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Boston
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June 18–June 21

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Title: Social determinants of health influence clinical outcomes of patients undergoing rotator cuff repair: a systematic review

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The Social Determinants of Health (SDOH) pose significant barriers to healthcare at all levels

- SDOH - the collection of historical, institutional, and environmental conditions that influence an individual's access to healthcare and subsequent health-related outcomes
- Previous literature shows that SDOH influence outcomes following ACL tears, meniscal tears, and various orthopedic injuries



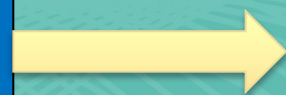
Rotator Cuff Tears Are Among The Leading Causes of Shoulder Joint Pain and Disorders of Mobility

- 25% of patients in their 60s have a rotator cuff tear – this doubles to 50% of individuals 80+
- Despite advancements in the diagnosis and subsequent treatment of rotator cuff tears, rotator cuff injuries remain a prevalent issue for many patients



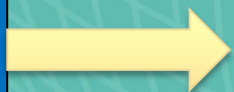
Purpose & Hypothesis

Purpose



To investigate the influences that SDOH have on accessing appropriate orthopedic treatment, as well as its effects on surgical and patient-reported outcomes following surgical RCR.

Hypothesis

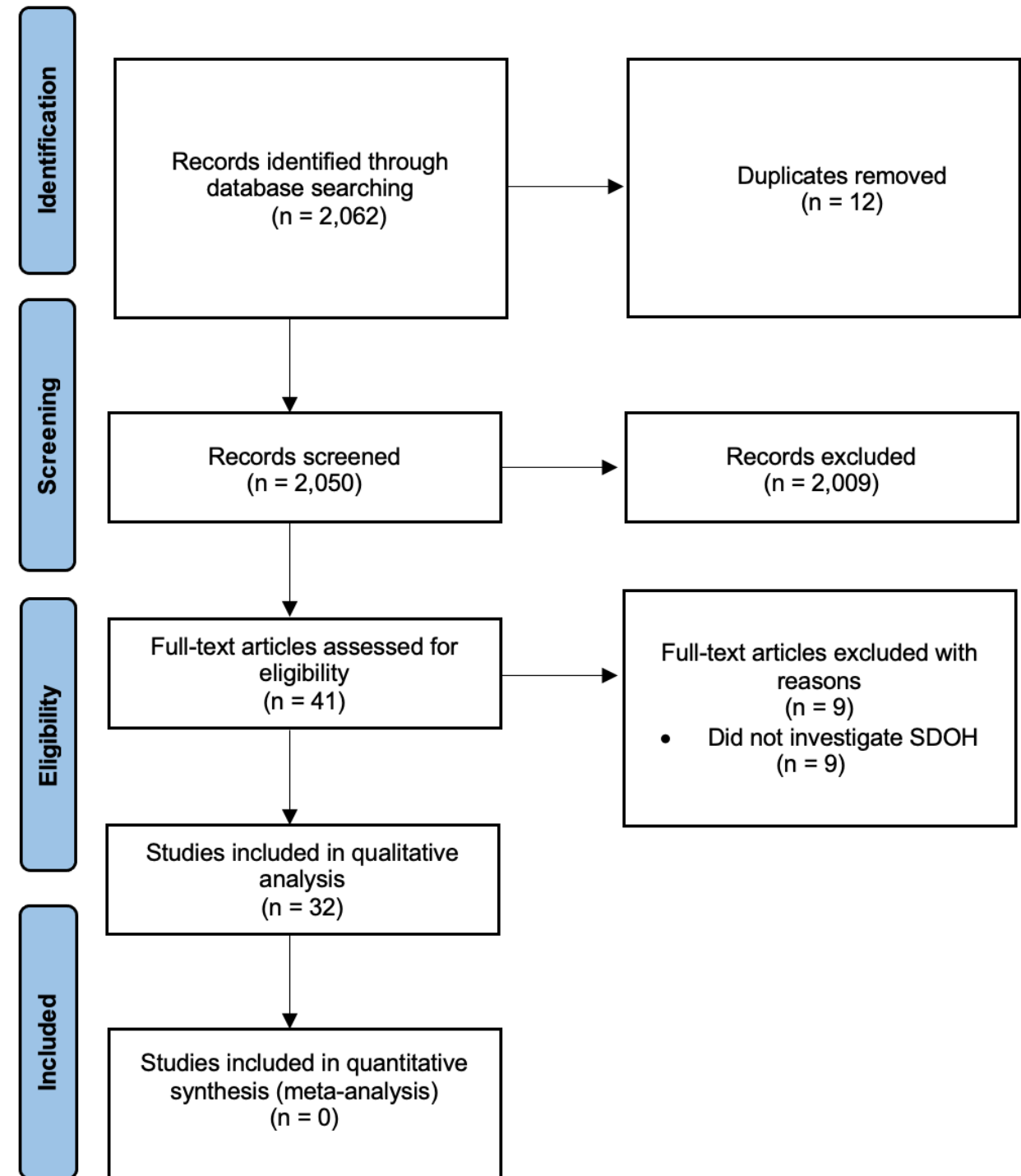


Specific SDOH will contribute to impediments of access to orthopedic care for RCR and poor outcomes postoperatively.



32 Studies Were Included

- 102,372 patients, 669 physical therapy clinics, and 71 orthopedic surgery practices
- 14 studies – Gender
- 10 studies – Occupation & Worker’s Compensation Status
- 8 studies – Comorbidities
- 6 studies – Smoking Status
- 5 studies – Insurance Status
- 5 studies – Education Level
- 5 studies – Race & Ethnicity
- 4 studies – Place of Residence & Region of Surgery
- 4 studies – Preoperative Narcotic Use
- 3 studies – Employment Status



Multivariate Analysis

- Female gender
- Labor-intensive occupation & Workers' compensation claims
- Comorbidities
- Tobacco use
- Federally-subsidized insurance
- Lower education level
- Racial/ethnic minority status
- Low-income place of residence & Low-volume surgery regions
- Unemployment
- Preoperative narcotic use



contribute to delays in access to healthcare and/or more severe disease state upon presentation.



Key Takeaways

Race/Ethnicity

Non-White patients experienced significant delays to surgical RCR. Black and Hispanic Patients were more likely to present to low-volume surgeons and facilities. **Black race patients who were dual-eligible for Medicare and Medicaid had the lowest likelihood of receiving initial surgery and highest odds of watchful waiting**

Education Level

Per Dalton et al., **the current online literature on rotator cuff tears and RCR is of a low standard and is often written at too high a level for the general population to comprehend.**

Insurance Status

It was found that patients with federally-subsidized insurance were nearly **10-times less likely than privately-insured patients to obtain an appointment at an orthopaedic practice**, predisposing a more severe disease state upon presentation.



Limitations

- The PROGRESS-PLUS framework was used to guide the methodology of this study – this framework does not include social capital and it was therefore not accounted for in this study.
- Included studies employed various definitions of SDOH, precluding statistical pooling of results, primarily with regards to socioeconomic status.
- Although the majority of included studies were conducted in the United States, this review includes a variety of patient demographics, including data from 7 different countries
- This study is unable and does not attempt to determine the relative contribution of each, individual SDOH on studied outcomes. Rather it is a purview of SDOH represented within the literature and to which clinical outcomes they affect.



SDOH Influence RCR Outcomes

References (1/3)

1. Agarwal P, Jones EA, Devaiah AK. Education and insurance status: Impact on treatment and survival of sinonasal cancer patients.

Laryngoscope 2020;130:649-58. <https://doi.org/10.1002/lary.28097>

2. Bloom DA, Baron SL, Luthringer TA, Alaia MJ, Strauss EJ, Jazrawi LM, et al. Preoperative opioid education has no effect on opioid use in patients undergoing arthroscopic rotator cuff repair: a prospective, randomized clinical trial. J Am Acad Orthop Surg 2021; 29:e961-8. <https://doi.org/10.5435/jaaos-d-20-00594>

3. Boissonnault WG, Badke MB, Wooden MJ, Ekedahl S, Fly K. Patient outcome following rehabilitation for rotator cuff repair surgery: the impact of selected medical comorbidities. J Orthop Sports Phys Ther 2007;37:312-9. <https://doi.org/10.2519/jospt.2007.2448>

4. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. Public Health Rep 2014;129:19-31. <https://doi.org/10.1177/003335491412915206>

5. Chakravarty K, Webley M. Shoulder joint movement and its relationship to disability in the elderly. J Rheumatol 1993;20:1359-61.

6. Chapman CG, Fildes SS, Anigden SA, Tokish JM, Chen P,

Brooks JM. Treatment for rotator cuff tear is influenced by demographics and characteristics of the area where patients live. JB JS

Open Access 2018;3:e0005. <https://doi.org/10.2106/jbjs.Oa.18.00005>

7. Cheesman Q, DeFrance M, Stenson J, Weekes D, Feldman J, Abboud J, et al. The effect of preoperative education on opioid consumption in patients undergoing arthroscopic rotator cuff repair: a prospective, randomized clinical trial-2-year follow-up. J Shoulder Elbow Surg 2020;29:1743-50. <https://doi.org/10.1016/j.jse.2020.04.036>

8. Cho CH, Ye HU, Jung JW, Lee YK. Gender affects early postoperative outcomes of rotator cuff repair. Clin Orthop Surg 2015;7:234-40. <https://doi.org/10.4055/cios.2015.7.2.234>

9. Cuff DJ, O'Brien KC, Pupello DR, Santoni BG. Evaluation of factors affecting acute postoperative pain levels after arthroscopic rotator cuff repair. Arthroscopy 2016;32:1231-6. <https://doi.org/10.1016/j.arthro.2015.12.021>



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References (2/3)

10. Cumpston M, Li T, Page MJ, Chandler J, Welch VA, Higgins JP, et al. Updated guidance for trusted systematic reviews: a new edition of the Cochrane Handbook for Systematic Reviews of Interventions. Cochrane Database Syst Rev 2019;10:ED000142. <https://doi.org/10.1002/14651858.ED000142>
11. Curry EJ, Penvose IR, Knapp B, Parisien RL, Li X. National disparities in access to physical therapy after rotator cuff repair between patients with Medicaid vs. private health insurance. JSES Int 2021;5: 507-11. <https://doi.org/10.1016/j.jseint.2020.11.006>
12. Dalton DM, Kelly EG, Molony DC. Availability of accessible and high-quality information on the internet for patients regarding the diagnosis and management of rotator cuff tears. J Shoulder Elbow Surg 2015;24:e135-40. <https://doi.org/10.1016/j.jse.2014.09.036>
13. Dang A, Davies M. Rotator cuff disease: treatment options and considerations. Sports Med Arthrosc Rev 2018;26:129-33. <https://doi.org/10.1097/JSA.000000000000207>
14. Daniels SD, Stewart CM, Garvey KD, Brook EM, Higgins LD, Matzkin EG. Sex-based differences in patient-reported outcomes after arthroscopic rotator cuff repair. Orthop J Sports Med 2019;7: 2325967119881959. <https://doi.org/10.1177/2325967119881959>
15. Delanois RE, Tarazi JM, Wilkie WA, Remily E, Salem HS, Mohamed NS, et al. Social determinants of health in total knee arthroplasty : are social factors associated with increased 30-day post-discharge cost of care and length of stay? Bone Joint J 2021; 103-B:113-8. <https://doi.org/10.1302/0301-620X.103B6.BJJ-2020-2430.R1>
16. Frangiamore S, Dornan GJ, Horan MP, Mannava S, Fritz EM, Hussain ZB, et al. Predictive modeling to determine functional outcomes after arthroscopic rotator cuff repair. Am J Sports Med 2020;48: 1559-67. <https://doi.org/10.1177/0363546520914632>
17. Friedman RJ, Cheung EV, Flurin PH, Wright T, Simovitch RW, Bolch C, et al. Are age and patient gender associated with different rates and magnitudes of clinical improvement after reverse shoulder arthroplasty? Clin Orthop Relat Res 2018;476:1264-73. <https://doi.org/10.1007/s11999-0000000000000270>
18. Fu MC, O'Donnell EA, Taylor SA, Aladesuru OM, Rauck RC, Dines JS, et al. Delay to arthroscopic rotator cuff repair is associated with increased risk of revision rotator cuff surgery. Orthopedics 2020; 43:340-4. <https://doi.org/10.3928/01477447-20200923-02>



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References (3/3)

19. Gutman MJ, Patel MS, Katakam A, Liss N, Zmistowski BM, Lazarus MD, et al. Understanding outcomes and the ability to return to work after rotator cuff repair in the workers' compensation population. *Cureus* 2021;13:e14213. <https://doi.org/10.7759/cureus.14213>
20. Hammond JW, Queale WS, Kim TK, McFarland EG. Surgeon experience and clinical and economic outcomes for shoulder arthroplasty. *J Bone Joint Surg Am* 2003;85:2318-24. <https://doi.org/10.2106/00004623-200312000-00008>
21. Henn RF 3rd, Tashjian RZ, Kang L, Green A. Patients with workers' compensation claims have worse outcomes after rotator cuff repair. *J Bone Joint Surg Am* 2008;90:2105-13. <https://doi.org/10.2106/jbjs.F.00260>
22. Higgins JP, Altman DG, Gotzsche PC, Juni P, Moher D, Oxman AD, et al. The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ* 2011;343:d5928. <https://doi.org/10.1136/bmj.d5928>
23. Imai T, Gotoh M, Hagie K, Fukuda K, Ogino M, Madokoro K, et al. Factors Affecting Return to Work in Patients Undergoing Arthroscopic Rotator Cuff Repair. *Prog Rehabil Med* 2019;4:20190006. <https://doi.org/10.2490/prm.20190006>
24. Johnson AH, Parkison A, Petre BM, Turcotte JJ, Redziniak DE. Racial disparities in outcomes of arthroscopic rotator cuff repair: a propensity score matched analysis using multiple national data sets. *J Orthop* 2022;30:103-7. <https://doi.org/10.1016/j.jor.2022.02.022>
25. Judge A, Welton NJ, Sandhu J, Ben-Shlomo Y. Equity in access to total joint replacement of the hip and knee in England: cross sectional study. *BMJ* 2010;341:c4092. <https://doi.org/10.1136/bmj.c4092>
26. Kim HM, Caldwell JM, Buza JA, Fink LA, Ahmad CS, Bigliani LU, et al. Factors affecting satisfaction and shoulder function in patients with a recurrent rotator cuff tear. *J Bone Joint Surg Am* 2014;96:106-12. <https://doi.org/10.2106/jbjs.L.01649>
27. Kim YK, Jung KH, Kim JW, Kim US, Hwang DH. Factors affecting rotator cuff integrity after arthroscopic repair for medium-sized or larger cuff tears: a retrospective cohort study. *J Shoulder Elbow Surg* 2018;27:1012-20. <https://doi.org/10.1016/j.jse.2017.11.016>