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Research

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Validation of the MEDFICTS dietary questionnaire: A clinical tool to assess adherence to American Heart Association dietary fat intake guidelines

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Abstract

Background

Dietary assessment tools are often too long, difficult to quantify, expensive to process, and largely used for research purposes. A rapid and accurate assessment of dietary fat intake is critically important in clinical decision-making regarding dietary advice for coronary risk reduction. We assessed the validity of the MEDFICTS (MF) questionnaire, a brief instrument developed to assess fat intake according to the American Heart Association (AHA) dietary "steps".

Methods

We surveyed 164 active-duty US Army personnel without known coronary artery disease at their intake interview for a primary prevention cardiac intervention trial using the Block food frequency (FFQ) and MF questionnaires. Both surveys were completed on the same intake visit and independently scored. Correlations between each tools' assessment of fat intake, the agreement in AHA step categorization of dietary quality with each tool, and the test characteristics of the MF using the FFQ as the gold standard were assessed.

Results

Subjects consumed a mean of $36.0 \pm 13.0\%$ of their total calories as fat, which included saturated fat consumption of $13.0 \pm 0.4\%$. The majority of subjects (125/164; 76.2%) had a high fat (worse than AHA Step 1) diet. There were significant correlations between the MF and the FFQ for the intake of total fat ($r = 0.52$, $P < 0.0001$) and saturated fat ($r = 0.52$, $P < 0.0001$). Despite these modest correlations, the currently recommended MF cutpoints correctly identified only 29 of 125 (23.3%) high fat (worse than AHA Step 1) diets. Overall agreement for the AHA diet step between the FFQ and MF (using the

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previously proposed MF score cutoffs of 0–39 [AHA Step 2], 40–70 [Step 1], and >70 [high fat diet]) was negligible (kappa statistic = 0.036). The MF was accurate at the extremes of fat intake, but could not reliably identify the 3 AHA dietary classifications. Alternative MF cutpoints of <30 (Step 2), 30–50 (Step 1), and >50 (high fat diet) were highly sensitive (96%), but had low specificity (46%) for a high fat diet. ROC curve analysis identified that a MF score cutoff of 38 provided optimal sensitivity 75% and specificity 72%, and had modest agreement (kappa = 0.39, P < 0.001) with the FFQ for the identification of subjects with a high fat diet.

Conclusions

The MEDFICTS questionnaire is most suitable as a tool to identify high fat diets, rather than discriminate AHA Step 1 and Step 2 diets. Currently recommended MEDFICTS cutpoints are too high, leading to overestimation of dietary quality. A cutpoint of 38 appears to be providing optimal identification of patients who do not meet AHA dietary guidelines for fat intake.