

Reporting of Race and Ethnicity in SLE Studies in High-Impact Rheumatology Journals

Idil Eroglu¹, Lisa G Suter^{2,3}, Hailey Baker² 

¹Internal Medicine, Yale School of Medicine, New Haven, CT, USA; ²Internal Medicine (Rheumatology), Yale School of Medicine, New Haven, CT, USA; ³Veterans Health Administration Medical Center, West Haven, CT, USA

Correspondence: Lisa G Suter, Yale School of Medicine, Section of Rheumatology, 300 Cedar Street, New Haven, CT, 06510, USA, Tel +1 203-785-2453, Email lisa.suter@yale.edu

Purpose: Appropriate reporting of race and ethnicity in rheumatology research is critical to ensure equity and diversity of study participants and findings, as sociodemographic factors can affect outcomes, particularly for systemic lupus erythematosus (SLE). *JAMA* published guidance on reporting of race and ethnicity, highlighting the importance of reporting appropriately and building on emerging guidance. This study aimed to quantify reporting of race and ethnicity in high-impact rheumatology journals to assess adherence to accepted reporting recommendations.

Patients and Methods: Studies investigating issues related to SLE published in three of the highest impact rheumatology journals between 1/1/2020-12/31/2023 were included. Manuscripts not involving human subjects were excluded. Two researchers (I.E. and H. B.) systematically abstracted sociodemographic variables to ensure consistent coding of data; conflicts were resolved by consensus. Descriptive statistics of each variable and reporting criteria were calculated.

Results: In all, 117 articles met inclusion criteria. Among these, 114 (97%) included any demographic data, 87 (74%) reported race, 51 (44%) reported ethnicity. Of those that reported race, 65 (75%) were comprised of a majority White race and only 7 studies (8%) met the Office of Management and Budget (OMB) minimum reporting criteria for race. Only 20 studies (23%) mentioned that racial and ethnic categories were self-reported by patients. Additionally, 32 studies included any comorbidities, and 18 studies included various other socio-economic factors.

Conclusion: Despite known racial and ethnic disparities in SLE care and outcomes, reporting of race and ethnicity is not standardized across SLE research in rheumatology journals. Most publications do not meet minimum suggested race and ethnicity reporting criteria.

Keywords: lupus erythematosus, systemic, racial groups, ethnicity, social determinants of health, diversity, equity, inclusion, sociodemographic factors

Introduction

Race and ethnicity are social constructs that poorly correlate with genetic risk,^{1,2} yet it is undeniable that they affect healthcare outcomes as sociodemographic influencers.^{3,4} Racial and ethnic minority patients wait longer to see a rheumatologist and experience a delay before initiation of biologic disease modifying antirheumatic drugs (bDMARDs), which may contribute to increased morbidity in these patients.^{5,6} Given the known impact of socio-demographic variables on outcomes in rheumatologic diseases, particularly SLE, it was decided to focus this study on SLE-specific studies.⁵⁻¹¹ Lower socioeconomic status and non-White race have been associated with more end organ damage from SLE, compared to those with higher socio-economic status and White race, respectively.⁷ Further, patients with lower levels of education and longer periods of high disease activity were more likely to be unable to work due to their disease than those with higher levels of education and shorter disease duration.⁷ Conversely, historically advantaged socioeconomic groups tend to experience improved healthcare outcomes. One study demonstrated that social support in SLE leads to improved outcomes and mental health, specifically in populations with already demonstrated advantages.⁸

Despite these established disparities, historically marginalized racial and ethnic groups remain underrepresented in rheumatological research studies.^{12,13} Further, reporting of race and ethnicity data, along with other relevant socio-demographic data, is lacking. A recent review by Olson et al found that there was no standardization for race across rheumatology guidelines; further, treatment recommendations based on clinical research often cited studies including majority White populations without discussing racial disparities or their structural causes.¹⁴ An increase in diverse representation among research participants is needed to improve equity. Researchers also must report their findings regarding race and ethnicity in an inclusive and unbiased manner for readers to make appropriate conclusions. Studies in other specialties have observed low rates of reporting race, ethnicity, and socioeconomic status in top journals.^{15,16} To address this, *JAMA* recently published guidance for reporting race and ethnicity in medical and science journals.^{17,18} To improve fairness and equity, Flanagan et al recommends including the source of race and ethnicity data within the methods section, using specific categories over generalized terms, reporting this information in the results section, and including reasons for its inclusion. The Office of Management and Budget (OMB) has also published minimum categories for race and ethnicity groups to be included as part of the government-wide standard for race and ethnicity data collection.¹⁹ These minimum categories for race are: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White.¹⁹ The minimum categories for ethnicity are: Hispanic or Latino and Not Hispanic or Latino.¹⁹

Currently, rheumatology journals each have their own submissions guidelines regarding the reporting of race and ethnicity data. Even among the highest ranked journals, there is no consensus regarding the reporting of race and ethnicity. *Annals of Rheumatic Diseases* does not mention race and ethnicity, *The Lancet* encourages authors to consider diversity during study enrollment, whereas *Arthritis and Rheumatology* provides detailed criteria for race and ethnicity inclusion.

To improve transparency and equity in reporting of rheumatological research, it is imperative to first understand current reporting practices on race and ethnicity in rheumatology journals. On review, there have been no published studies in the field of rheumatology investigating current reporting practices on race and ethnicity. This report provides a realistic illustration of reporting practices in rheumatology, allowing research to evolve towards the goal of improving equity.

This study aimed to assess the reporting of demographic information, including race and ethnicity, in three top-tiered rheumatology journals in recent years.

Materials and Methods

Three of the highest-ranked rheumatology journals were identified and chosen according to the Scimago Journal Rank: *Annals of Rheumatic Diseases*, *The Lancet Rheumatology*, and *Arthritis and Rheumatology*. In collaboration with a professional medical research librarian, researchers identified all studies involving human subject data published between January 2020 – December 2023 with at least one author based in the U.S. using the following search terms to identify publications: systemic lupus erythematosus (Libman sacks or Libman-sacks), (lupus or lupovisceritis or erythematoses visceralis or SLE), (United States or USA), “2020”, “2021”, “2022”, “2023”. Both clinical and non-clinical studies were included if they involved human subjects or human data. Manuscripts were excluded if they did not involve human subjects. Studies included prospective cohort studies, retrospective cohort studies, retrospective case-control studies, cross sectional studies, randomized controlled trials, genomic analyses, laboratory research, and machine learning studies. Laboratory studies, genomic analysis, and machine learning studies were only analyzed if they included human subject data within their research. As this work was accomplished for quality improvement purposes, institutional review board approval was not sought.

To ensure consistency of coded data, two researchers (IE. and H.B) reviewed all articles for the type of study and coded information regarding race, ethnicity, age, sex, primary language spoken, comorbid smoking, comorbid obesity or BMI, any other medical comorbidities, income level or socio-economic status (SES), transportation access, employment status, health insurance status, urban vs rural living setting, country of residence, self-reported race, explanation for including race, food insecurity, interpersonal safety, housing insecurity, and utilities; discrepancies were resolved via consensus. Majority White race was designated if the largest racial group included was White. Studies met OMB minimum criteria if they included at least four out of five categories.

Descriptive statistics were utilized to qualitatively analyze reporting practices across included papers. Median, percentage, and range were used to overview reporting of each data, with comparisons made between papers focusing on clinical research versus laboratory research. These studies were also compared over the three-year period to qualitatively assess for changes in reporting practices over this period.

Results

A total of 117 articles met inclusion criteria: 74 studies were from *Arthritis and Rheumatology*, 33 from *Annals of the Rheumatic Diseases*, and 10 from *The Lancet Rheumatology*. Among these papers, 83 (71%) involved patient populations within the United States and 16 papers included other disease processes in addition to SLE.

Characteristics of these studies are described in Table 1. Among included studies, 114 (97%) included any demographic data, 111 (95%) reported age of participants, 113 (97%) reported biological sex, 87 (74%) reported race, and 51

Table 1 Characteristics of Studies and Reporting of Sociodemographic Data

Characteristic	N or Median	% or Range
Among all included studies	N=117	
Type of study		
<i>Clinical studies</i>	79	68%
Observational clinical studies	53	45%
Randomized control trials	26	22%
<i>Non-clinical studies</i>	38	32%
Included patients from the United States	83	71%
Reported demographic data		
<i>Any demographic data</i>	114	97%
Age	111	95%
<i>Biological sex</i>	113	97%
Race	87	74%
Ethnicity	51	44%
Data included in results section	75	64%
Among studies reporting race and ethnicity data	N=87	
Source of race and ethnicity data		
<i>Patient</i>	20	23%
<i>Physician</i>	1	1%
<i>Unknown</i>	69	76%
Alphabetical categorization	18	21%
Median number of categories for race*	4	1, 12
OMB minimum standard met**	7	8%
Majority White race	65	75%
Among studies reporting any demographic data	N=114	
Reporting of other comorbidities		
<i>Any medical comorbidities***</i>	32	28%
<i>Obesity or Body Mass Index (BMI)</i>	28	25%
<i>Smoking history</i>	26	23%
Reporting of other socio-economic factors		
<i>Education level</i>	12	11%
<i>Income or socio-economic status (SES)</i>	6	5%
<i>Urban versus rural setting</i>	4	4%
<i>Health insurance status</i>	3	3%
<i>Employment status</i>	1	<1%

Notes: *Median number of categories for race excludes the categories "unknown" and "missing". **OMB minimum standard met" denotes studies that included at least four out of five of the following categories: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White. ***Any medical comorbidities" includes other medical diagnoses not directly resulting from rheumatic or autoimmune diseases, such as type 2 diabetes.

(44%) reported ethnicity. No papers differentiated between biological sex and gender. Most papers included this information within the results section of the main manuscript (64%). Three studies were specifically studying one population and thus only included one group for race; these were included in the analysis given the limited impact on the overall results.

Specific sociodemographic and social risk information reported is also described in Table 1. The identifier of race/ethnicity (patient or proxy versus provider) was not described for 76% of studies. Only 21% of papers alphabetically categorized categories of race as *JAMA* guidelines suggest. Papers included a median of 4 categories for race, ranging from 1 to 12 categories. The OMB minimum standard was only met in 7 studies (8%). Most included a majority White population (75%). Other medical comorbidities were reported by 28% of studies, whereas 23% included smoking history and 25% included BMI or obesity data. Education level attained by participants was included in 12 studies (11%), income or socioeconomic status was included in 6 (5%), health insurance status in 3 (3.4%), and employment status in 1 (<1%). No studies reported primary language spoken by participants, food insecurity, interpersonal safety, housing insecurity, transportation insecurity, or utilities. A comparison of annual reporting trends between years 2020 and 2023 demonstrated no substantive improvement over time (Figure 1). Age and sex remained the most reported data, with a lower reporting rate of race and ethnicity, medical comorbidities, and other socioeconomic factors, respectively. There were no clear trends and no significant changes in reporting, though visually there seems to be a decrease in reporting over the three years depicted. Clinical studies showed consistently higher reporting of sociodemographic data than non-clinical studies (Figure 2). As seen in Figure 2, clinical studies reported on age and sex, race and ethnicity, medical comorbidities, and other socio-economic factors more frequently than non-clinical studies. Studies without any U.S. patients were less likely than studies including U.S. patients to report race and ethnicity (41% vs 88%, respectively), medical comorbidities (21% vs 30%), and other socioeconomic factors (9% vs 18%).

Discussion

Top-ranked rheumatology journals were evaluated for compliance with published national guidance on reporting of sociodemographic variables, including race and ethnicity, in SLE research. These findings suggest that most published papers regarding SLE in three top-tier journals do not meet OMB minimum standards and do not sufficiently delineate

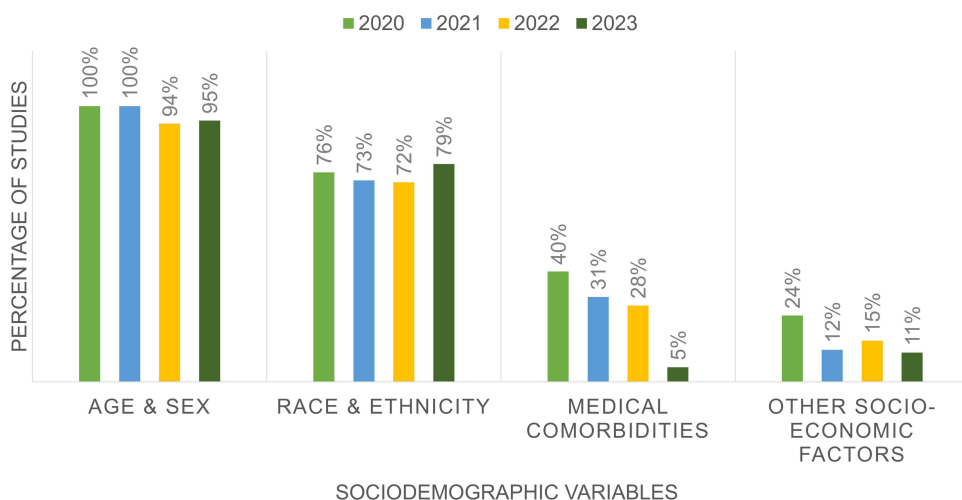


Figure 1 Reporting of sociodemographic data by year. Visual comparison of the reporting of various sociodemographic variables by year, from 2020 to 2023. The x-axis is the sociodemographic variable of interest, whereas the y-axis is the percentage of studies that reported on each variable. Categories of comparison included age and sex, race and ethnicity, medical comorbidities, and other socio-economic factors. The “Other socio-economic factors” category includes education level, income or socioeconomic status, urban versus rural setting, employment status, health insurance status, and transportation access. Visual comparison of reporting trends spanning through 2020 to 2023 seen in this figure demonstrated no substantive improvement over time. Reporting trends were highest for age and sex data, then decreased progressively with race and ethnicity, medical comorbidities, and other socio-economic factors.

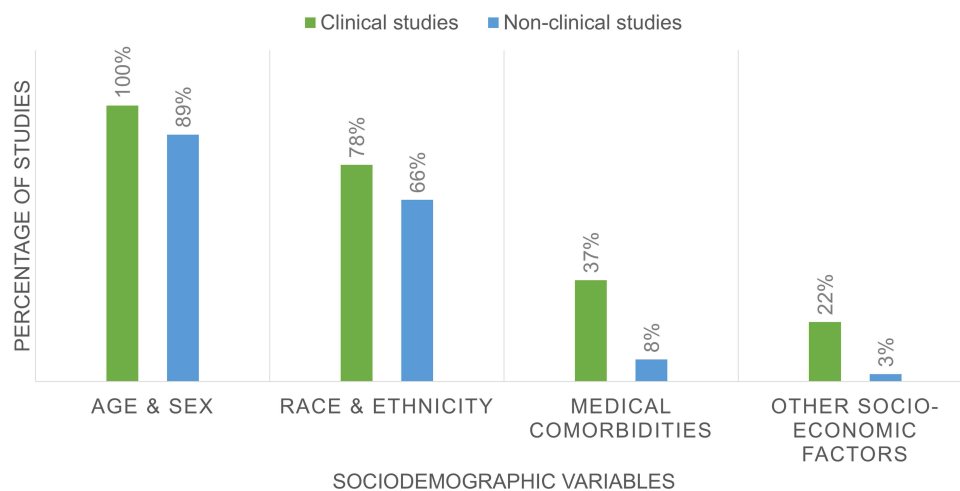


Figure 2 Reporting of sociodemographic data by study type. Comparison of reporting of sociodemographic data by study type: clinical versus non-clinical. Clinical studies include observational clinical studies and randomized control trials. Non-clinical studies include laboratory research or genomic analyses which involve human samples or data. Similarly to Figure 1, the x-axis is the sociodemographic variable of interest, whereas the y-axis is the percentage of studies that reported on each variable. Categories of comparison included age and sex, race and ethnicity, medical comorbidities, and other socio-economic factors. The “Other socio-economic factors” category includes education level, income or socio-economic status, urban versus rural setting, employment status, health insurance status, and transportation access. Clinical papers have higher reporting percentages for age and sex, race and ethnicity, medical comorbidities, and other socioeconomic factors. Similarly to the reporting trends in Figure 1, the reporting of age and sex was highest, with progressively decreasing reporting of race and ethnicity, medical comorbidities, and other socio-economic factors.

race and ethnicity data. Although most studies reported race and ethnicity information, there was no standardization of how these data were presented. Further, there was no significant improvement in reporting over time. This was unexpected to find no discernible increase in reporting within the study period, even with multiple external factors elevating this topic during the years included in this study. The health outcome disparities by race and ethnicity identified during the COVID pandemic were a stark reminder that social determinants of health can no longer be ignored.^{20–22}

There are limited publications on the inclusion of race and ethnicity data, among other sociodemographic variables, in rheumatology research. This study is the first to analyze the reporting of sociodemographic information including race and ethnicity data among research reported in top rheumatology journals. *JAMA* guidelines outline specific methods in which to report race and ethnicity information, with a goal of increasing clarity and equity. Similarly, the OMB has outlined minimum standards for reporting of race and ethnicity data. In the present study, only 7 (8%) studies met these standards. Few studies commented on how race was defined or collected (patient- or clinician-reported) or why race data were included. Even fewer considered other sociodemographic information such as income, education, health insurance status, or access to healthcare.

This investigation focused on the highest impact journals over recent years, but this study is limited to only the observations made in articles published within these specific parameters. However, the wide array of study designs included in this review, from randomized control trials to non-clinical studies, renders the observations more applicable to a broader readership. It is important to recognize that reporting of race and ethnicity data is limited by the data that researchers have access to and what their electronic medical records allow them to collect. As of January 1, 2024, the Centers for Medicare and Medicaid Services (CMS) moved from voluntary to mandatory screening by hospitals in the Inpatient Quality Reporting program for five social risk domains: food insecurity, interpersonal safety, housing insecurity, transportation insecurity, and utilities.²³ As of January 1, 2025, CMS has started voluntary reporting of social determinants of health in outpatient settings such as hospital outpatient departments (HOPDs), rural emergency hospitals (REHs) and ambulatory surgical centers (ASCs); mandatory reporting will begin in 2026.²⁴ This recent focus on collection of social determinants of health data by the CMS may improve collection of such data, resulting in increased reporting in research in the future. In this study, there were no papers that reported on these five social risk domains.

Additionally, because race and ethnicity are societal constructs, they are influenced by changes in society and culture over time. The OMB updated their guidelines on March 28, 2024. This update uses one compounded question for

collecting race and ethnicity data with the option to choose as many categories as apply and adds “Middle Eastern or Northern African” to the list of minimum categories. This work was completed prior to this new standard update, and thus does not consider this new guidance, but this study still contributes to highlighting this issue with the ultimate goal of improving the reporting of social risk data in future research. Many journals have proactively addressed the evolving nature of race and ethnicity reporting by recommending authors explain the research-specific rationale for examining race and ethnicity and use standardized approaches to defining categories. While it may be unrealistic to expect perfect uniformity in race and ethnicity reporting, increased appreciation of the complexities of race and ethnicity definitions and categorizations should improve the quality of medical research in the same way more rigorous methodological standards have. While these evolving standards may be considered a limitation, this study used currently accepted federal standards for assessing race and ethnicity at the time of this work. It remains to be seen how the change in OMB reporting standards that will take effect in 2030 will influence race and ethnicity reporting in healthcare research.

Submission guidelines vary between journals, which likely affects how sociodemographic variables are reported by authors. In addition, there may be differences in how race and ethnicity data are collected and treated internationally versus in the United States. Some journals include specific instructions for authors regarding the inclusion of race and ethnicity data, whereas others do not. *Arthritis and Rheumatology* is a United States based journal which includes specific instructions for the inclusion of this data, and has an editor dedicated to the review of race and ethnicity data. *Annals of Rheumatic Diseases* and *The Lancet Rheumatology* are based in the United Kingdom, whereas *Arthritis and Rheumatology* is based in the United States. These differences may influence how their submission guidelines and authors treat race and ethnicity data, as recommendations in the United States may not be seen as applicable internationally. However, international journals should also be discussing race, ethnicity, and other social determinants of health, as social constructs and presenting these data in a systematic way. United States researchers and clinicians are key audiences for the selected journals and racism and racial bias are not limited to the United States.²⁵ For these reasons, it was chosen to include patient populations outside of the US but it is important to acknowledge that meeting U.S.-based guidelines may be difficult for international journals. The addition of inclusivity editors to journals’ editorial staff is likely to improve adherence to OMB and/or other standardized reporting guidelines.

Finally, researchers may have access to a limited subset of data, which limits what their studies can report on. If race and ethnicity data are not gathered at the outset by clinicians or researchers, it provides a barrier to reporting on this in their results. A ground-up approach would be needed to improve researchers’ access to the race and ethnicity data so that they can report on it. Therefore, prioritizing collection of race and ethnicity data in the electronic medical record and other data sources will improve access to these data for researchers.

Limitations to this study include the choice of three journals as a representation of the field. While the inclusion of a broader range of journals would have increased sample size and may have provided further insights, choosing a subset of journals created a more feasible and yet applicable analysis to identify challenges in the field. The journals chosen are merely a representation of the general trend, as there are countless other journals that are valuable in rheumatology research; however, even this small subset demonstrated a considerably low rate of reporting of sociodemographic factors. Another limitation to this study is the use of descriptive statistics rather than in-depth statistical analyses. Due to the low rate of studies meeting reporting criteria, and the lack of prior similar studies, a descriptive study rather than an experimental approach felt more appropriate to depict the general trends of the field. Finally, the analysis was limited to the past few years to represent an updated but concise range of information. Despite these limitations, this study aims to portray insight into the landscape of how social determinants of health are reported in rheumatology research.

While the reporting of race may not directly influence the diversity of study participants, it does increase transparency of rheumatological research. With improved understanding of their influence, rheumatologists can work toward improving outcomes observed in SLE and other rheumatologic diseases who are most impacted. Journals may consider detailing *JAMA* and OMB standards within their submission guidelines to improve adherence. This paper increases awareness of this issue with the ultimate goal of improving reporting practices across all rheumatology research.

In conclusion, this study highlights that sociodemographic factors, especially race and ethnicity, are underreported even in top-ranked rheumatology journals that have high standards for publication. It is increasingly important to highlight inconsistencies in reporting race and ethnicity in rheumatology journals so that researchers and journals can

improve practices according to JAMA and OMB standards with the ultimate goal of improving equity in research for patients with rheumatological diseases.

Acknowledgments

The authors would like to thank Alyssa Grimshaw, Clinical Research and Education Librarian, for her contributions to the literature search for this study.

Disclosure

Dr. Suter receives salary support from the Center for Medicare and Medicaid Services as project director of contracts to develop, maintain, and implement quality measures in federal payment programs. The authors report no other conflicts of interest in this work.

References

- Borrell LN, Elhawary JR, Fuentes-Afflick E, et al. Race and genetic ancestry in medicine - a time for reckoning with racism. *N Engl J Med*. 2021;384(5):474–480. doi:10.1056/NEJMms2029562
- Bamshad M, Wooding S, Salisbury BA, Stephens JC. Deconstructing the relationship between genetics and race. *Nat Rev Genet*. 2004;5(8):598–609. doi:10.1038/nrg1401
- Liao Y, Tucker P, Okoro CA, et al. REACH 2010 surveillance for health status in minority communities - United States, 2001–2002. *MMWR Surveill Summ*. 2004;53(6):1–36.
- Fiscella K, Sanders MR. Racial and ethnic disparities in the quality of health care. *Annu Rev Public Health*. 2016;37(1):375–394. doi:10.1146/annurev-publhealth-032315-021439
- Riad M, Dunham DP, Chua JR, et al. Health disparities among hispanics with rheumatoid arthritis: delay in presentation to rheumatologists contributes to later diagnosis and treatment. *J Clin Rheumatol*. 2020;26(7):279–284. doi:10.1097/RHU.0000000000001085
- Yip K, Navarro-Millan I. Racial, ethnic, and healthcare disparities in rheumatoid arthritis. *Curr Opin Rheumatol*. 2021;33(2):117–121. doi:10.1097/BOR.0000000000000782
- Sutcliffe N, Clarke AE, Gordon C, Farewell V, Isenberg DA. The association of socio-economic status, race, psychosocial factors and outcome in patients with systemic lupus erythematosus. *Rheumatology*. 1999;38(11):1130–1137. doi:10.1093/rheumatology/38.11.1130
- Bae SC, Hashimoto H, Karlson EW, Liang MH, Daltroy LH. Variable effects of social support by race, economic status, and disease activity in systemic lupus erythematosus. *J Rheumatol*. 2001;28(6):1245–1251.
- Penabad IC. The prism of inequity: health disparities in rheumatoid arthritis. *J Rheumatol*. 2022;49(9):1070–1071. doi:10.3899/jrheum.220232
- Ciofoaia EI, Pillarisetty A, Constantinescu F. Health disparities in rheumatoid arthritis. *Ther Adv Musculoskelet Dis*. 2022;14:1759720X221137127. doi:10.1177/1759720X221137127
- Lim SS, Helmick CG, Bao G, et al. Racial disparities in mortality associated with systemic lupus erythematosus - Fulton and DeKalb Counties, Georgia, 2002–2016. *MMWR Morb Mortal Wkly Rep*. 2019;68(18):419–422. doi:10.15585/mmwr.mm6818a4
- Strait A, Castillo F, Choden S, et al. Demographic characteristics of participants in rheumatoid arthritis randomized clinical trials: a systematic review. *JAMA Network Open*. 2019;2(11):e1914745. doi:10.1001/jamanetworkopen.2019.14745
- Falasinu T, Chaichian Y, Bass MB, Simard JF. The representation of gender and race/ethnic groups in randomized clinical trials of individuals with systemic lupus erythematosus. *Curr Rheumatol Rep*. 2018;20(4):20. doi:10.1007/s11926-018-0728-2
- Olson RM, Feldman CH. A critical look at race-based practices in rheumatology guidelines. *Arthritis Care Res*. 2022;74(10):1602–1607. doi:10.1002/acr.24645
- Crnkovic C, Quiring R, Chapple AG, Bronstone A, Krause PC, Dasa V. Low rates of reporting race, ethnicity, and socioeconomic status in studies published in top orthopaedic journals. *J Bone Joint Surg Am*. 2022;104(14):1244–1249. doi:10.2106/JBJS.21.01159
- Maduka RC, Broderick M, White EM, et al. The reporting of race and ethnicity in surgery literature. *JAMA Surg*. 2021;156(11):1036–1041. doi:10.1001/jamasurg.2021.3752
- Flanagin A, Frey T, Christiansen SL. Committee AMAMoS. updated guidance on the reporting of race and ethnicity in medical and science journals. *JAMA*. 2021;326(7):621–627. doi:10.1001/jama.2021.13304
- Flanagin A, Frey T, Christiansen SL, Bauchner H. The reporting of race and ethnicity in medical and science journals: comments invited. *JAMA*. 2021;325(11):1049–1052. doi:10.1001/jama.2021.2104
- Office of Management and Budget. Revisions to the standards for the classification of federal data on race and ethnicity. Notice. *Fed Regist*. 1997;62(210):58782–58790.
- Khanijahani A, Iezadi S, Gholipour K, Azami-Aghdash S, Naghibi D. A systematic review of racial/ethnic and socioeconomic disparities in COVID-19. *Int J Equity Health*. 2021;20(1):248. doi:10.1186/s12939-021-01582-4
- Mackey K, Ayers CK, Kondo KK, et al. Racial and ethnic disparities in COVID-19-related infections, hospitalizations, and deaths: a systematic review. *Ann Intern Med*. 2021;174(3):362–373. doi:10.7326/M20-6306
- Magesh S, John D, Li WT, et al. Disparities in COVID-19 outcomes by race, ethnicity, and socioeconomic status: a systematic-review and meta-analysis. *JAMA Network Open*. 2021;4(11):e2134147. doi:10.1001/jamanetworkopen.2021.34147
- Centers for Medicare & Medicaid Services (CMS) HaHSH. Medicare and medicaid programs; CY 2024 payment policies under the physician fee schedule and other changes to part B payment and coverage policies; medicare shared savings program requirements; medicare advantage; medicare and medicaid provider and supplier enrollment policies; and basic health program. 2023.

24. All-Inclusive Rate Add-On Payment for High-Cost Drugs Provided by Indian Health Service and Tribal Facilities Federal Register. Medicare and medicaid programs: hospital outpatient prospective payment and ambulatory surgical center payment systems; quality reporting programs, including the hospital inpatient quality reporting program; health and safety standards for obstetrical services in hospitals and critical access hospitals; prior authorization; requests for information; medicaid and chip continuous eligibility; medicaid clinic services four walls exceptions; individuals currently or formerly in custody of penal authorities; revision to medicare special enrollment period for formerly incarcerated individuals.
25. End of mission statement by the United Nations Working group of experts on People of African descent following its country visit to the UK (18-27 January 2023), containing its preliminary findings and recommendations. 2023.

Open Access Rheumatology: Research and Reviews

Dovepress
Taylor & Francis Group

Publish your work in this journal

Open Access Rheumatology Research and Reviews is an international, peer-reviewed, open access journal publishing original research, reports, editorials, reviews and commentaries on all aspects of clinical and experimental rheumatology in the clinic and laboratory including the following topics: Pathology, pathophysiology of rheumatological diseases; Investigation, treatment and management of rheumatological diseases; Clinical trials and novel pharmacological approaches for the treatment of rheumatological disorders. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/open-access-rheumatology-research-and-reviews-journal>