



Racial and ethnic variations in one-year clinical and patient-reported outcomes following breast reconstruction



Nicholas L. Berlin^a, Adeyiza O. Momoh^b, Ji Qi^a, Jennifer B. Hamill^a, Hyungjin M. Kim^{b, c}, Andrea L. Pusic^d, Edwin G. Wilkins^{a, *}

^a Section of Plastic Surgery, University of Michigan, Ann Arbor, MI, USA

^b Center for Statistical Consultation and Research, University of Michigan, Ann Arbor, MI, USA

^c Department of Biostatistics, University of Michigan, Ann Arbor, MI, USA

^d Division of Plastic and Reconstructive Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY, USA

ARTICLE INFO

Article history:

Received 29 September 2016

Received in revised form

5 February 2017

Accepted 5 February 2017

Keywords:

Breast reconstruction

Breast cancer

Outcomes research

Socioeconomic factors

Public health

Patient-reported outcomes

ABSTRACT

Background: Existing studies evaluating racial and ethnic disparities focus on describing differences in procedure type and the proportion of women who undergo reconstruction following mastectomy. This study seeks to examine racial and ethnic variations in clinical and patient-reported outcomes (PROs) following breast reconstruction.

Methods: The Mastectomy Reconstruction Outcomes Consortium is an 11 center, prospective cohort study collecting clinical and PROs following autologous and implant-based breast reconstruction. Mixed-effects regression models, weighted to adjust for non-response, were performed to evaluate outcomes at one-year postoperatively.

Results: The cohort included 2703 women who underwent breast reconstruction. In multivariable models, Hispanic or Latina patients were less likely to experience any complications and major complications. Black or African-American women reported greater improvements in psychosocial and sexual well-being.

Conclusions: Despite differences in pertinent clinical and socioeconomic variables, racial and ethnic minorities experienced equivalent or better outcomes. These findings provide reassurance in the context of numerous racial and ethnic health disparities and build upon our understanding of the delivery of surgical care to women with or at risk for developing breast cancer.

© 2017 Elsevier Inc. All rights reserved.

1. Introduction

Racial and ethnic differences in health care are well documented. The Institute of Medicine (IOM) reviewed health care disparities for racial and ethnic minorities in the landmark report, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*.¹ According to the IOM, however, the existence of disparities is still largely unrecognized. Public and professional

awareness is an essential starting point for efforts at addressing this issue. In the context of a health care system increasingly focused on equitable and patient-centered care, identifying and eliminating racial and ethnic disparities has become a national priority.

Breast cancer is the most common non-skin cancer among women in the United States.² Approximately 1 in 8 women (12%) in the United States will develop invasive breast cancer during their lifetimes.² Despite the growing use of breast conservation as the primary therapy for breast cancer, mastectomy remains a common treatment option. For patients who undergo mastectomy, the impact on body image, psychosocial well-being and quality of life can be devastating.³ Many patients choose to undergo breast reconstruction following mastectomy to decrease the adverse impact of mastectomy on psychosocial functioning. There are well-

Abbreviations: Mastectomy Reconstruction Outcomes Consortium, MROC; Patient Reported Outcome, PRO; Patient-Reported Outcomes Measurement Information System, PROMIS; Body Mass Index, BMI; Odds ratio, OR; Confidence Interval, CI.

* Corresponding author.

E-mail address: ewilkins@med.umich.edu (E.G. Wilkins).

documented psychological, social, emotional, and functional benefits, including improved psychological health, self-esteem, sexuality, body image and reduced concerns of cancer recurrence.^{4–6} Since the passage of the Women's Health and Cancer Rights Act in 1998, a mandate for health insurance coverage of breast reconstruction, the proportion of women who choose to undergo breast reconstruction has dramatically increased.^{7,8} In 2015, approximately 106,338 women underwent breast reconstruction in the United States.⁹

Previous studies have focused on describing racial and ethnic differences in the proportion of women who chose to undergo breast reconstruction following mastectomy despite mandated insurance coverage of breast reconstruction.^{10,11} Other studies have assessed the role of sociodemographic factors in the type of breast reconstruction chosen.^{12–16} These studies have begun to elucidate psychosocial and language barriers related to race and ethnicity that influence access to and utilization of these procedures. However, postoperative outcomes following these procedures based upon race and ethnicity remain understudied. Furthermore, previous studies on this topic have not assessed patient-reported outcomes (PROs) following breast reconstruction. In the context of nationwide focus on patient-centered care and the known psychosocial benefits of breast reconstruction, PROs are now considered fundamental outcome measures following these procedures.^{17,18} The objectives of this study were to identify and assess racial and ethnic variations in clinical and patient-reported outcomes following breast reconstruction.

2. Materials and methods

2.1. Data source and analytic cohort

The Mastectomy Reconstruction Outcomes Consortium (MROC) is a multi-institutional prospective cohort study utilizing data collected from a network of 11 leading medical centers in the United States and Canada to compare long-term outcomes for eight commonly used options for breast reconstruction following mastectomy. Data was collected from a variety of sources, including structured surveys and medical records. All women at least 18 years of age who underwent breast reconstruction following mastectomy between years 2012–2015 at any of the participating sites, including patients undergoing immediate or delayed procedures and unilateral or bilateral reconstruction, were eligible for recruitment into the study. Women who underwent prophylactic mastectomy, without a prior history of breast cancer, were also eligible to participate. Patients receiving breast reconstruction following breast augmentation, mastopexy (breast lift), or breast reduction, as well as patients undergoing secondary reconstruction following previously failed attempts were excluded from the study due to possible confounding from the prior operations. The population from which participants were recruited reflected the racial and ethnic diversity of the medical centers' service areas, which included urban, rural, academic, and private practice settings.

2.2. Independent variables

Baseline socio-demographic information, including race, ethnicity, age, highest level of education attained, and annual household income were collected from study participants through self-reported structured, web-based surveys administered in the preoperative period. Clinical information, including surgery date, histologic diagnosis, date(s) and sides(s) of mastectomy, date and type of radiation therapy, body mass index, smoking status, and

medical comorbidities were collected from electronic medical records. Type of breast reconstruction was categorized as 1) implant-based, procedures, 2) latissimus dorsi myocutaneous flaps, and 3) autologous breast reconstructions, which included all methods of abdominal-based breast reconstruction (free tissue transfer and pedicled myocutaneous flaps) as well as superior and inferior gluteal artery perforator flap procedures.

2.3. Race and ethnicity

For analytic purposes, patient race and ethnicity was categorized into White (non-Hispanic and non-Latina), Black or African-American (non-Hispanic and non-Latina), Hispanic or Latina, or Other (including Asian, Native American/Alaska Native, Native Hawaiian or Other Pacific Islander). A total of seven patients were excluded from the analysis due to missing race and ethnicity information.

2.4. Study outcomes

The primary outcomes of interest included clinical outcomes and PROs at one-year following breast reconstruction. Clinical outcomes were defined separately as the occurrence of any complication, at least one major complication, or breast reconstruction failure. Major complications were defined as complications requiring unplanned readmission or reoperation. Reconstructive failure was defined as a complication resulting in removal of an implant or flap. Measures of PROs included four domains of the BREAST-Q Reconstructive Module (satisfaction with breasts, psychosocial well-being, physical well-being, and sexual well-being). The BREAST-Q is a validated PRO instrument used to study the impact and effectiveness of breast reconstruction.¹⁷ The Patient Reported Outcomes Measurement Information System (PROMIS-29) subscale for physical functioning, also chosen for analysis, is a self-administered survey developed under the NIH Roadmap for Medical Research for use in a wide range of disease conditions.¹⁹

2.5. Statistical analysis

Clinical and demographic characteristics across race and ethnicity groups were compared using ANOVA for continuous variables and chi-square tests for categorical variables. For clinical outcomes, any complication, major complication and reconstructive failure at one year postoperatively were each summarized as counts and percentages by race and ethnicity group. Separate mixed-effects logistic regression models were performed, with the dependent variable as the presence or absence of each clinical outcome. The models included race and ethnicity group as the primary predictor, with White (non-Hispanic and non-Latina) as the reference category. The models also included clinical and demographic characteristics as covariates, and random intercepts for centers (hospitals) to account for between-center variability. Adjusted odds ratios (ORs) with 95% confidence intervals (CIs) and *p*-values from the models were reported.

Mean PRO scores at baseline and at one year postoperatively were reported by race and ethnicity group. To further compare one-year PROs across different race and ethnicity groups, separate mixed-effects regression models were employed for each PRO measure. Each model was adjusted for baseline value of the corresponding outcome variable and adjusted for significant clinical and demographic characteristics. The model also included centers (hospitals) as random intercepts to account for between-center variability. To reduce potential bias from differential non-response rates, analyses were weighted by the inverse-of-the-probability-of-response. The probability-of-response was

Download English Version:

<https://daneshyari.com/en/article/5731026>

Download Persian Version:

<https://daneshyari.com/article/5731026>

[Daneshyari.com](https://daneshyari.com)