

# Housing Insecurity and Mental Health Outcomes: Evidence from a Cross-Sectional Study in Kenya's Informal Settlements



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M. Georges<sup>1,2</sup> E.A. Adams<sup>3</sup> G.O Boateng<sup>1,4</sup>  
<sup>1</sup>Dahdaleh Institute for Global Health Research <sup>2</sup>Faculty of Health Sciences, McMaster University  
<sup>3</sup>Eck Institute for Global Health, University of Notre Dame, IN  
<sup>4</sup>School of Global Health, York University, 4700 Keele St., Ontario, Canada



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## Introduction

- ❖ Sub-Saharan Africa is estimated to make up 10% of the global burden of mental disorders.
- ❖ Over one billion people live in informal settlements in Sub-Saharan Africa, including Kenya, where over 27% of the population lives in urban areas.
- ❖ Within informal settlements in this region, housing insecurity, characterized by inadequate amenities, overcrowding and poor infrastructure, has deleterious health consequences for residents.
- ❖ Therefore, our study aims to assess
  - (a) The relationship between Housing Insecurity and depressive symptomatology
  - (b) The relationship between Housing insecurity and generalized anxiety disorder

## Methods

### Study Setting:

- ❖ Data were collected from three informal settlements in the Kisumu region of the Nyanza Province in Kenya (N=1010)

### Outcome Variables:

- ❖ Depression: measured using the WHO-5 Well-being Index.
  - Score > 12 = clinical depression
- ❖ Anxiety: measured using the Generalized Anxiety Disorder-7 Scale
  - Score > 14 = severe anxiety

### Independent Variable:

- ❖ Housing Insecurity
  - Latent construct of 17 items to create a scale with a range of 0-17 and a coefficient alpha of 0.82

### Control Variables:

- ❖ Demographic Factors
  - Number of children under five, district of residence, religion
- ❖ Housing Characteristics
  - Housing type, building materials, housing satisfaction

### Data Analysis:

- ❖ Descriptive: we determined the sample distribution for all outcome and control variables.
- ❖ Bivariate:
  - Used complementary log-log link regression to assess the relationship between predictor variables and depression and anxiety symptomatology.
- ❖ Multivariate:
  - Used generalized linear models with a complementary log-log link function to assess the independent effect of housing insecurity on depression and anxiety symptomatology while concurrently controlling for the effect of other predictors.
  - Significant covariates ( $p < 0.05$ ) of depression and anxiety symptomatology in the bivariate analysis were included in the multivariable logistic regression.

## Results

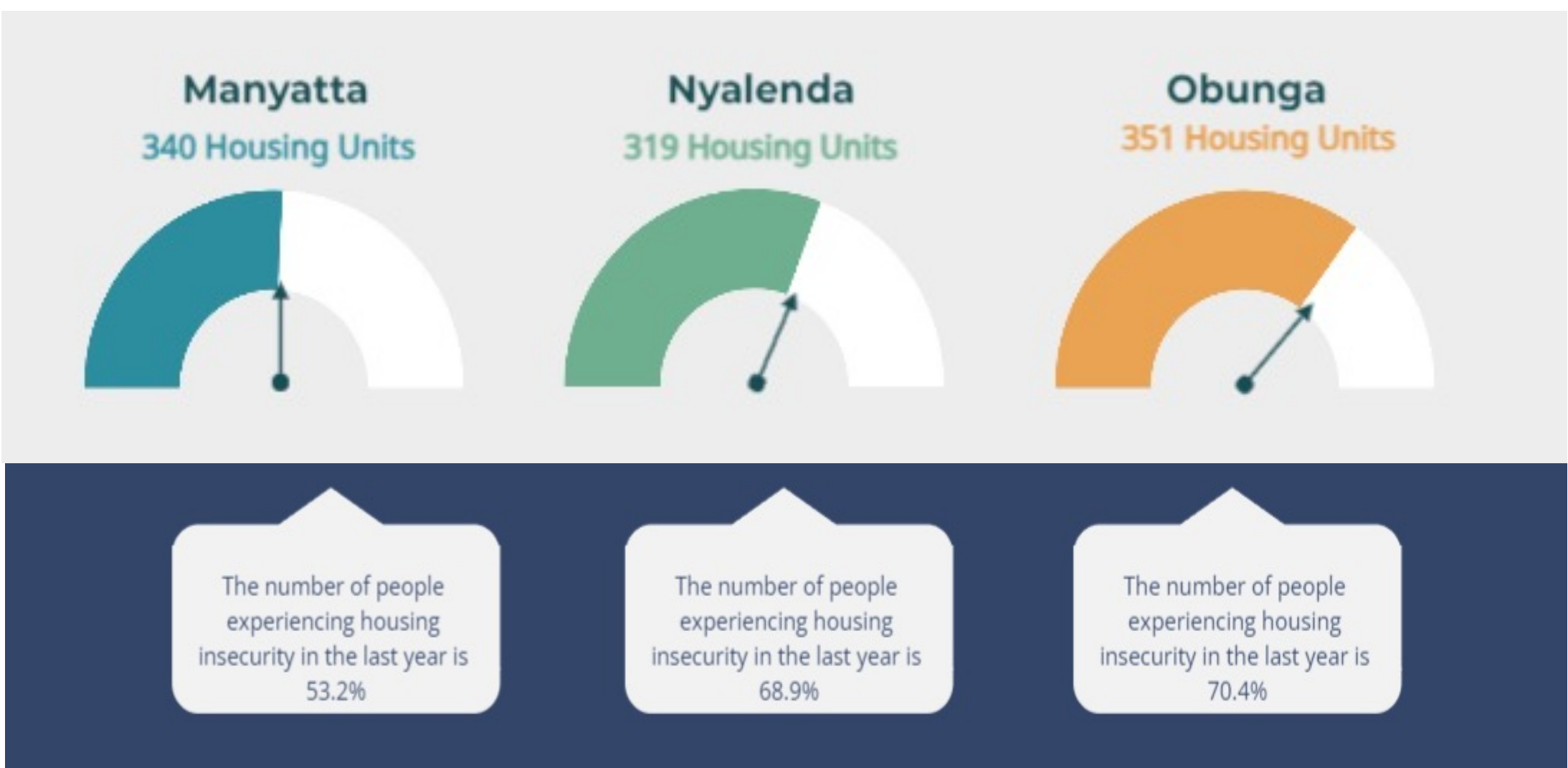


Figure 1: Number of people experiencing housing insecurity in the Manyatta, Nyalenda and Obunga informal settlements in the Kisumu region of the Nyanza Province in Kenya. Over 50% of the population in each settlement experiences housing insecurity.

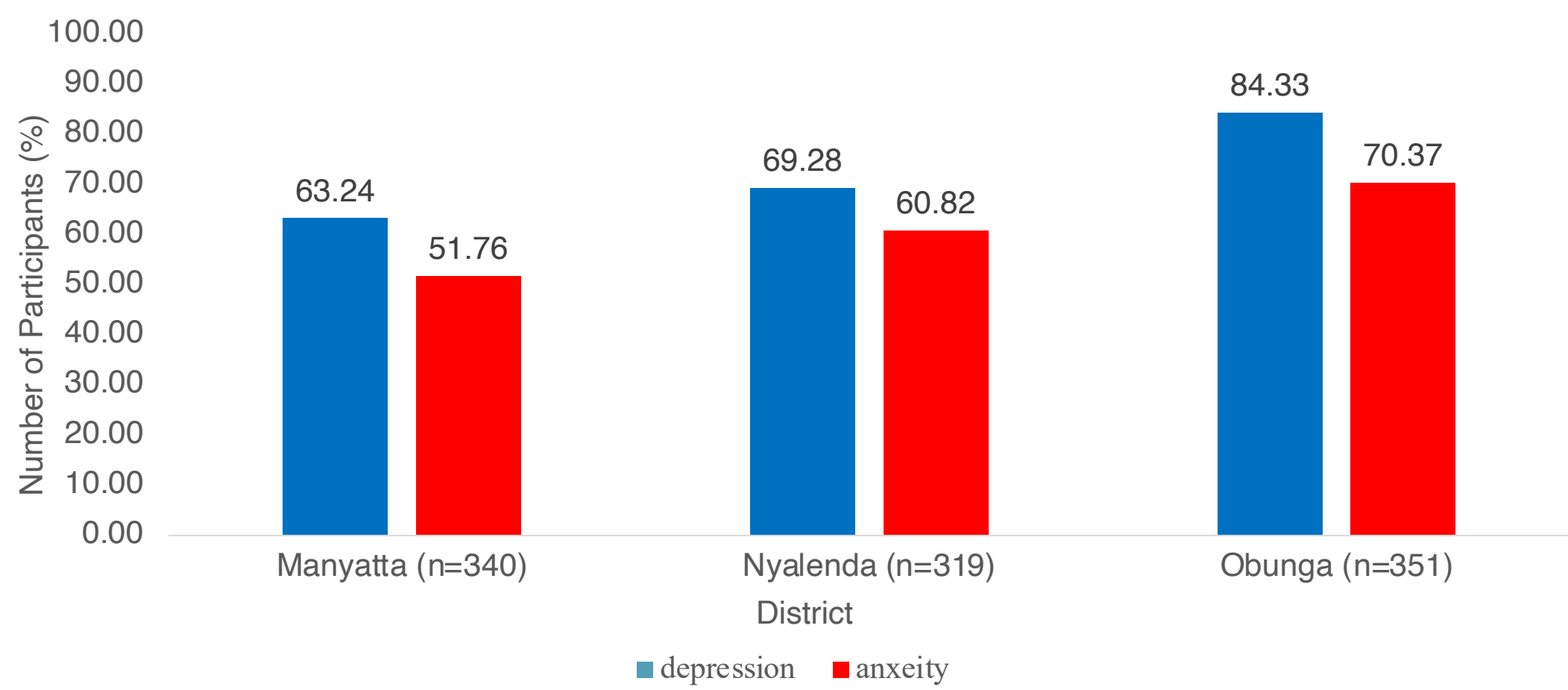


Figure 2: Proportion of participants experiencing depression and anxiety in three informal settlements in the Kisumu region of the Nyanza Province in Kenya. Over 50% of the population in each informal settlement experiences symptomatology of depression and anxiety (n=1010).



Figure 3: Variables significantly associated with depressive symptomatology at the bivariate level ( $p < 0.05$ ). Determined from generalized linear regression.



Figure 4: Variables significantly associated with anxiety symptomatology at the bivariate level ( $p < 0.05$ ). Determined from generalized linear regression.

## Results

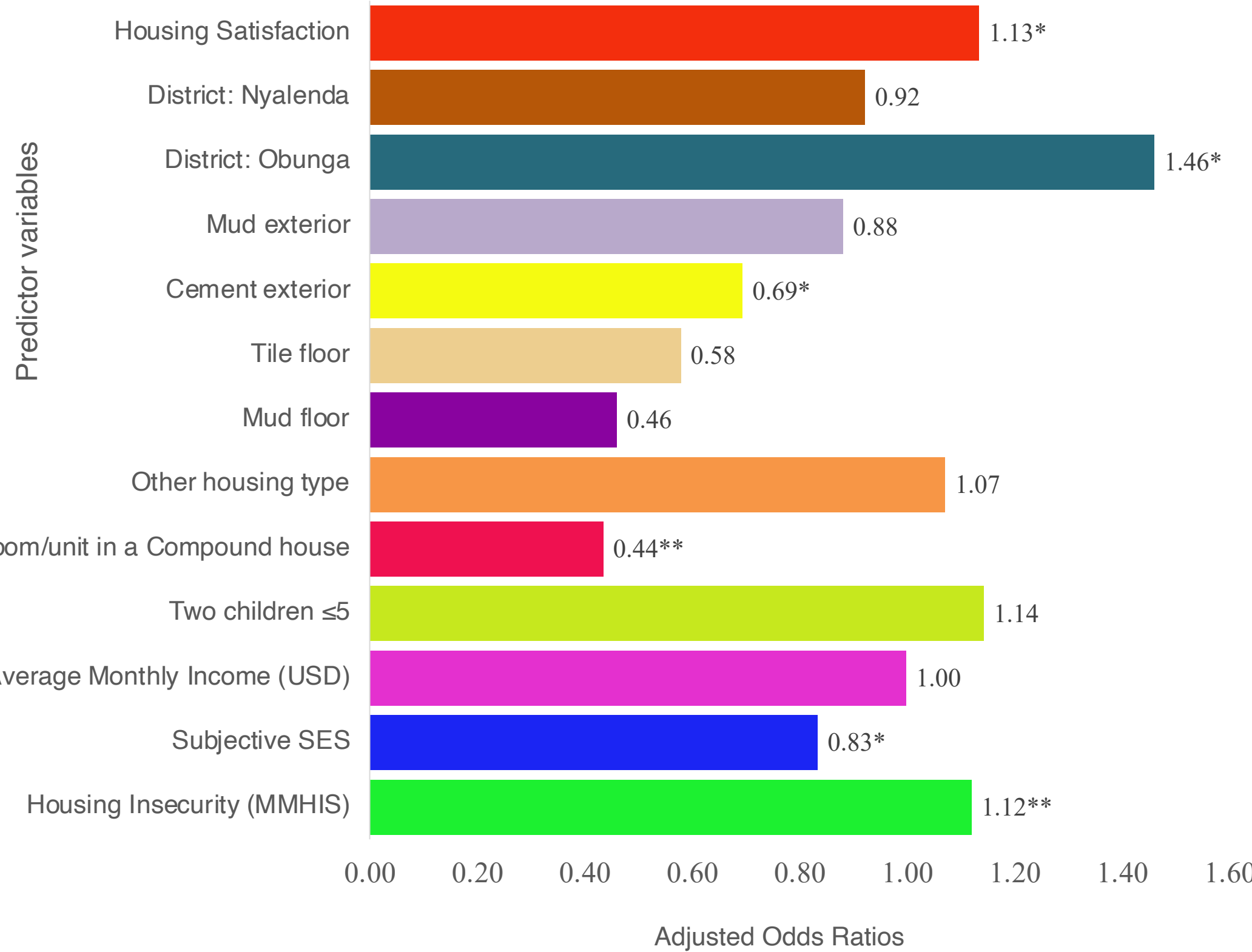


Figure 5: Clustered bar chart showing explanatory variables significantly associated with the relationship between housing insecurity and depression symptomatology at the multivariate level.

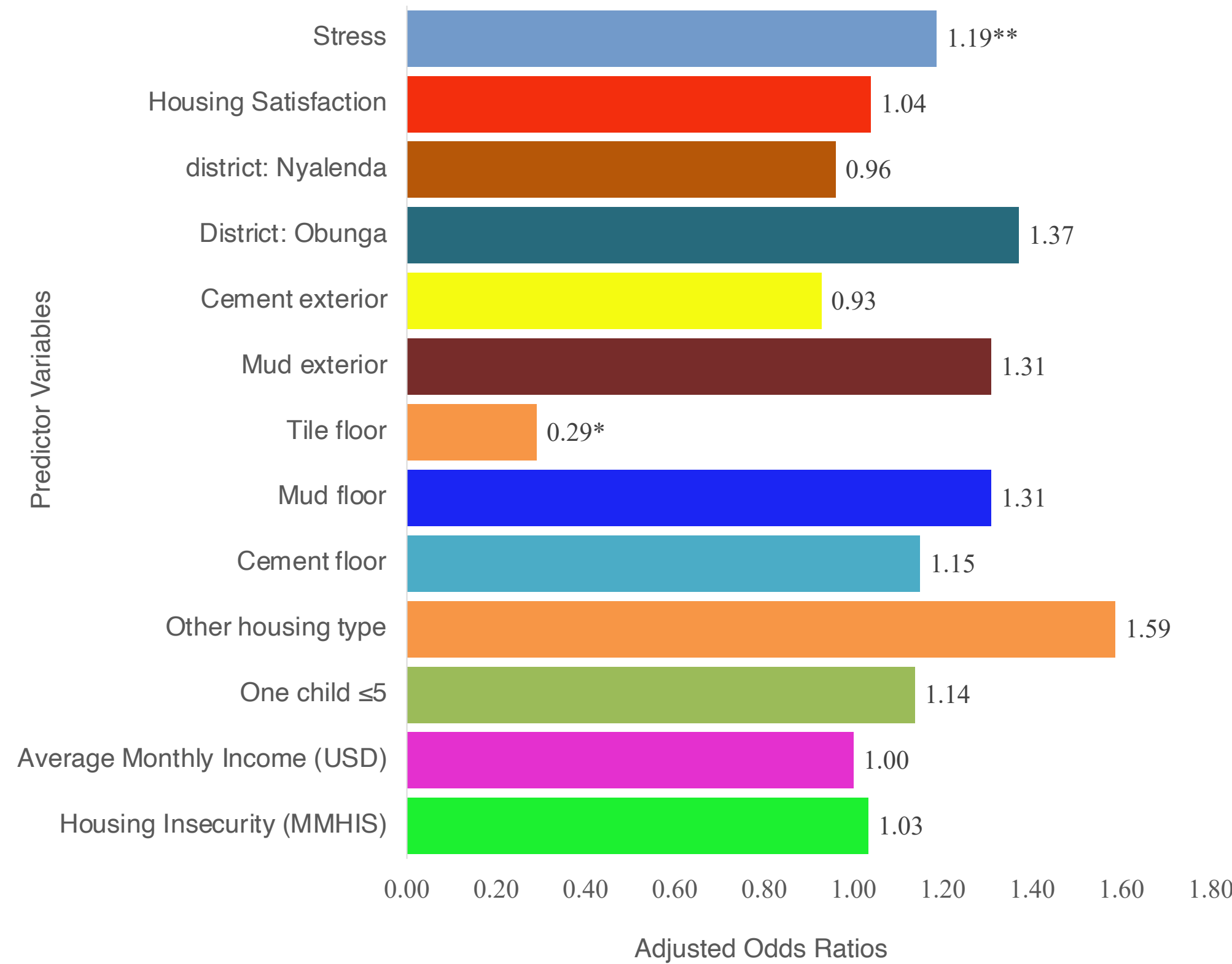


Figure 6: Figure 5: Clustered bar chart showing explanatory variables significantly associated with the relationship between housing insecurity and anxiety symptomatology at the multivariate level.

## Conclusions

- ❖ Housing insecurity has deleterious mental health consequences, particularly leading to an increase in depressive and anxiety symptomatology in Kenyan Informal Settlements
- ❖ Higher socioeconomic status (SES) was associated with lower depressive symptomatology but a higher likelihood of anxiety symptomatology.
- ❖ Living in specific areas, like Obunga, was associated with higher depression and anxiety symptomatology.
- ❖ Compound housing decreased the likelihood of depression but increased the likelihood of anxiety symptomatology. With cement housing exteriors linked to lower depression symptomatology and metal sheets to increased anxiety symptomatology.
- ❖ Thus, context-specific programming related to improving mental health outcomes and housing insecurity should be developed, with particular emphasis on building material, district of residence and socioeconomic status.

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### Contact:

Mirianna Georges: [georgm15@mcmaster.ca](mailto:georgm15@mcmaster.ca)  
Dr. Ellis A. Adams: [eadams7@nd.edu](mailto:eadams7@nd.edu)  
Dr. Godfred Boateng: [gboateng@yorku.ca](mailto:gboateng@yorku.ca)



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