

## Development and Validation of a Semi-Quantitative Food Frequency Questionnaire for Use in Urban and Rural Communities of Rwanda

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**Abstract :** Tools for the dietary assessment in adults are limited in low- and middle-income settings. The objective of this study was to develop and validate a semi-quantitative food frequency questionnaire (FFQ) against the multiple pass-24 h recall tool for use in urban and rural Rwanda. A total of 212 adults (154 females and 58 males), 18-49 aged, including 105 urban and 107 rural residents, from the four regions of Rwanda, were recruited in the present study. A multiple-pass 24- H recall technique was used to collect dietary data in both urban and rural areas in four different rounds, on different days (one weekday and one weekend day), separated by a period of three months, from November 2020 to October 2021. The details of all the foods and beverages consumed over the 24h period of the day prior to the interview day were collected during face-to-face interviews. A list of foods, beverages, and commonly consumed recipes was developed by the study researchers and ten research assistants from the different regions of Rwanda. Non-standard recipes were collected when the information was available. A single semi-quantitative FFQ was also developed in the same group discussion prior to the beginning of the data collection. The FFQ was collected at the beginning and the end of the data collection period. Data were collected digitally. The amount of energy and macro-nutrients contributed by each food, recipe, and beverage will be computed based on nutrient composition reported in food composition tables and weight consumed. Median energy and nutrient contents of different food intakes from FFQ and 24-hour recalls and median differences (24-hour recall -FFQ) will be calculated. Kappa, Spearman, Wilcoxon, and Bland-Altman plot statistics will be conducted to evaluate the correlation between estimated nutrient and energy intake found by the two methods. Differences will be tested for their significance and all analyses will be done with STATA 11. Data collection was completed in November 2021. Data cleaning is ongoing and the data analysis is expected to be completed by July 2022. A developed and validated semi-quantitative FFQ will be available for use in dietary assessment. The developed FFQ will help researchers to collect reliable data that will support policy makers to plan for proper dietary change intervention in Rwanda.

**Keywords :** food frequency questionnaire, reproducibility, 24-H recall questionnaire, validation

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