



Genetic Anthropology
and Biocultural Studies
Lab at Vanderbilt
University

Exploring the Reliability and Validity of the General Health Questionnaire 12 in a Nigerian Context

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Background

The General Health Questionnaire-12 (GHQ-12) is a widely used screening tool designed to assess an individual's mental well-being and detect symptoms of psychological distress. It consists of 12 questions that focus on various aspects of an individual's emotional and psychological health, including symptoms of anxiety and depression. The GHQ-12 is typically used in clinical settings, research studies, and public health surveys to identify individuals who may be at risk for mental health issues. It provides an easy way to gauge overall psychological well-being. This study aims to assess the reliability and validity of the GHQ-12 questionnaire as a measure of distress within a Nigerian population; while also exploring the general well-being of this population.

GHQ-12 Items

1. Able to concentrate
2. Lost much sleep
3. Playing useful part
4. Capable of making decisions
5. Under stress
6. Could not overcome difficulties
7. Enjoy normal activities
8. Face up to problems
9. Feeling unhappy and depressed
10. Losing confidence
11. Thinking of self as worthless
12. Feeling reasonably happy



Data took place at Lagos State University Teaching Hospital

Materials and methods

The total GHQ-12 score was computed using an additive model that combined the scores from all 12 items. There are no specific cutoffs, but higher scores are associated with higher levels of distress and well-being. Exploratory and confirmatory factor analysis played a pivotal role in our study when we sought to delve deeper into the latent variables within the GHQ-12 and to test the validity of the study as compared to the literature. The aim was to move beyond a total health score assessment and uncover the underlying dimensions that contribute to overall psychological well-being. This approach allowed us to paint a more nuanced picture of stress levels among the studied populations. Positively framed questions were reversed scored, effectively converting scores of 3 into 0. This transformation ensured that the GHQ-12 responses aligned consistently with the overall scoring methodology and enhanced the accuracy of our analysis. By employing these techniques, we were able to extract richer insights into mental health and psychological distress, ultimately providing a more comprehensive understanding of the well-being of individuals. Cronbach's alpha was used to measure reliability.

Results

GHQ	GHQ	GHQ	GHQ	GHQ	GHQ	GHQ	GHQ	GHQ	GHQ	GHQ	GHQ.12
.1 **	.2	.3 **	.4 **	.5	.6	.7 **	.8 **	.9	10	11	**
1.78	1.00	1.66	1.39	1.09	1.00	1.57	1.62	.846	.7115	.6026	1.474
2			1		6	7	2	2			

** reversed scored

Table 1. Average score per question for the general health questionnaire 12. Highest possible score per question is 3.

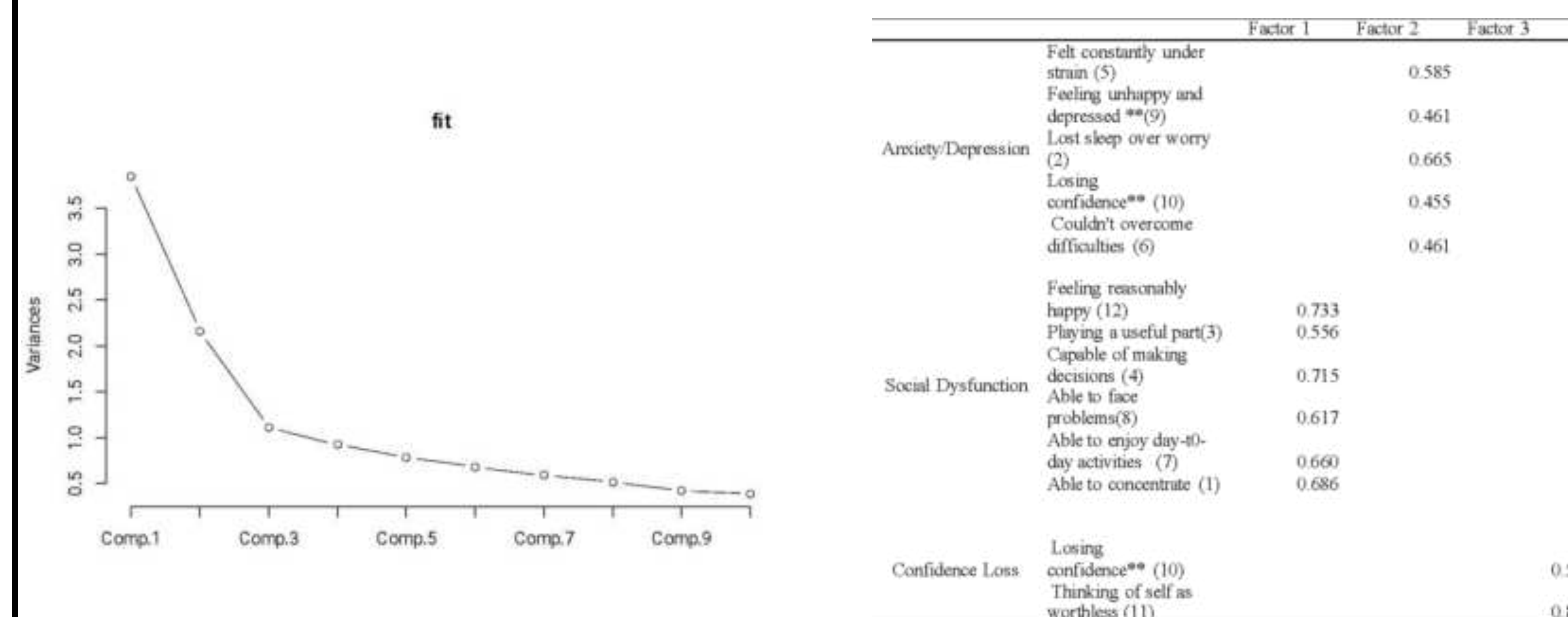


Figure 2. The Eigenvalues plot and Confirmatory Factor Analysis (CFA) reveal the presence of three distinct factors within the data, confirming alignment with existing literature. Notably, our results show that question 10 is loaded on two factors instead of just one, which was expected.

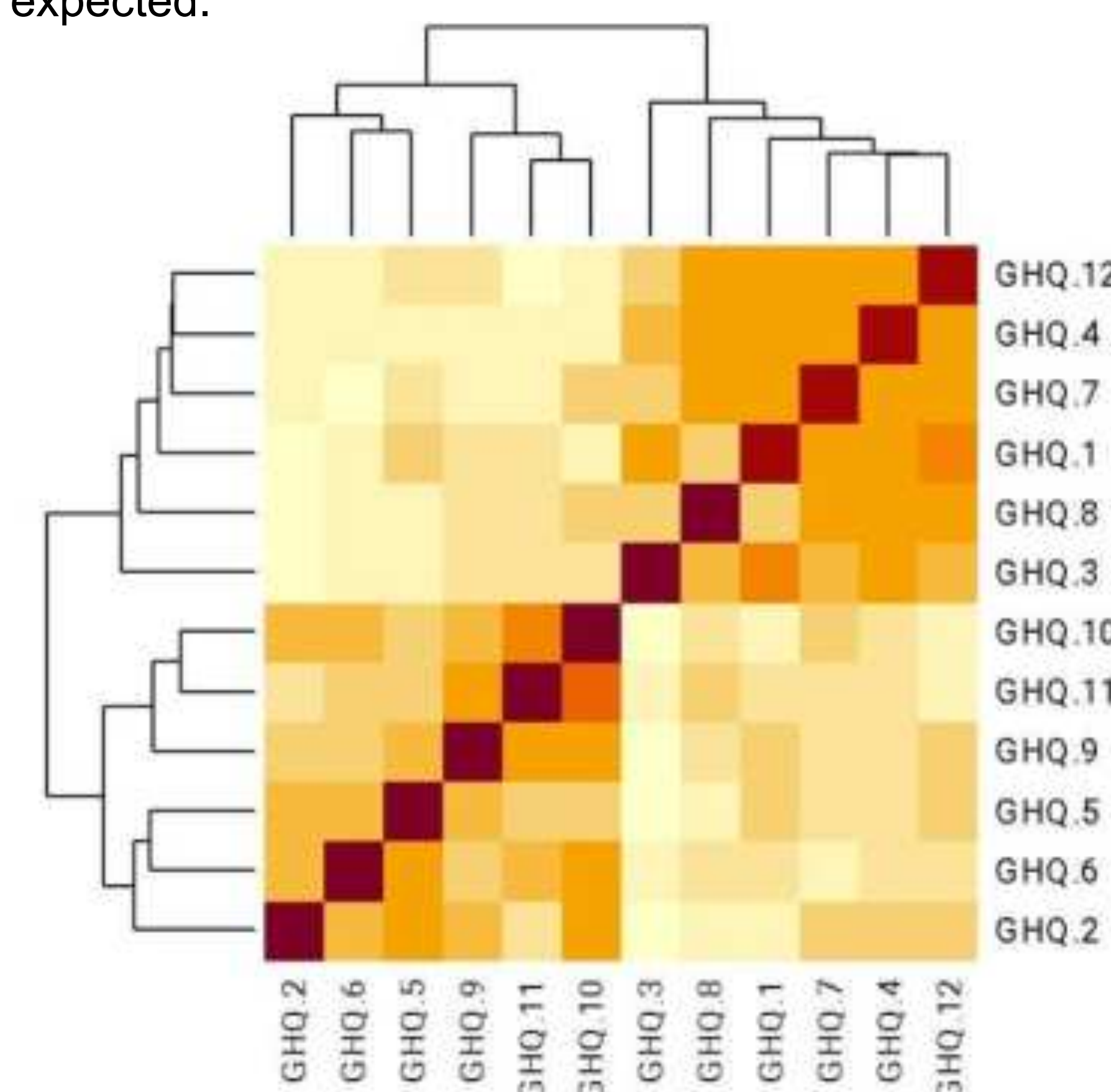


Figure 3. The heatmap visualizes the correlations among the 12 responses from the questionnaire. In the heatmap, each cell represents the strength and direction of the correlation between two variables. A positive correlation is indicated by warmer colors (e.g., red), while a negative correlation is represented by cooler colors. The intensity of the color corresponds to the strength of the correlation, with darker colors indicating a stronger relationship. This visualization can help identify patterns and associations among these variables, which is useful for understanding the underlying relationships in the data

Conclusion and Discussion

- On average this was a relatively stressed population.
- The GHQ-12 exhibits high internal consistency, indicating its accurate and reliable measurement of distress in the Nigerian population.
- Exploratory factor analysis aligns with the existing literature highlighting validity.
- The GHQ-12 proves to be a reliable measure of distress in Nigerian populations. This stress measurement could be beneficial for individuals interested in interpreting biological factors as well.

Implications & future directions

Data from this portion of the study will be used in tandem with biological and genetic data related to inflammation to explore the theory of embodiment or how environments, through stress get under the body and impact health outcomes.

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Practice room for dental students at Lagos State University Teaching Hospital