Research Week 2022

Algorithmic Bias in the Clinical Setting: What do Clinicians Need to Know?

Benjamin Collins, M.D., M.A.
Email: colliben@ohsu.edu
Clinical Informatics Fellow, Department of Medical Informatics and Clinical Epidemiology

Keywords

Medical Education, Artificial Intelligence, Medical Ethics, Diversity Equity and Inclusion.

Abstract

Algorithmic bias refers to the biases originating from the use of artificial intelligence (AI). With AI being increasingly used in healthcare, clinicians need to be able to determine when and how to use AI systems to minimize the bias passed into patient care. However, clinicians do not currently receive sufficient training on algorithmic bias. Training clinicians on the use of AI should be a priority and it is imperative for that training to include algorithmic bias which disproportionately harms patients from marginalized populations. Although the literature on algorithmic bias in healthcare is extensive, there is little guidance on what clinicians need to know. This study aimed to extract concepts of algorithmic bias in healthcare from the literature to guide the development of training curricula. To identify relevant articles, a PubMed search was performed using MeSH terms for the co-occurrence of content on algorithms/AI, ethics/bias, and healthcare with results filtered to include articles from the past 5 years. Relevant articles were retrieved and assessed by qualitative methods to compile a list of clinically relevant concepts associated with algorithmic bias in healthcare and the frequency of their appearance. Once all concepts were identified, they were organized into inductive themes of related concepts. In total, 886 instances of 141 concepts were identified across 8 themes in 86 articles before reaching a saturation of information. The most common concepts were taken to be representative of the most important information on algorithmic bias in the literature to serve as a basis for initial recommendations on an outline of content for training clinicians in algorithmic bias.