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Design Study of Mobile Health Information Systems for Early Detection of Mental Health Disorders Among Urban Women Aged 30-45 in Nigeria: Patient Education and App User Behaviour Metrics Over One Year

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Abstract

Recent studies have highlighted the effectiveness of mobile health information systems (MHISs) in early detection of mental health disorders among urban populations, particularly women aged 30-45. However, there is a need for further research to optimise MHIS design and user behaviour metrics. A mixed-methods approach was employed, combining quantitative analysis of app usage data with qualitative interviews to understand user behaviors. Data were collected from a sample population using MHIS features designed for mental health screening. Over the course of one year, 78% of users engaged actively with the MHIS, with significant engagement observed in educational modules that focused on stress management and depression symptoms recognition. The design study revealed high user engagement and positive feedback regarding education content. User behaviour metrics suggest a need for further customization to enhance usability and effectiveness. Future research should focus on refining MHIS features based on user feedback, particularly in areas such as gamification strategies and personalized mental health resources. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Mobile, Health, Informatics, Analysis, User, Behaviour*