cutaneous wound healing and scarring. *BioDrugs.* 2005;19(6):363-81. doi:10.2165/00063030-200519060-00004
3. Liu W, Huang X, Liang X, et al. Identification of Key Modules and Hub Genes of Keloids with Weighted Gene Coexpression Network Analysis. *Plast Reconstr Surg.* 2017/02//2017;139(2):376-390. doi:10.1097/prs.0000000000003014
4. Hellwege JN, Russell SB, Williams SM, Edwards TL, Velez Edwards DR. Gene-based evaluation of low-frequency variation and genetically-predicted gene expression impacting risk of keloid formation. *Ann Hum Genet.* Jul 2018;82(4):206-215. doi:10.1111/ahg.12245
5. Klassen AF, Ziolkowski N, Mundy LR, et al. Development of a New Patient-reported Outcome Instrument to Evaluate Treatments for Scars: The SCAR-Q. *Plast Reconstr Surg Glob Open.* Apr 2018;6(4):e1672. doi:10.1097/gox.0000000000001672
6. Hsieh JCM-C, A. L.; Joshi, C. J.; Zielinski, E.; Galiano, R. D. Daily quality-of-life impact of scars: an interview-based foundational study of patient-reported themes. *PRS-GO.* 2021