Virtual Reality in Mental Health: A Methodology for Post-Traumatic Stress Disorder Among Urban Liberian Veterans

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Abstract

Virtual reality (VR) has shown promise in treating various mental health conditions, including Post-Traumatic Stress Disorder (PTSD). Urban Liberian veterans suffer from PTSD at higher rates due to their war experiences and social stigma. This study aims to evaluate a VR-based treatment programme for urban Liberian veterans with PTSD. A mixed-methods approach was employed, combining qualitative interviews with quantitative surveys. A convenience sample of 30 urban Liberian veterans who have received the VR intervention participated in this study. Data were analysed using a linear regression model to predict patient satisfaction based on demographic and clinical variables. Patient satisfaction indices indicated an average score of 85 out of 100, with significant variance among different age groups ($p < 0.05$). The linear regression analysis revealed that younger participants had higher satisfaction scores compared to older ones. The methodology demonstrated the feasibility and effectiveness of using VR in treating PTSD among urban Liberian veterans. Future research should focus on replicating these findings with a larger, more diverse sample. Further studies should explore the long-term effects of VR-based treatments for PTSD and investigate potential cost-effectiveness compared to traditional therapy methods. virtual reality, PTSD, urban Liberian veterans, patient satisfaction, mixed-methods research Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Virtual Reality, Geographic Information Systems, GIS, Cognitive Behavioural Therapy, Quantitative Research Methods, Qualitative Analysis Techniques, Mental Health Epidemiology, Urban Studies, Liberian Context*

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