Artificial Intelligence Integration in Mental Health Diagnosis within South African Primary Care: A Comparative Study

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Abstract

Artificial Intelligence (AI) has shown promise in enhancing diagnostic accuracy for mental health conditions, particularly in resource-limited settings such as South African primary care clinics. However, integration of AI tools remains an area with limited empirical studies. The study employed a mixed-methods approach, including surveys among healthcare professionals, observational assessments at clinics, and statistical analysis of diagnostic outcomes. Data from six randomly selected clinics were analysed for AI integration effectiveness. AI tools demonstrated an improvement in diagnosing depression with a sensitivity rate of 85% compared to traditional methods (70%), indicating enhanced accuracy in resource-constrained settings. The findings suggest that AI can significantly improve mental health diagnosis in primary care, particularly for common conditions like depression. However, further research is needed to explore its impact on privacy and ethical considerations. Healthcare policymakers should consider integrating AI tools into training programmes for healthcare professionals and advocate for regulatory frameworks ensuring patient data protection. Artificial Intelligence, Mental Health Diagnosis, Primary Care, Diagnostic Accuracy, South Africa

2006(1): 27-40 (2006) | Sibusiso Maluleke

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