# Integration of “FAIR” Data Principles in Longitudinal Mental Health Research in Africa: Lessons from a Landscape Analysis

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**Abstract :** The INSPIRE network aims to build an open, ethical, sustainable, and FAIR (Findable, Accessible, Interoperable, Reusable) data science platform, particularly for longitudinal mental health (MH) data. While studies have been done at the clinical and population level, there still exists limitations in data and research in LMICs, which pose a risk of underrepresentation of mental disorders. It is vital to examine the existing longitudinal MH data, focusing on how FAIR datasets are. This landscape analysis aimed to provide both overall level of evidence of availability of longitudinal datasets and degree of consistency in longitudinal studies conducted. Utilizing prompters proved instrumental in streamlining the analysis process, facilitating access, crafting code snippets, categorization, and analysis of extensive data repositories related to depression, anxiety, and psychosis in Africa. While leveraging artificial intelligence (AI), we filtered through over 18,000 scientific papers spanning from 1970 to 2023. This AI-driven approach enabled the identification of 228 longitudinal research papers meeting inclusion criteria. Quality assurance revealed 10% incorrectly identified articles and 2 duplicates, underscoring the prevalence of longitudinal MH research in South Africa, focusing on depression. From the analysis, evaluating data and metadata adherence to FAIR principles remains crucial for enhancing accessibility and quality of MH research in Africa. While AI has the potential to enhance research processes, challenges such as privacy concerns and data security risks must be addressed. Ethical and equity considerations in data sharing and reuse are also vital. There’s need for collaborative efforts across disciplinary and national boundaries to improve the Findability and Accessibility of data. Current efforts should also focus on creating integrated data resources and tools to improve Interoperability and Reusability of MH data. Practical steps for researchers include careful study planning, data preservation, machine-actionable metadata, and promoting data reuse to advance science and improve equity. Metrics and recognition should be established to incentivize adherence to FAIR principles in MH research

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