Patankar AG, Sudah SY, Michel CR, Constantinescu DS, Menendez ME, Ruskin JB, Shah A. Low Rates of Reporting and Analyzing Race and Ethnicity in Hand Surgery Randomized Controlled Trials: A Systematic Review. J Orthopedics & Orthopedic Surg. 2022;3(2):26-39

Journal of Orthopedics and Orthopedic Surgery

Systematic Review Open Access

Low Rates of Reporting and Analyzing Race and Ethnicity in Hand Surgery Randomized Controlled Trials: A Systematic Review

Aneesh G. Patankar[1]*, Suleiman Y. Sudah[2], Christopher R. Michel[2], David S. Constantinescu[3], Mariano E. Menendez[4], Jeremy B. Ruskin[5], Ajul Shah[6]

[1]Rutgers, Robert Wood Johnson Medical School, Piscataway, NJ, USA
[2]Department of Orthopedics, Monmouth Medical Center, Long Branch, NJ, USA
[3]Department of Orthopedic Surgery, University of Miami, Miami, FL, USA
[4]Midwest Orthopaedics at Rush, Rush University, Chicago, IL, USA
[5]Central Jersey Hand Surgery, Eatontown, NJ, USA
[6]The Center for Hand and Upper Extremity Surgery, Institute for Advanced Reconstruction, Shrewsbury, NJ, USA

Article Info

Article Notes
Received: April 16, 2022
Accepted: July 05, 2022

***Correspondence:**
*Dr. Aneesh G. Patankar, Rutgers, Robert Wood Johnson Medical School, Piscataway, NJ, USA;
Email: ap1350@rwjms.rutgers.edu

©2022 Patankar AG. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License.

Keywords
Reporting
Analyzing
Demographics
Race
Ethnicity
Randomized controlled trials
Orthopaedic hand surgery

Abstract

Purpose: Sociodemographic factors have been shown to influence musculoskeletal health. However, little is known regarding the frequency of reporting and analysis of certain sociodemographic variables (e.g., age, sex, height, weight, body mass index (BMI), race, and ethnicity) in randomized clinical trials (RCTs) pertaining to hand surgery. The purpose of this study was to assess the rate of reporting and analysis of these variables in RCTs published in the *Journal of Hand Surgery* (JHS).

Methods: A systematic review was conducted of RCTs published in JHS between 2015 and 2021. For each study, we determined whether the following sociodemographic variables were reported and/or analyzed: age, sex, height, weight, BMI, race, and ethnicity. Frequencies were reported by year and as a cumulative total. Studies were evaluated using the Cochrane risk-of-bias tool.

Results: A total of 45 RCTs met inclusion criteria, with about half (53.3%) originating from the United States. Age (97.8%) and sex (91.1%) were the most frequently reported sociodemographic variables, followed by race (17.8%), BMI (11.1%), and ethnicity (8.9%). Age (17.8%) was the most frequently analyzed variable, followed by sex (13.3%), and race (4.4%); the remaining variables were not analyzed in any study.

Conclusions: While age and sex are reported at a high rate, only about 1 in 4 RCTs published in JHS report either race or ethnicity. All sociodemographic variables were infrequently included as part of statistical analysis. The significance of these findings should be recognized and used to interpret and enhance the methodology of future RCTs.

Introduction

The influence of race and ethnicity on healthcare disparity is well-recognized within the medical community and has become a growing focus within the orthopedic literature[1-7]. The influence of race and ethnicity on postoperative outcomes following joint and spine surgery has been particularly elucidated. Adelani et al. retrospectively reviewed postoperative complications in 585,269 patients who underwent hip and knee arthroplasty. Within this study, Black patients experienced increased rates of surgical site infection (SSI), deep vein thrombosis (DVT), pulmonary embolism (PE), myocardial infarction, stroke, and death, even when controlling for medical comorbidities[5]. In a separate retrospective review of 4,803 patients, Sanford et al. found that Native American race was found to be an independent risk factor for SSI following cervical

fusion and decompression laminectomy, whereas African American race was found to be an independent risk factor for SSI and PE after decompression laminectomy and DVT after lumbar fusion[2]. Alosh et al. screened over 100 million hospital discharge records from 1992 and 2005 and found 965,600 anterior cervical spine procedures. The authors similarly found that minorities had lower rates of surgery and that Black patients had significantly higher odds of dying while in the hospital[6]. Racial and ethnic differences in outcomes, decision-making, and other aspects in hand surgery itself further illustrate the health disparities within the field[8-13].

Despite racial differences in health outcomes within the orthopedic literature, many randomized controlled trials (RCTs) fail to report race and ethnicity[14,15]. Several reasons for this observation have been postulated, such as the belief that reporting these factors is not clinically relevant and a lack of emphasis to report by medical journals[15]. However, according to the Consolidated Standards of Reporting Trials (CONSORT) guidelines for transparent reporting of clinical trials, all sociodemographic information should be provided in the initial description of a study population[16]. Similarly, the National Institutes of Health (NIH) guidelines require that minority patients be included in NIH-funded research and suggest that race and ethnicity be collected even in cases where previous research has demonstrated no effect of these variables on the outcomes of an intervention[15].

It is important to identify racial and ethnic differences within orthopedic studies so that further analyses may elucidate the underlying causes of differential health outcomes. While some studies have assessed the reporting and analysis of sociodemographic variables across orthopedic subspecialty areas, none have focused on hand surgery specifically. The *Journal of Hand Surgery (American Volume)* (JHS) is a premier journal in this field with the largest number of RCTs on PubMed search relative to similar journals. For this reason, the purpose of our study was to assess the rate of reporting and analysis of sociodemographic variables (e.g., age, sex, height, weight, body mass index (BMI), race, and ethnicity) in RCTs published in JHS from 2015 to 2021. We hypothesize that age and sex will be reported and analyzed at the highest frequency compared to the other sociodemographic variables.

Methods

Search Strategy

The Preferred Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines were used to conduct this systematic review[17] (Supplementary Table 1). This review was not prospectively registered. An advanced search on PubMed was conducted to identify all RCTs published in JHS from 2015 to 2021. Search terms included "randomized control trial" and "randomized controlled trial." Search results were screened to confirm use of an RCT design.

Inclusion and Exclusion Criteria

All RCTs published in JHS between 2015 and 2021 on human subjects were included. We chose this span of years to reflect continuity with previous orthopedic studies on this topic, which included data from 2015 to their respective dates of publication[14,15]. Longitudinal analysis and previous follow-ups of clinical trials published prior to 2015 were included. Exclusion criteria were non-RCTs, basic science studies, meeting abstracts, responses to authors, letters to the editor, and withdrawn studies.

Data Collection

Eligible studies were assessed independently by two reviewers to determine whether the following sociodemographic variables were reported and/or analyzed: age, sex, height, weight, BMI, race, and ethnicity. Any discrepancy was resolved by consensus agreement with a senior author.

Data collection was based on the methodology reported by Griffin et al.[14]. A variable was considered reported if the mean or median with or without standard deviation/quartiles was provided for continuous variables (age, height, weight, BMI) or if a percentage of the study population was provided for categorical variables (sex, race, ethnicity). Comparing baseline demographics between treatment groups or between treatment and control groups was considered reporting but not analysis. A statement that all patients were of one race or ethnicity was considered adequate for reporting.

A variable was considered analyzed if statistical analysis was performed on the variable relative to the study's outcomes of interest. The evaluation of outcomes based on sociodemographic subgroups was considered analysis. If a variable was found not to be analyzed throughout the included papers, this indicated that no figure or table was included with the variable as part of a sub-analysis, no mention of an analysis with respect to the variable was found throughout the Methods or other sections within the study, nor were any conclusions drawn regarding the sociodemographic variable's impact on analyzed outcomes.

Race was defined using the following categories: White, African-American/Black, Asian/Pacific Islander, Native American, or other/unknown race. Ethnicity, which is defined as a subset of race, was defined as Hispanic or non-Hispanic[18]. Sex and gender were assessed as the same variable for the purpose of this study, as distinction between these terms is often interchangeable within the literature[19]. Each study's country of origin was also recorded, with the institution of the senior author considered the country of origin when authors from multiple countries contributed to a study.

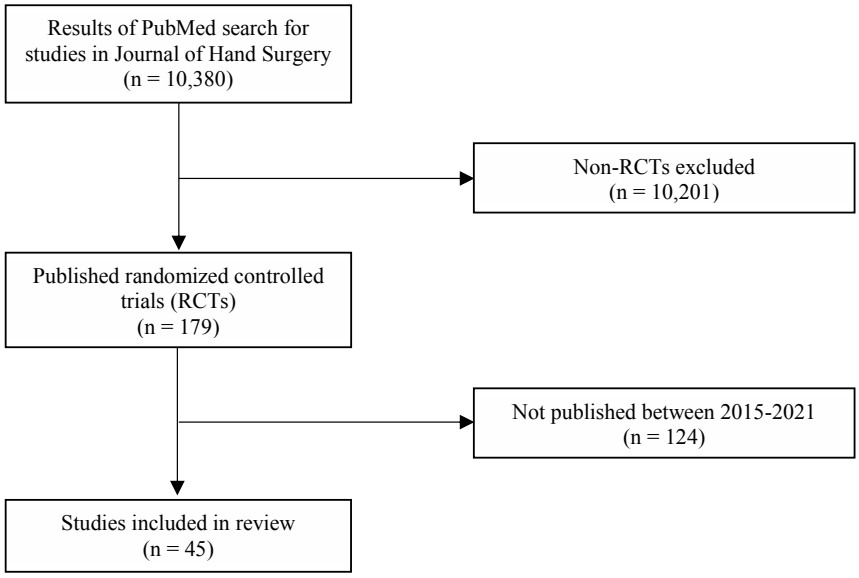

Figure 1: Flowchart of article inclusion

Risk-of-Bias Assessment

The revised Cochrane risk-of-bias tool for randomized trials (RoB 2.0) was used to assess each included study as "high risk," "low risk," or with "some concerns," of bias. This tool evaluates the methodology of each study by scoring the following categories: randomization process, deviations from intended interventions, missing outcome data, measurement of the outcome, selection of the reported result, and overall bias[20]. Studies were assessed based on adherence to intention-to-treat analysis as this statistical method allows for optimal comparison between treatment groups and minimizes sources of bias[21].

Results

Search Results

A total of 10,380 studies published in JHS were initially screened. 179 RCTs were identified, of which 45 met inclusion criteria and were included in the final review (Figure 1). Studies originating from 15 countries were included, the most common of which were the United States (53.3%), Denmark (6.7%), and Sweden (6.7%) (Figure 2). Most RCTs included in this review were published in 2017 (26.7%) and fewest were published in 2016 (4.4%) (Figure 3). Supplementary Table 2 compiles all included studies and illustrates data collected from each article.

Reporting of Sociodemographic Variables

Of the 45 included studies, 44 reported age (97.8%), 41 reported sex (91.1%), eight reported race (17.8%), five reported BMI (11.1%), four reported ethnicity (8.9%), one reported height (2.2%), and one reported weight (2.2%) (Figure 4).

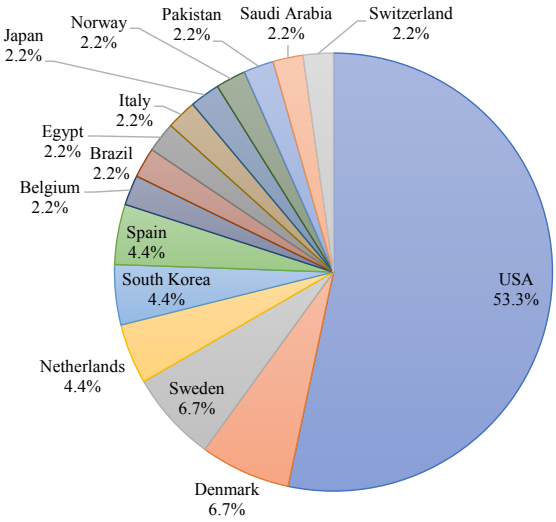

Figure 2: Country of origin for included RCTs

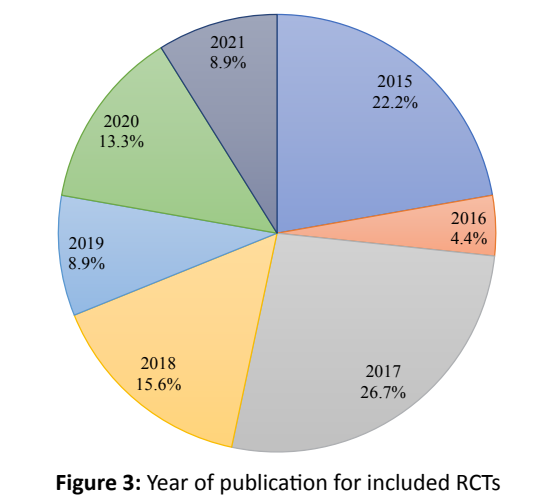

Figure 3: Year of publication for included RCTs

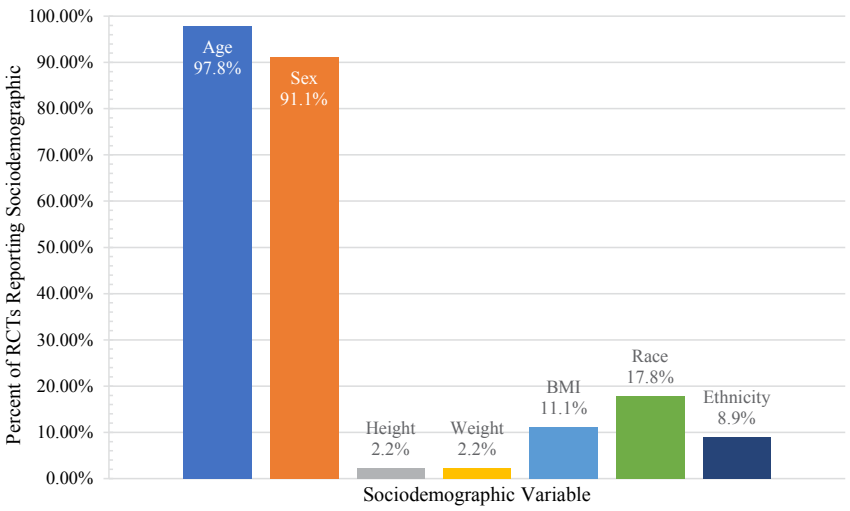

Figure 4: Proportion of studies reporting sociodemographic variables

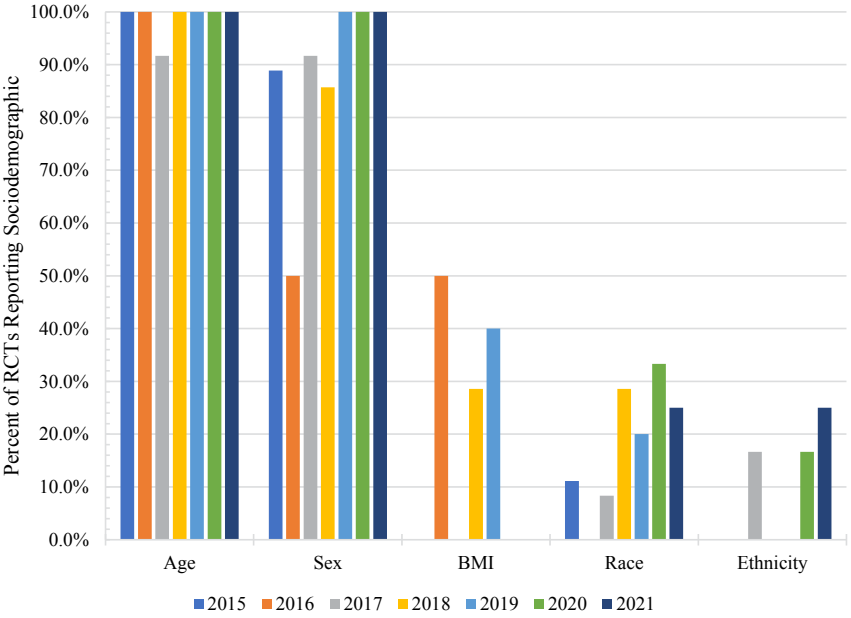

Figure 5: Proportion of studies reporting sociodemographic variables separated by year of publication

Sociodemographic reporting trended upward with time (Figure 5). Age and sex were reported at a high rate for each year of the study period, with both variables being reported in all studies since 2019. The reporting of race was variable year to year but trended upward with time, from 11.1% in 2015 to 25% in 2021. Ethnicity was only reported in 2017 (16.7%), 2020 (16.7%), and most frequently in 2021 (25%), and no specific trends could be observed. The proportions of sociodemographic reporting by year can be found in Supplementary Table 3.

Analysis of Sociodemographic Variables

The most analyzed sociodemographic variable was age (n=8; 17.8%), followed by sex (n=6; 13.3%) and race (n=2; 4.4%) (Figure 6). No studies analyzed weight, height, BMI, or ethnicity. No specific trends could be observed for the analysis of the variables when separated by year of publication (Figure 7). The proportions of sociodemographic analysis by year can be found in Supplementary Table 4. Figure data is also summarized in Supplementary Table 5 to allow for accurate, additional interpretation of the provided figures.

Risk of Bias

"Selection of the reported result" had the least bias, with 95.6% of studies in this category classified as low risk (Figure 8). Most studies (>84%) had low levels of bias with respect to "deviations from intended outcomes," "missing outcome data," and their "randomization process." "Measurement of the outcome" revealed some concerns for bias in 31.1% of studies.

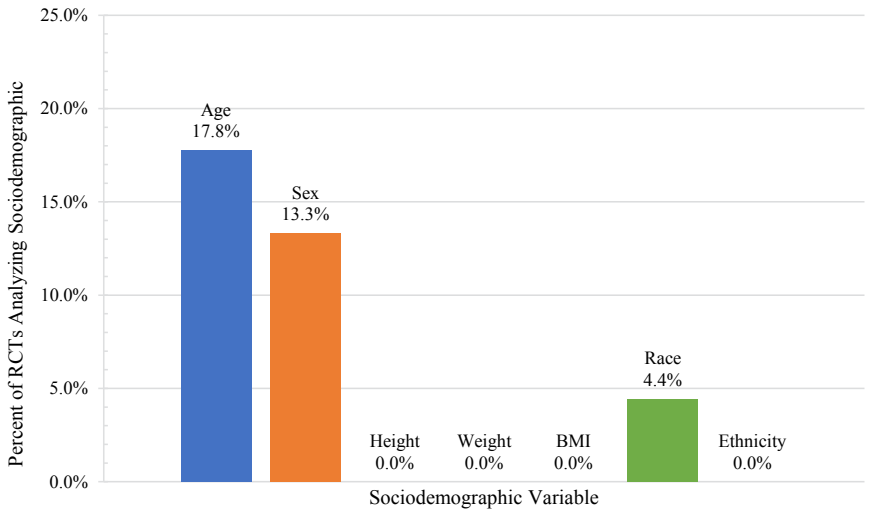

Figure 6: Proportion of studies analyzing sociodemographic variables

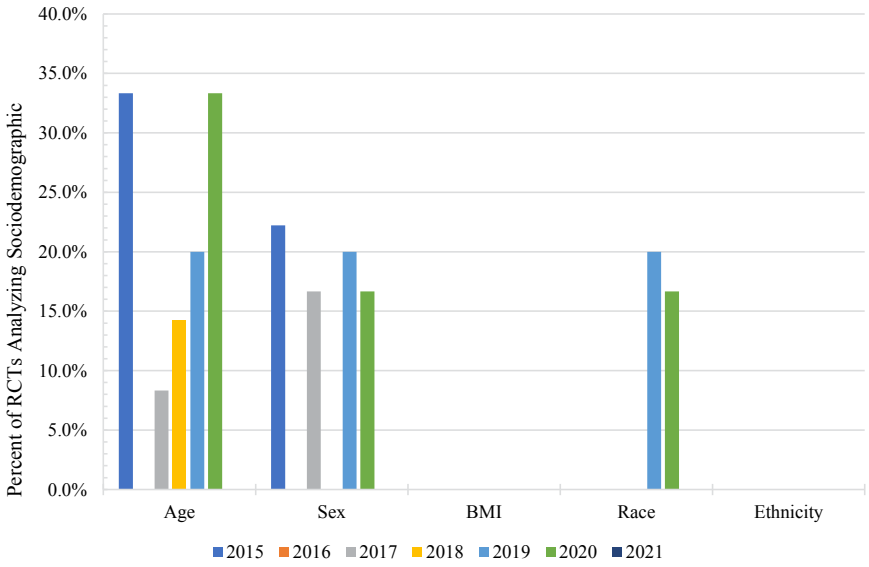

Figure 7: Proportion of studies analyzing sociodemographic variables separated by year of publication

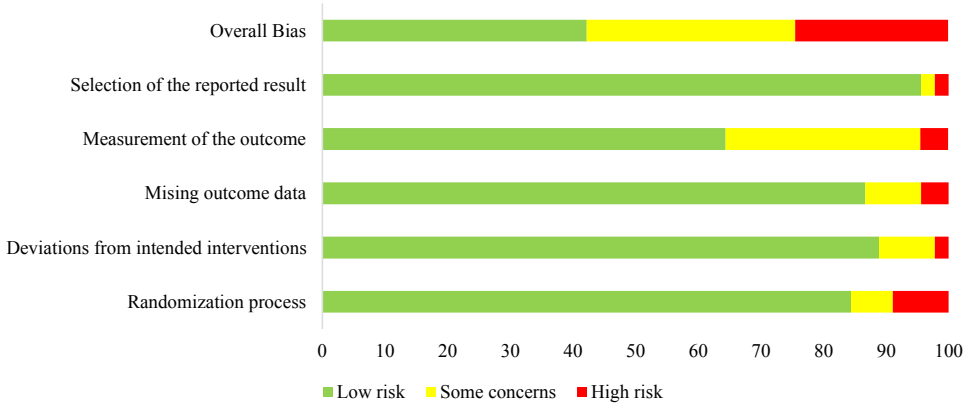

Figure 8: Bias assessment of included studies using the Cochrane risk-of-bias tool

Discussion

The primary purpose of this study was to evaluate the frequency of reporting and analyzing of several sociodemographic variables in hand surgery RCTs published in JHS between 2015 and 2021. Age and sex were the most reported demographics and were presented in nearly every study. Interestingly, race was reported in about one of six studies, while ethnicity was reported half as often. Height and weight were most infrequently reported but included through BMI in more than 10% of studies. Despite high rates of reporting, age was included within the statistical analysis of only 17.8% of studies, followed by sex in 13.3%, and race in 4.4%. There was no analysis of ethnicity, height, weight, or BMI throughout the seven-year period.

A recent systematic review investigated the rates at which randomized controlled trials published in 10 orthopedic journals between 2015 and 2019 reported and analyzed these same sociodemographic variables[15]. Of 482 total articles, only 7.3% reported race and 3.1% reported ethnicity. Analysis by race (1.2%) and ethnicity (0.2%) were much less frequent. Within this same study, articles were further subdivided into subspecialty categories. Of the 12 articles pertaining to hand surgery, 8.3% reported race and no studies reported ethnicity; each of these studies failed to perform analysis of these demographics. Interestingly, we found that RCTs published in JHS over a similar period reported race (17.8%) and ethnicity (8.9%) at much higher frequencies. These findings imply that rates of sociodemographic reporting may vary amongst RCTs of different orthopedic journals even if they pertain to the same orthopedic domain. Further study of specialty-specific journals should be performed to increase the power of these results and more accurately identify the rate of reporting and analysis of sociodemographic variables[14].

In reviewing the racial and ethnic demographics of included publications within our study, we found there to be great diversity but inconsistent reporting of included patients[22-29]. For example, of the eight RCTs that reported race, half provided data on the number of White versus non-White patients[22,24-26] only, while half provided data on a larger variety of subgroups including White, Black, Asian, Native American, and Pacific Islander patients[23,27-29]. Only three studies reported ethnicity by including the percentage of Hispanic patients within their study populations[23,28,29], while one study commented on the 'ethnic homogeneity' of its study population[30]. Regarding analysis of race and ethnicity, only two of the 45 studies (4.4%) within this review analyzed outcomes based on race, and none analyzed outcomes based on ethnicity.

As discussed previously, race has been shown to impact joint and spine surgery in the field of orthopaedic surgery[2,5,6]. However, other studies have explored the effect of race and ethnicity on the outcomes, decision-making, and other aspects of hand surgery. In a retrospective review of 92,921 patients with carpal tunnel syndrome, Brodeur et al. found that Black and Asian patients were less likely to undergo surgery compared to White patients. Similarly, the authors showed that patients of Hispanic ethnicity had decreased odds of surgery compared to patients of non-Hispanic ethnicity[31]. Mahmoudi et al. retrospectively reviewed 13,129 patients with traumatic digit amputation and found that Black patients were less likely than White patients to undergo replantation procedures[32]. In a separate analysis of over 31,000 trigger finger patients by Brodeur et al., Asian, African American, and other minority patients were less likely to undergo surgery relative to White patients[9]. Squitieri et al. similarly showed that Black and Hispanic children underwent attempted reimplantation of an amputated finger at significantly lower rates than their White counterparts, even after controlling for potential confounding factors[11]. Following a brachial plexus injury, Bucknor et al. found that Black patients are more likely to be treated in the emergency department as opposed to an elective, outpatient setting and are also less likely to receive supported discharge compared to White patients[12]. Walsh et al. found that Black and Hispanic patients show worse functional outcomes and report higher levels of pain following a distal radius fracture relative to White patients[10] while a review by Khetpal et al. revealed many outcomes affected by various sociodemographic variables, including race[13].

These studies illustrate the disparities in treatment rate and outcomes, among other factors, that are associated with the race and ethnicity of the patient. By highlighting these findings, we hope to emphasize the presence of these health inequities and stress the importance of analyzing—or at least reporting—these sociodemographic variables for future RCTs. Because race and ethnicity have been shown to affect patient decision-making and outcomes and may affect access to healthcare or the biases that patients experience, study outcomes should take into account these potential moderating factors. Not only can this reveal other yet-undiscovered health inequities, but it can also lead to treatments optimized for the patient's race and prevent complications disproportionately affecting particular minorities.

While race was infrequently reported and analyzed even less often, age was the most frequently analyzed sociodemographic variable in our review. Many of the included studies show that age, like race, can impact outcomes, decision-making, and other aspects in hand surgery. In a mixed-methods study by Zhuang et al., participants were asked to choose between receiving carpal tunnel release (expensive) or orthosis wear

(inexpensive) for hypothetical carpal tunnel symptoms after either receiving or not receiving cost information regarding the procedure. After stratifying the participants based on age, the younger subgroup was more inclined to choose surgery despite exposure to cost information when compared to the older subgroup[23]. Valdes et al. investigated whether there was a difference in postoperative outcomes following volar plate fixation for distal radius fractures in patients randomized to home (unsupervised) vs. therapist-supervised hand therapy. Overall, there were no statistically significant differences in self-evaluation scores, extremity motion, pain, or grip strength. However, older subjects had poorer grip and self-evaluation scores at 12 weeks and reported less pain when compared to younger subjects[33]. Finally, Chung et al. studied the predictors of outcomes 12 months following distal radius fractures. The authors found that increasing age was associated with lower Michigan Hand Questionnaire scores, implying that older patients with distal radius fractures may expect poorer outcomes when compared to those of younger age[27].

These findings show that outcomes of hand surgery RCTs can be heavily influenced by age. Differences based on other sociodemographic variables may be elucidated with increased reporting and analysis. Researchers should focus on the identification of health disparity so that clinicians can more effectively counsel patients before and after treatment.

The conclusions of our study may be limited by the small sample size of RCTs that met the inclusion criteria. Though all RCTs between 2015 and 2021 published in JHS were included, additional years of data collection or inclusion of other study types – such as highly powered cohort studies[15] – may help to reveal racial and ethnic differences. Similarly, only papers published in JHS were included in this study; future studies should explore these sociodemographic trends in other hand surgery journals. As JHS is based in the United States, there may be some bias in the rate of publishing of studies submitted from the journal's home country, potentially skewing the geographical distribution of recent hand literature. Studies published in non-US-based hand surgery journals can be evaluated in future studies to explore this possible bias. In addition, there are a variety of socioeconomic factors associated with patient race and ethnicity that may influence study outcomes and never be adequately considered[34,35]. As such, the effect of biological versus social factors on health outcomes remains difficult. Finally, included studies may have forgone the evaluation of race or ethnicity if these differences were known to have negligible effect on the intervention. Future reviews can select studies associated with topics known to exhibit notable health differences amongst these variables.

Conclusions

The present review of RCTs published in JHS between 2015 and 2021 found that the sociodemographic variables of age and sex were reported at high rates. Conversely, race was less commonly reported, and ethnicity was rarely reported. Each variable was infrequently included as part of statistical analysis. Because outcomes of hand surgery RCTs can be heavily influenced by race and age and may be further moderated by other sociodemographic variables, both reporting and analysis of these variables is crucial to ensure accurate and comprehensive study conclusions. The significance of these findings should be recognized and used to interpret and enhance the methodology of future RCTs.

Conflict of Interest

The Authors declare that there is no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

References

1. Braveman P, Egerter S, Williams DR. The social determinants of health: coming of age. Annu Rev Public Health. 2011; 32: 381-98. doi:10.1146/annurev-publhealth-031210-101218
2. Sanford Z, Taylor H, Fiorentino A, et al. Racial Disparities in Surgical Outcomes After Spine Surgery: An ACS-NSQIP Analysis. Global Spine J. 2019; 9(6): 583-590. doi:10.1177/2192568218811633
3. Nelson CL. Disparities in Orthopaedic Surgical Intervention. JAAOS - Journal of the American Academy of Orthopaedic Surgeons. 2007. doi:10.5435/00124635-200700001-00005
4. Pandya NK, Wustrack R, Metz L, et al. Current Concepts in Orthopaedic Care Disparities. JAAOS - Journal of the American Academy of Orthopaedic Surgeons. 2018; 26(23): 823-832. doi:10.5435/JAAOS-D-17-00410
5. Adelani MA, Archer KR, Song Y, et al. Immediate Complications Following Hip and Knee Arthroplasty: Does Race Matter? The Journal of Arthroplasty. 2013; 28(5): 732-735. doi:10.1016/j.arth.2012.09.015
6. Alosh H, Riley LH 3rd, Skolasky RL. Insurance Status, Geography, Race, and Ethnicity as Predictors of Anterior Cervical Spine Surgery Rates and In-Hospital Mortality: An Examination of United States Trends From 1992 to 2005. Spine. 2009; 34(18): 1956-62. doi:10.1097/BRS.0b013e3181ab930e
7. Schoenfeld AJ, Tipirneni R, Nelson JH, et al. The Influence of Race and Ethnicity on Complications and Mortality After Orthopedic Surgery: A Systematic Review of the Literature. Medical Care. 2014; 52(9): 842-51. doi:10.1097/MLR.0000000000000177
8. Brodeur PG, Patel DD, Raducha JE, et al. Social Disparities in the Management of Trigger Finger: An Analysis of 31, 411 Cases. AAHS Annual Meeting 2022.
9. Brodeur PG, Patel DD, Licht AH, et al. Demographic Disparities amongst Patients Receiving Carpal Tunnel Release: A Retrospective Review of 92,921 Patients. Plastic and Reconstructive Surgery – Global Open. 2021; 9(11): e3959. doi:10.1097/gox.0000000000003959

10. Walsh M, Davidovitch RI, Egol KA. Ethnic Disparities in Recovery Following Distal Radial Fracture. JBJS. 2010; 92(5): 1082-1087. doi:10.2106/jbjs.H.01329

11. Squitieri L, Reichert H, Kim HM, et al. Patterns of surgical care and health disparities of treating pediatric finger amputation injuries in the United States. J Am Coll Surg. 2011; 213(4): 475-85. doi:10.1016/j.jamcollsurg.2011.07.017

12. Bucknor A, Huang A, Wu W, et al. Socioeconomic Disparities in Brachial Plexus Surgery: A National Database Analysis. Plastic and Reconstructive Surgery – Global Open. 2019; 7(2): e2118. doi:10.1097/gox.0000000000002118

13. Khetpal S, Lopez J, Redett RJ, et al. Health Equity and Healthcare Disparities in Plastic Surgery: What We Can Do. Journal of Plastic, Reconstructive & Aesthetic Surgery. 2021; 74(12): 3251-3259. doi:10.1016/j.bjps.2021.05.026

14. Griffin SA, Magnuson JA, Sutton RM, et al. Reporting and Analyzing Demographics in the Journal of Arthroplasty: Are We Making Progress? J Arthroplasty. 2021; 36(12): 3825-3830. doi:10.1016/j.arth.2021.09.017

15. Paul RW, Lee D, Brutico J, et al. Reporting and Analyzing Race and Ethnicity in Orthopaedic Clinical Trials: A Systematic Review. J Am Acad Orthop Surg Glob Res Rev. 2021; 5(5): e21.00027. doi:10.5435/JAAOSGlobal-D-21-00027

16. Group TC. Baseline Data. Accessed February 6, 2022. http://www.consort-statement.org/checklists/view/32--consort-2010/510-baseline-data

17. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021; 372: n71. doi:10.1136/bmj.n71

18. Winker MA. Measuring Race and Ethnicity: Why and How? JAMA. 2004; 292(13): 1612-1614. doi:10.1001/jama.292.13.1612

19. Clayton JA, Tannenbaum C. Reporting Sex, Gender, or Both in Clinical Research? JAMA. 2016; 316(18): 1863-1864. doi:10.1001/jama.2016.16405

20. Sterne JAC, Savović J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. Bmj. 2019; 366: l4898. doi:10.1136/bmj.l4898

21. Ranganathan P, Pramesh CS, Aggarwal R. Common pitfalls in statistical analysis: Intention-to-treat versus per-protocol analysis. Perspect Clin Res. 2016; 7(3): 144-146. doi:10.4103/2229-3485.184823

22. Tyser AR, Beckmann J, Weng C, et al. A randomized trial of the disabilities of the arm, shoulder, and hand administration: tablet computer versus paper and pencil. J Hand Surg Am. 2015; 40(3): 554-9. doi:10.1016/j.jhsa.2014.10.046

23. Zhuang T, Kortlever JTP, Shapiro LM, et al. The Influence of Cost Information on Treatment Choice: A Mixed-Methods Study. J Hand Surg Am. 2020; 45(10): 899-908. doi:10.1016/j.jhsa.2020.05.019

24. Wilkens SC, Ring D, Teunis T, et al. Decision Aid for Trapeziometacarpal Arthritis: A Randomized Controlled Trial. J Hand Surg Am. 2019; 44(3): 247. doi:10.1016/j.jhsa.2018.06.004

25. Keulen MHF, Teunis T, Vagner GA, et al. The Effect of the Content of Patient-Reported Outcome Measures on Patient Perceived Empathy and Satisfaction: A Randomized Controlled Trial. J Hand Surg Am. 2018; 43(12): 1141. doi:10.1016/j.jhsa.2018.04.020

26. Kleiss IIM, Kortlever JTP, Ring D, et al. A Randomized Controlled Trial of Decision Aids for Upper-Extremity Conditions. J Hand Surg Am. 2021; 46(4): 338. doi:10.1016/j.jhsa.2020.09.003

27. Chung KC, Kim HM, Malay S, et al. Predicting Outcomes After Distal Radius Fracture: A 24-Center International Clinical Trial of Older Adults. J Hand Surg Am. 2019; 44(9): 762-771. doi:10.1016/j.jhsa.2019.05.016

28. Curtin CM, Kenney D, Suarez P, et al. A Double-Blind Placebo Randomized Controlled Trial of Minocycline to Reduce Pain After Carpal Tunnel and Trigger Finger Release. J Hand Surg Am. 2017; 42(3): 166-174. doi:10.1016/j.jhsa.2016.12.011

29. Roe AK, Eppler SL, Shapiro LM, et al. Engaging Patients to Ask More Questions: What's the Best Way? A Pragmatic Randomized Controlled Trial. J Hand Surg Am. 2021; 46(9): 818. doi:10.1016/j.jhsa.2021.02.001

30. Skov ST, Bisgaard T, Søndergaard P, et al. Injectable Collagenase Versus Percutaneous Needle Fasciotomy for Dupuytren Contracture in Proximal Interphalangeal Joints: A Randomized Controlled Trial. J Hand Surg Am. 2017; 42(5): 321-328.e3. doi:10.1016/j.jhsa.2017.03.003

31. Brodeur PG, Patel DD, Licht AH, et al. Demographic Disparities amongst Patients Receiving Carpal Tunnel Release: A Retrospective Review of 92,921 Patients. Plast Reconstr Surg Glob Open. 2021; 9(11): e3959. doi:10.1097/gox.0000000000003959

32. Mahmoudi E, Swiatek PR, Chung KC, et al. Racial Variation in Treatment of Traumatic Finger/Thumb Amputation: A National Comparative Study of Replantation and Revision Amputation. Plast Reconstr Surg. 2016; 137(3): 576e-585e. doi:10.1097/01.prs.0000479969.14557.9d

33. Valdes K, Naughton N, Burke CJ. Therapist-supervised hand therapy versus home therapy with therapist instruction following distal radius fracture. J Hand Surg Am. 2015; 40(6): 1110-6. doi:10.1016/j.jhsa.2015.01.036

34. Caulfield T, Fullerton SM, Ali-Khan SE, et al. Race and ancestry in biomedical research: exploring the challenges. Genome Med. 2009; 1(1): 8. doi:10.1186/gm8

35. Kaufman JS, Cooper RS. Race in epidemiology: new tools, old problems. Ann Epidemiol. 2008; 18(2): 119-23. doi:10.1016/j.annepidem.2007.09.002

36. Alter TH, Ilyas AM. A Prospective Randomized Study Analyzing Preoperative Opioid Counseling in Pain Management After Carpal Tunnel Release Surgery. J Hand Surg Am. 2017; 42(10): 810-815. doi:10.1016/j.jhsa.2017.07.003

37. Alter TH, Liss FE, Ilyas AM. A Prospective Randomized Study Comparing Bupivacaine Hydrochloride Versus Bupivacaine Liposome for Pain Management After Distal Radius Fracture Repair Surgery. J Hand Surg Am. 2017; 42(12): 1003-1008. doi:10.1016/j.jhsa.2017.08.022

38. Badalamente MA, Hurst LC, Benhaim P, et al. Efficacy and safety of collagenase clostridium histolyticum in the treatment of proximal interphalangeal joints in dupuytren contracture: combined analysis of 4 phase 3 clinical trials. J Hand Surg Am. 2015; 40(5): 975-83. doi:10.1016/j.jhsa.2015.02.018

39. Bashir MM, Qayyum R, Saleem MH, et al. Effect of Time Interval Between Tumescent Local Anesthesia Infiltration and Start of Surgery on Operative Field Visibility in Hand Surgery Without Tourniquet. J Hand Surg Am. 2015; 40(8): 1606-9. doi:10.1016/j.jhsa.2015.03.034

40. Boriani F, Granchi D, Roatti G, et al. Alpha-lipoic Acid After Median Nerve Decompression at the Carpal Tunnel: A Randomized Controlled Trial. J Hand Surg Am. 2017; 42(4): 236-242. doi:10.1016/j.jhsa.2017.01.011

41. Cantero-Téllez R, Cuesta-Vargas AI, Cuadros-Romero M. Treatment of proximal interphalangeal joint flexion contracture: combined static and dynamic orthotic intervention compared with other therapy intervention: a randomized controlled trial. J Hand Surg Am. 2015; 40(5): 951-5. doi:10.1016/j.jhsa.2015.01.005

42. Dailey SK, Miller AR, Kakazu R, et al. The Effectiveness of Mini-C-Arm Fluoroscopy for the Closed Reduction of Distal Radius Fractures in Adults: A Randomized Controlled Trial. J Hand Surg Am. 2018; 43(10): 927-931. doi:10.1016/j.jhsa.2018.02.015

43. Dale EL, Kluemper CT, Cowart SJ, et al. Bupivacaine Extended-Release Liposomal Injection Versus Bupivacaine HCl for Early Postoperative Pain Control Following Wrist Operations: A Prospective, Randomized Control Trial. J Hand Surg Am. 2020; 45(6): 550. doi:10.1016/j.jhsa.2019.10.009

44. de Moraes VY, Queiroz J, Jr., Raduan-Neto J, et al. Nonsurgical Treatment for Symptomatic Carpal Tunnel Syndrome: A Randomized Clinical Trial Comparing Local Corticosteroid Injection Versus Night Orthosis. J Hand Surg Am. 2021; 46(4): 295-300. doi:10.1016/j.jhsa.2020.11.014

45. Earp BE, Stanbury SJ, Mora AN, et al. Needle-Free Jet Lidocaine Administration for Preinjection Anesthesia in Trigger Finger Injection: A Randomized Controlled Trial. J Hand Surg Am. 2017; 42(8): 618-622. doi:10.1016/j.jhsa.2017.05.001

46. El-Saeed M, Sallam A, Radwan M, et al. Kirschner Wires Versus Titanium Plates and Screws in Management of Unstable Phalangeal Fractures: A Randomized, Controlled Clinical Trial. J Hand Surg Am. 2019; 44(12): 1091. doi:10.1016/j.jhsa.2019.01.015

47. Franko OI, Stern PJ. Use and Effectiveness of Ethyl Chloride for Hand Injections. J Hand Surg Am. 2017; 42(3): 175-181. doi:10.1016/j.jhsa.2016.12.013

48. Hansen RL, Søndergaard M, Lange J. Open Surgery Versus Ultrasound-Guided Corticosteroid Injection for Trigger Finger: A Randomized Controlled Trial With 1-Year Follow-up. J Hand Surg Am. 2017; 42(5): 359-366. doi:10.1016/j.jhsa.2017.02.011

49. Hegazy G, Massoud AH, Seddik M, et al. Structural Versus Nonstructural Bone Grafting for the Treatment of Unstable Scaphoid Waist Nonunion Without Avascular Necrosis: A Randomized Clinical Trial. J Hand Surg Am. 2021; 46(6): 462-470. doi:10.1016/j.jhsa.2021.01.027

50. Hutchison RL, O'Rear J, Olson-Burgess C, et al. Offering the Influenza Vaccine in a Pediatric Hand Surgery Clinic Increases Vaccination Rates. J Hand Surg Am. 2018; 43(8): 776. doi:10.1016/j.jhsa.2018.01.017

51. Ilyas AM, Miller AJ, Graham JG, et al. Pain Management After Carpal Tunnel Release Surgery: A Prospective Randomized Double-Blinded Trial Comparing Acetaminophen, Ibuprofen, and Oxycodone. J Hand Surg Am. 2018; 43(10): 913-919. doi:10.1016/j.jhsa.2018.08.011

52. Keulen MHF, Teunis T, Vagner GA, et al. The Effect of the Content of Patient-Reported Outcome Measures on Patient Perceived Empathy and Satisfaction: A Randomized Controlled Trial. J Hand Surg Am. 2018; 43(12): 1141. doi:10.1016/j.jhsa.2018.04.020

53. Kleiss IIM, Kortlever JTP, Ring D, et al. A Randomized Controlled Trial of Decision Aids for Upper-Extremity Conditions. J Hand Surg Am. 2021; 46(4): 338. doi:10.1016/j.jhsa.2020.09.003

54. Landgren M, Abramo A, Geijer M, et al. Fragment-Specific Fixation Versus Volar Locking Plates in Primarily Nonreducible or Secondarily Redisplaced Distal Radius Fractures: A Randomized Controlled Study. J Hand Surg Am. 2017; 42(3): 156-165. doi:10.1016/j.jhsa.2016.12.001

55. Logli AL, Bear BJ, Schwartz EG, et al. A Prospective, Randomized Trial of Splinting After Minicarpal Tunnel Release. J Hand Surg Am. 2018; 43(8): 775. doi:10.1016/j.jhsa.2018.01.016

56. Marks M, Hensler S, Wehrli M, et al. Trapeziectomy With Suspension-Interposition Arthroplasty for Thumb Carpometacarpal Osteoarthritis: A Randomized Controlled Trial Comparing the Use of Allograft Versus Flexor Carpi Radialis Tendon. J Hand Surg Am. 2017; 42(12): 978-986. doi:10.1016/j.jhsa.2017.07.023

57. Martínez-Catalán N, Pajares S, Llanos L, et al. A Prospective Randomized Trial Comparing the Functional Results of Buddy Taping Versus Closed Reduction and Cast Immobilization in Patients With Fifth Metacarpal Neck Fractures. J Hand Surg Am. 2020; 45(12): 1134-1140. doi:10.1016/j.jhsa.2020.05.013

58. Nishiwaki M, Terasaka Y, Kiyota Y, et al. A Prospective Randomized Comparison of Variable-Angle and Fixed-Angle Volar Locking Plating for Intra-Articular Distal Radius Fractures. J Hand Surg Am. 2021; 46(7): 584-593. doi:10.1016/j.jhsa.2021.03.014

59. Plate JF, Gaffney DL, Emory CL, et al. Randomized comparison of volar locking plates and intramedullary nails for unstable distal radius fractures. J Hand Surg Am. 2015; 40(6): 1095-101. doi:10.1016/j.jhsa.2015.02.014

60. Roe AK, Eppler SL, Shapiro LM, et al. Engaging Patients to Ask More Questions: What's the Best Way? A Pragmatic Randomized Controlled Trial. J Hand Surg Am. 2021; 46(9): 818. doi:10.1016/j.jhsa.2021.02.001

61. Roh YH, Lee BK, Baek JR, et al. A randomized comparison of volar plate and external fixation for intra-articular distal radius fractures. J Hand Surg Am. 2015; 40(1): 34-41. doi:10.1016/j.jhsa.2014.09.025

62. Roh YH, Hwangbo K, Gong HS, et al. Comparison of Ultrasound-Guided Versus Landmark-Based Corticosteroid Injection for Carpal Tunnel Syndrome: A Prospective Randomized Trial. J Hand Surg Am. 2019; 44(4): 304-310. doi:10.1016/j.jhsa.2019.02.007

63. Saving J, Enocson A, Ponzer S, et al. External Fixation Versus Volar Locking Plate for Unstable Dorsally Displaced Distal Radius Fractures-A 3-Year Follow-Up of a Randomized Controlled Study. J Hand Surg Am. 2019; 44(1): 18-26. doi:10.1016/j.jhsa.2018.09.015

64. Schwartzenberger J, Presson A, Lyle A, et al. Remote Collection of Patient-Reported Outcomes Following Outpatient Hand Surgery: A Randomized Trial of Telephone, Mail, and E-Mail. J Hand Surg Am. 2017; 42(9): 693-699. doi:10.1016/j.jhsa.2017.05.002

65. Selles CA, Beerekamp MSH, Leenhouts PA, et al. The Value of Intraoperative 3-Dimensional Fluoroscopy in the Treatment of Distal Radius Fractures: A Randomized Clinical Trial. *J* Hand Surg Am. 2020; 45(3): 189-195. doi:10.1016/j.jhsa.2019.11.006

66. Soberón JR Jr, Crookshank JW 3rd, Nossaman BD, et al. Distal Peripheral Nerve Blocks in the Forearm as an Alternative to Proximal Brachial Plexus Blockade in Patients Undergoing Hand Surgery: A Prospective and Randomized Pilot Study. J Hand Surg Am. 2016; 41(10): 969-977. doi:10.1016/j.jhsa.2016.07.092

67. Strömberg J, Ibsen-Sörensen A, Fridén J. Comparison of Treatment Outcome After Collagenase and Needle Fasciotomy for Dupuytren Contracture: A Randomized, Single-Blinded, Clinical Trial With a 1-Year Follow-Up. J Hand Surg Am. 2016; 41(9): 873-80. doi:10.1016/j.jhsa.2016.06.014

68. Spekreijse KR, Vermeulen GM, Kedilioglu MA, et al. The Effect of a Bone Tunnel During Ligament Reconstruction for Trapeziometacarpal Osteoarthritis: A 5-Year Follow-up. J Hand Surg Am. 2015; 40(11): 2214-22. doi:10.1016/j.jhsa.2015.07.011

69. Tsolias A, Detrembleur C, Druez V, et al. Effect of Radial Nerve Release on Lateral Epicondylitis Outcomes: A Prospective, Randomized, Double-Blinded Trial. J Hand Surg Am. 2019; 44(3): 216-221. doi:10.1016/j.jhsa.2018.06.009

70. Valdes K, Naughton N, Burke CJ. Therapist-supervised hand therapy versus home therapy with therapist instruction following distal radius fracture. J Hand Surg Am. 2015; 40(6): 1110-6.e1. doi:10.1016/j.jhsa.2015.01.036

71. Wasterlain AS, Melamed E, Bello R, et al. The Effect of Price on Surgeons' Choice of Implants: A Randomized Controlled Survey. J Hand Surg Am. 2017; 42(8): 593-601. doi:10.1016/j.jhsa.2017.05.005

72. Weinheimer K, Michelotti B, Silver J, et al. A Prospective, Randomized, Double-Blinded Controlled Trial Comparing Ibuprofen and Acetaminophen Versus Hydrocodone and Acetaminophen for Soft Tissue Hand Procedures. J Hand Surg Am. 2019; 44(5): 387-393. doi:10.1016/j.jhsa.2018.10.014

73. Wilkens SC, Ring D, Teunis T, et al. Decision Aid for Trapeziometacarpal Arthritis: A Randomized Controlled Trial. J Hand Surg Am. 2019; 44(3): 247.e1-247. doi:10.1016/j.jhsa.2018.06.004

74. Williksen JH, Husby T, Hellund JC, et al. External Fixation and Adjuvant Pins Versus Volar Locking Plate Fixation in Unstable Distal Radius Fractures: A Randomized, Controlled Study With a 5-Year Follow-Up. J Hand Surg Am. 2015; 40(7): 1333-40. doi:10.1016/j.jhsa.2015.03.008

75. Zhuang T, Kortlever JTP, Shapiro LM, et al. The Influence of Cost Information on Treatment Choice: A Mixed-Methods Study. J Hand Surg Am. 2020; 45(10): 899-908. doi:10.1016/j.jhsa.2020.05.019

Supplementary Data

Supplementary Table 1: PRISMA guidelines checklist

Section and Topic	Item #	Checklist item	Location where item is reported (Lines)
TITLE			
Title	1	Identify the report as a systematic review.	1-2
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	6-11
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	34-60
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	62-71
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	85-90
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	78-79
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	79-81
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	94-121
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	94-121
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	94-121
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	99-121
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	125-131
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	99-105
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	94-121
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	99-121
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	99-121, 137-172
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	99, 125-126
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	107-121
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	109-113, 117-121, 129-131
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	125-131
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	99

Section and Topic	Item #	Checklist item	Location where item is reported (Lines)
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	137-138, 297
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	137-138, 297
Study characteristics	17	Cite each included study and present its characteristics.	328
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	169-172, 308
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	N/A
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	137-165, 308
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	137-165, 300-306
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	169-172, 308
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	169-172, 308
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	169-172, 308
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	169-172, 308
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	176-260
	23b	Discuss any limitations of the evidence included in the review.	262-276
	23c	Discuss any limitations of the review processes used.	262-276
	23d	Discuss implications of the results for practice, policy, and future research.	280-287
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	78
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	78
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	78, N/A
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	293-294
Competing interests	26	Declare any competing interests of review authors.	292
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	336-339

Supplementary Table 2: Quantification of sociodemographic variables of interest in the included studies

			Frequency of Reporting							Frequency of Analysis						
Author	**Year**	**Country of Origin**	**Age**	**Sex**	**Height**	**Weight**	**BMI**	**Race**	**Ethnicity**	**Age**	**Sex**	**Height**	**Weight**	**BMI**	**Race**	**Ethnicity**
Alter et al.[36]	2017	USA	X	X												
Alter et al.[37]	2017	USA	X	X												
Badalamente et al.[38]	2015	USA	X	X						X	X					
Bashir et al.[39]	2015	Pakistan	X	X												
Boriani et al.[40]	2017	Italy	X	X												
Cantero-Téllez et al.[41]	2015	Spain	X	X												
Chung et al.[27]	2019	USA	X	X				X		X	X				X	
Curtin et al.[28]	2017	USA	X	X				X	X							
Dailey et al.[42]	2018	USA	X	X			X									
Dale et al.[43]	2020	USA	X	X												
De Moraes et al.[44]	2021	Brazil	X	X												
Earp et al.[45]	2017	USA	X	X												
El-Saeed et al.[46]	2019	Egypt	X	X												
Franko et al.[47]	2017	USA	X	X							X					
Hansen et al.[48]	2017	Denmark	X	X												
Hegazy et al.[49]	2021	Saudi Arabia	X	X												
Hutchison et al.[50]	2018	USA	X							X						
Ilyas et al.[51]	2018	USA	X	X												
Keulen et al.[52]	2018	USA	X	X				X								
Kleiss et al.[53]	2020	USA	X	X				X		X	X				X	
Landgren et al.[54]	2017	Sweden	X	X												
Logli et al.[55]	2018	USA	X	X			X									
Marks et al.[56]	2017	Switzerland	X	X												
Martínez-Catalán et al.[57]	2020	Spain	X	X												
Nishiwaki et al.[58]	2021	Japan	X	X												
Plate et al.[59]	2015	USA	X	X												
Roe et al.[60]	2021	USA	X	X				X	X							
Roh et al.[61]	2015	South Korea	X	X												
Roh et al.[62]	2019	South Korea	X	X			X									
Saving et al.[63]	2019	Sweden	X	X												
Schwartzenberger et al.[64]	2017	USA	X	X						X	X					
Selles et al.[65]	2020	Netherlands	X	X												
Skov et al.[30]	2017	Denmark	X	X					X							
Soberón et al.[66]	2016	USA	X				X									
Sørensen et al.[67]	2020	Denmark	X	X												
Spekreijse et al.[68]	2015	Netherlands	X													
Strömberg et al.[67]	2016	Sweden	X	X												
Tsolias et al.[69]	2018	Belgium	X	X	X	X										
Tyser et al.[22]	2015	USA	X	X				X		X	X					
Valdes et al.[70]	2015	USA	X	X						X						
Wasterlain et al.[71]	2017	USA														
Weinheimer et al.[72]	2019	USA	X	X			X									
Wilkens et al.[73]	2018	USA	X	X				X								
Williksen et al.[74]	2015	Norway	X	X												
Zhuang et al.[75]	2020	USA	X	X				X	X	X						
	Total	**Count**	44	41	1	1	5	8	4	8	6	0	0	0	2	0
	(n=45)	**%**	97.80%	91.10%	2.20%	2.20%	11.10%	17.80%	8.90%	17.80%	13.30%	0.00%	0.00%	0.00%	4.40%	0.00%

"X" indicates presence of the indicated variable.

Supplementary Table 3: Proportion of studies reporting sociodemographic variables by year

Year	Age	Sex	BMI	Race	Ethnicity
2015	100.0%	88.9%	0.0%	11.1%	0.0%
2016	100.0%	50.0%	50.0%	0.0%	0.0%
2017	91.7%	91.7%	0.0%	8.3%	16.7%
2018	100.0%	85.7%	28.6%	28.6%	0.0%
2019	100.0%	100.0%	40.0%	20.0%	0.0%
2020	100.0%	100.0%	0.0%	33.3%	16.7%
2021	100.0%	100.0%	0.0%	25.0%	25.0%

Supplementary Table 4: Proportion of studies analyzing sociodemographic variables by year

Year	Age	Sex	BMI	Race	Ethnicity
2015	33.3%	22.2%	0.0%	0.0%	0.0%
2016	0.0%	0.0%	0.0%	0.0%	0.0%
2017	8.3%	16.7%	0.0%	0.0%	0.0%
2018	14.3%	0.0%	0.0%	0.0%	0.0%
2019	20.0%	20.0%	0.0%	20.0%	0.0%
2020	33.3%	16.7%	0.0%	16.7%	0.0%
2021	0.0%	0.0%	0.0%	0.0%	0.0%

Supplementary Table 5: Data for provided figures

a) RCT Country of Origin data. b) RCT Year of Publication data. c) Sociodemographic variable reporting. d) Sociodemographic variable analyzing.

a

Countries	Count
USA	24
Denmark	3
Sweden	3
Netherlands	2
South Korea	2
Spain	2
Belgium	1
Brazil	1
Egypt	1
Italy	1
Japan	1
Norway	1
Pakistan	1
Saudi Arabia	1
Switzerland	1

b

Years	Count
2015	10
2016	2
2017	12
2018	7
2019	4
2020	6
2021	4

c

Sociodemographic Reporting					
	Age	Sex	BMI	Race	Ethnicity
2015	9	8	0	1	0
2016	2	1	1	0	0
2017	11	11	0	1	2
2018	7	6	2	2	0
2019	5	5	2	1	0
2020	6	6	0	2	1
2021	4	4	0	1	1

d

Sociodemographic Analysis					
	Age	Sex	BMI	Race	Ethnicity
2015	3	2	0	0	0
2016	0	0	0	0	0
2017	1	2	0	0	0
2018	1	0	0	0	0
2019	1	1	0	1	0
2020	2	1	0	1	0
2021	0	0	0	0	0