



Validity and inter-rater reliability of the Home-Cooking EnviRonment and equipment Inventory Observation Form (Home-CookERITM)

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Abstract

INTRODUCTION: Quantifying home cooking environments has applications in nutrition epidemiology, health promotion and evaluation of nutrition interventions. This study aimed to develop a valid and reliable tool to quantify household cooking environments.

METHODS: A 91-item Home-Cooking EnviRonment and equipment Inventory Observation Form (Home-CookERITM) was developed as an online survey. Items included domestic spaces and resources for storage, disposal, preparation and cooking of food or non-alcoholic beverages. Home-CookERITM was piloted to assess face and content validity, and usability with 13 Australian experts (i.e. dietitians, nutrition researchers, chefs, a food technology teacher, a kitchen designer) and 13 lay people. Pilot participants provided feedback in a 10 minute telephone interview. Accordingly, Home-CookERITM was modified to a 89-item survey. Inter-rater reliability was examined between two trained raters in 33 unique households in Newcastle, NSW, Australia. Raters were required to observe each item before recording a response. Home occupants were instructed to only assist with locating items if asked. Raters were blinded to each other's responses. Inter-rater reliability was calculated by Cohen's Kappa coefficient [κ] for 81 kitchen items.

RESULTS: Home-CookERITM had excellent face and content validity with no significant differences were found between the clarity or relevance responses. Inter-rater reliability for the modified 81-item Home-CookERITM had almost perfect to perfect agreement for 46% of items [$n=37$, raters=2, $\kappa=0.81-1$], moderate to substantial for 28% [$n=23$, raters=2, $\kappa = 0.51-0.8$], slight to fair for 15% [$n=12$, raters=2, $\kappa=0.01-0.5$], with 11% of items assessed as chance or worse [$n=9$, raters=2, $\kappa \leq 0.0$]. Home-CookERITM was optimised by reduction to a 77-item version, which is now available to researchers.

CONCLUSION: Home-CookERITM is a comprehensive, valid and reliable tool for quantifying Australian household cooking environments. To expand Home-CookERITM applications, a home occupant self-completion version is planned for validation.

Keywords: cooking environment, validity, reliability, online survey