

Development and Validation of a Multidimensional Experimental Screening Instrument to Measure Multiple Barriers Associated with Individual Dietary Practices: A Secondary Analysis of NHANES Datasets 2011-2012

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Consuming a poor diet is a known risk factor for many chronic diseases. Individuals with less apparent barriers tend to adhere to diet and lifestyle modifications more frequently than those who has more barriers? Accurately measuring dietary barriers at the individual level could inform personalized prevention interventions, particularly those aiming to prevent chronic diseases. While instruments are available to assess factors associated with diet, none are designed to simultaneously measure the multi-dimensional nature of barriers associated with dietary practices. This dissertation research was to develop a psychometrically sound instrument that can be administered by health practitioners to measure dietary barriers. First, an expert review panel established content validity for the variables, which were considered as items on the Dietary Health Status (DHS) instrument. Subsequently, an exploratory factor analysis was conducted to assess and validate the DHS instrument; and finally, relationships between DHS scores and clinical and demographic characteristics were

explored among participants to test if the DHS instrument could detect differences. The 2011-2012 NHANES datasets were used in conjunction with the What We Eat in America (WWEIA) 24-hour dietary recall data in this study. A total of 3,705 participants met the study inclusion criteria. Results suggested: 1) content validity was established for a total of 170 variables representing 12 theory-based domains identified as potential dietary barriers; 2) factor analysis supported adequate construct and internal validity for the DHS instrument whole scale and its 10 subscales, affirming DHS's multidimensionality; and 3) DHS total scores were strongly associated with demographic and clinical characteristics; cases with lower DHS scores were more likely to have hypertension, or diabetes which suggest the relationship between dietary barriers and indicators for chronic diseases. Results should inform the development of a comprehensive and practical screening tool that benefits practitioners to identify dietary barriers to improve the health of U.S. adults.

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