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EDITORIAL

Artificial Intelligence: Reflections on Its Use to Promote DEIA Principles for Residency Recruitment

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As a newly minted member of the core faculty at my residency program, I have been quickly graduated into a reflective process in reviewing our recruitment strategies and tools. We examine our ability to recruit in line with our mission and the merits of the residency class recruited. More explicitly, we focus conversations through a diversity, equity, inclusion, and accessibility (DEIA) lens, mirroring the collective efforts toward these values within family medicine training programs, as highlighted in this issue's article, "Holistic Review in Family Medicine Residency Programs: A Nationwide Survey of US Residency Directors: A CERA Study."[1]

The article by Truong et al reassures our discipline that programs across the nation support and are using holistic reviews of potential residency candidates as a tool to achieve diversity and inclusivity in recruitment. The article encourages us to examine the rubrics used in holistic reviews and consider broad implementation to increase diversity and inclusion in recruitment.

However, the challenges of holistic review are significant including dedicated faculty commitment, implementation of screening metrics that are diverse and free of bias, and time for each stage of the recruitment process.[2] For example, the 2023 application cycle saw 12,948 applications for family medicine, with the average applicant applying to 51 residencies.[3] Furthermore, a holistic review process includes application characteristics beyond discrete numbers and focus on applicant experiences and attributes.[1,2,4–8]

When I look at my program's holistic review for recruitment, my mind wonders to the en vogue technology at our disposal: generative artificial intelligence (AI).

While AI includes several different modalities of advanced intelligence, in basic terms, it consists of a machine-based model (or algorithm) that can make decisions and recommendations when provided with a set of human-fed data.[8]

Knowing the need and desire to pursue holistic reviews for residency recruitment, how can we leverage AI to create and ensure diverse and inclusive recruitment strategies? Several cases have already been presented in recruitment strategies within medical education using the backdrop of algorithms for recruitment already validated in other fields.[4–6]

For starters, AI algorithms may reduce faculty burden for screening the hundreds of applications that residencies receive to allow focused attention to applications that match program criteria. New York University (NYU) has published data in the undergraduate and graduate medical literature detailing algorithms used to assist in screening applications for medical school admissions and internal medicine recruitment, respectively.[5,6] In the model designed for admission invitation to medical school, the AI-led screening tool was found to be a novel approach that could provide admissions committees with initial recommendations.[5]

In addition to reducing recruitment screening fatigue, AI algorithms may also provide a true holistic review of potential candidates, as they can be programmed to use as many metrics and characteristics as the user desires.[4–7] The AI screening tool developed by Burk-Rafel et al used 60 characteristics to screen potential internal medicine candidates.[6] Applications that were screened using AI and those chosen by human review were then reviewed by the program director, who chose 20 more applications from the AI-screened applications for the next stage of recruitment.[6] As such, AI algorithms that have been developed and implemented in such studies have shown success in achieving the primary outcome of the holistic review: accepting applicants who would have otherwise been rejected by traditional screening methods that relied on more discrete data points.[8]

There are also subtle opportunities for AI to improve residency recruitment, providing programs with access to

larger candidacy pools. At the outset, AI can be used to review residency recruitment media. Language analysis for inclusivity and image recognition for diversity can remove bias verbiage and identify instances of underrepresentation or stereotyping with recruitment material, respectively.[9,10] AI-driven algorithms can assess the cultural sensitivity of recruitment materials by analyzing language tone, context, and cultural references.[11] These algorithms can analyze recruitment materials for implicit biases that may influence candidate perceptions and decision-making. By flagging biased language, imagery, or messaging, AI can help recruiters identify and mitigate unconscious biases that may inadvertently favor certain demographic groups over others.[10 11]

However, we cannot blindly use a piece of technology without understanding where it falters. First and foremost, the creation of algorithms is susceptible to bias inherent in the data sets that would be used to create the AI tool, including reliance on historical data reflecting systemic inequalities and underrepresentation of certain demographic groups.[11–13] Using a biased data set to develop an algorithm to promote DEIA principles for recruitment is a real risk that would need to be addressed before AI is widely accepted for use in this arena to avoid perpetuating bias and leading to more harm.[2,4–8,11–13] Additionally, the algorithms lack transparency, making it difficult to understand how decisions are made and assess the validity, reliability, and fairness of selection outcomes.[12] Without intention to promote transparency in AI algorithms, there will be an erosion of trust in the selection process and raise concerns about equity and accountability, like many of us fear. Lastly, use of any novel technology exacerbates the digital divide.[13] Using an AI platform for recruitment can widen the technology gap for residency programs and candidates alike. Candidates with accessibility limitations or diminished digital literacy may have difficulty navigating an AI recruitment platform. There are already examples of AI tools that are being accessed through subscriptions by applicants who use them for interview preparation and personal statement generation.[8] For programs, the cost of using AI for recruitment may be a barrier for implementation, putting the program at a disadvantage within the discipline.

Ultimately, as long as the results and recommendations from AI algorithms and platforms are not deterministic and the outcomes are expected to be under human review, AI can be used as counsel to accelerate DEIA initiatives within family medicine residencies, especially in the recruitment cycle.

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