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Title: Unravelling the dynamics of healthcare workforce attrition in the Eastern Cape: A multidimensional analysis

Abstract:

Background: The Eastern Cape's public healthcare system faces a persistent challenge of high workforce attrition rates, significantly impacting service delivery and resource management. High turnover rates not only strain the system's capacity but also compromise the quality of service provided to patients. This can consequently reduce patient satisfaction, or in more extreme cases, lead to avoidable patient deaths. There are also significant economic implications such as recruiting, hiring and training new staff.

Aim: To conduct a comprehensive analysis of the multifaceted factors associated with attrition and potentially drive evidence-based interventions to foster a more stable and resilient healthcare workforce in the Eastern Cape.

Methods: Demographic variables, compensation data, facility information, and employment histories were extracted from the PERSAL dataset. Analysis was then conducted using both statistical methods (generalised linear mixed models) and machine learning approaches (including decision trees, neural networks, and long-short term memory models) to identify and interpret factors contributing to attrition.