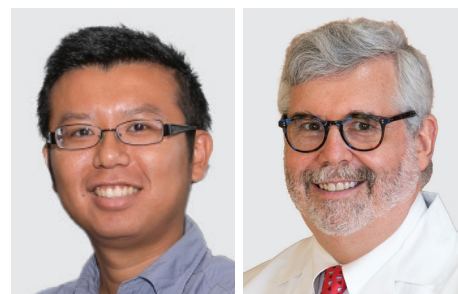


Editorial

Disparities in Diagnosis: A Call for Equity in Radiographic Axial Spondyloarthritis Care

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Timely diagnosis of radiographic axial spondyloarthritis (r-axSpA) is crucial for initiating effective treatment and reducing the long-term effects of this debilitating condition. Despite advances in imaging modalities and diagnostic criteria, the average delay in diagnosing r-axSpA remains alarmingly high at about 7 to 9 years.¹⁻³ This delay not only is due to the disease's gradual onset and variable presentation but also results from systemic disparities in healthcare access, delivery, and social determinants of health.

In this issue of *The Journal of Rheumatology*, Ferrandiz-Espadin and colleagues provide a comprehensive examination of how sex, race, ethnicity, and social needs affect diagnostic delays in r-axSpA. Using data from Boston Medical Center (BMC), a safety-net hospital with a racially and socioeconomically diverse patient population, the study highlights the persistent disparities in health care.⁴ Their findings show that patients with documented social needs experience diagnostic delays 21% longer than those without, which equates to an additional 7-month delay.⁴ These delays can worsen disease progression, lower quality of life, and reduce the effectiveness of available treatments.^{5,6}

The study's findings highlight several important issues. First, the increased diagnostic delays among patients with documented social needs emphasize how structural inequities affect health outcomes. Social challenges such as housing instability or lack of transportation can prevent patients from accessing timely care, attending follow-up appointments, or completing recommended diagnostic testing.⁷⁻⁹ These barriers underscore the need for healthcare systems to adopt a more holistic approach that addresses both clinical and social factors that

affect health. Second, the study revealed disparities based on race and ethnicity. Black and Hispanic/Latinx patients experienced longer diagnostic delays compared to White patients. These findings align with previous research showing that underrepresented groups often face systemic biases in health care, such as lower referral rates for specialized care and delayed access to diagnostic imaging,¹⁰ and may account for the lower prevalence of r-axSpA that has been reported among Black individuals.¹¹ Importantly, the authors place these disparities within the broader context of healthcare inequities and emphasize the need for targeted interventions to reduce diagnostic delays in these populations.

This study⁴ has several methodological and analytical strengths that enhance its contribution to the literature. First, the authors used the Observational Health Data Sciences and Informatics (OHDSI) platform and the Observational Medical Outcomes Partnership (OMOP) Common Data Model to standardize cohort identification and data analysis.^{12,13} This approach allowed them to integrate diverse datasets while ensuring reproducibility and transparency. Second, instead of using the more common Cox proportional hazards model, the authors employed an accelerated failure time (AFT) model. This choice is particularly appropriate, as the AFT model directly estimates the time to diagnosis and provides more intuitive interpretations of time-related outcomes.¹⁴ For example, the finding of a 21% delay in diagnosis can be directly interpreted as additional months of diagnostic wait time, which makes the results more actionable for clinicians and policymakers. Last, the study used a validated questionnaire (THRIVE) to assess social determinants of health, such as housing stability, food security, and transportation access.⁴ These factors, often overlooked in electronic health record (EHR)-based studies, are crucial for understanding healthcare inequities. By including these variables into their analyses, the authors provide a nuanced understanding of how social needs intersect with outcomes or health care.

Although this study provides valuable insights, it also highlights the limitations inherent in using EHR data from a single institution. The patient population at BMC, although diverse, may not fully represent that in other regions or institutions,

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particularly those with different demographic or socioeconomic profiles. Multicenter studies are needed to confirm these findings and investigate regional variations in diagnostic delays. Further, the reliance on retrospective data limits the ability to capture the entire diagnostic journey. For instance, the study could not include symptoms experienced before patients sought care at BMC or account for potential misdiagnoses during the earlier stages of disease. Similarly, the absence of granular data on healthcare providers' decision-making processes and patient-provider interactions limits the ability to identify specific factors, either individual or systemic, that contribute to delays in diagnosis. Finally, the categorization of race and ethnicity in EHRs often lacks nuance, with many patients classified as "other" or "unknown."^{15,16} This limitation highlights the need for better data collection to more accurately represent diverse patient populations. These points emphasize the need for more comprehensive, multicenter studies and improvements in EHR data practices to better understand and address diagnostic delays.

The findings of this study emphasize the urgent need to address diagnostic disparities in r-axSpA. To reduce these inequities, several strategies could be implemented from different perspectives:

1. *Enhanced provider education.* Primary care providers and general practitioners play a crucial role in recognizing early symptoms of r-axSpA and initiating referrals to rheumatologists. Educational initiatives should raise awareness of the heterogeneous clinical presentation of the disease, particularly in women and underrepresented racial and ethnic groups. Training programs should be developed to help clinicians identify and address implicit biases that may influence diagnostic pathways.
2. *Integration of social determinants of health.* Since physicians already face significant time constraints, integrating social determinants of health into clinical workflows could be made easier with simplified screening tools or through collaboration with care coordinators. Tools like the THRIVE questionnaire can help identify patients at risk of diagnostic delays due to social barriers.¹⁷ Targeted implementation of these tools, focusing on high-risk populations and partnerships with community organizations to provide resources like transportation assistance and housing support, would be especially beneficial.
3. *Streamlined referral pathways.* Delays in referrals to specialists are a significant contributor to prolonged diagnostic timelines. Implementing standardized referral criteria and using telemedicine could facilitate earlier evaluations by rheumatologists, particularly for patients in underserved or remote areas.
4. *Policy advocacy.* At the policy level, efforts to reduce healthcare disparities must focus on improving access to diagnostic services. Expanding Medicaid coverage, enhancing funding for safety-net hospitals, and addressing language barriers are critical steps toward achieving more equitable health care.¹⁸⁻²⁰

More research is needed to explore the role of healthcare providers and systems in contributing to delays. Multicenter collaborations using large-scale registries could help validate the results of this study⁴ and provide a broader understanding of diagnostic delays in different populations. Qualitative studies that examine provider-patient interactions, decision-making processes, and organizational factors could provide critical insights into the barriers faced by both patients and clinicians.^{2,10,21} Longitudinal studies that examine how targeted interventions affect diagnostic timelines and patient outcomes would also be valuable. Additionally, it is important to explore the long-term effects of diagnostic delays, including their impact on treatment outcomes, quality of life, and healthcare costs. By measuring these consequences, researchers can make a stronger case for investing in interventions to reduce delays.

Ferrandiz-Espadin and colleagues⁴ have made an important contribution to understanding the diagnostic disparities in r-axSpA. Their findings highlight that delays in diagnosis are caused by multiple factors and emphasize the need to address social determinants of health in order to achieve more equitable care. By implementing targeted interventions and advancing research in this area, the rheumatology community can make significant progress in reducing these disparities and improving outcomes for all patients with r-axSpA. This study serves as a call to action for clinicians, researchers, and policymakers to collaborate in closing these gaps and creating a more equitable healthcare system.

FUNDING

The authors declare no funding or support for this work.

COMPETING INTERESTS

The authors declare no conflicts of interest relevant to this article.

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