proceedings

Abstract

The Development of a Nutrient Database to Analyse the Dietary Intake of Older Indians in the Longitudinal Aging Study in India—Diagnostic Assessment of Dementia (LASI-DAD) †

Danielle Logan [1,*], AB Dey [2], Alka Mohan Chutani [3], Joyita Banerjee [4], Pranali Khobragade [4], Jinkook Lee [4] and Claire McEvoy [1]

[1] Centre for Public Health, Queen's University Belfast, Belfast BT12 6BA, UK; c.mcevoy@qub.ac.uk
[2] Venu Geriatric Institute, New Delhi 110017, India; abdey@hotmail.com
[3] University of Delhi, New Delhi 110007, India; alkamohan@yahoo.com
[4] Centre for Economic and Social Development, University of Southern California, Los Angeles, CA 90007, USA; joyitaprakash@yahoo.com (J.B.); pranalikhobragade@yahoo.com (P.K.); jinkookl@usc.edu (J.L.)
* Correspondence: d.logan@qub.ac.uk
† Presented at the 14th European Nutrition Conference FENS 2023, Belgrade, Serbia, 14–17 November 2023.

Abstract: Investigating diet-related disease in India's ageing population is challenging due to poor dietary assessment infrastructure and limited capacity for nutritional analyses. We developed a semi-quantitative Food Frequency Questionnaire (FFQ) to capture dietary intake among older Indian adults. Nutrient analysis of FFQ data requires linkage to a nutrient database preferably based on local food composition. However, the Indian Food Composition Tables (IFCT) provided only partial coverage for FFQ items, nutrient data for cooked foods were unavailable, and some important nutrients were missing, e.g., iodine and vitamin B12. The objective was to develop a nutrient database maximising the IFCT to allow for the analysis of FFQ data. The development of the nutrient database involved: (1) the creation of a core dataset within the Nutritics (2019) software platform comprising analytical data for matched foods in the IFCT reference database; (2) the selection of suitable matches for additional foods/beverages consumed in the FFQ informed by local dietetic expertise; (3) the import of nutrient profiles for additional foods/beverages from international food composition tables (UK, USA, and Singapore) to provide full coverage for all FFQ items; (4) the filling of nutrient data gaps in the core IFCT dataset to ensure all foods/beverages have a value for each nutrient; and (5) the generation of a conversion file for food frequencies to daily intakes (in servings and grams) to facilitate FFQ linkage with the nutrient database. The complete nutrient database provides full coverage of FFQ raw and cooked food/beverages and has the capability to analyse 53 nutrients. Overall, 53% of the FFQ items were matched to the IFCT, whilst 28% were matched from the UK (GB21-0), 15% from the USA (FNDDS), and 4% from the Singapore food tables. All FFQ items matched to the IFCT had missing nutrients mapped from matches in other databases, with GB21-0 being the first preference. For cooked FFQ items matched to the IFCT (n = 21), an appropriate cooking method was applied using established nutrient retention factors. The bespoke nutrient database developed through the integration of nutritional expertise and dietary assessment software will allow for the nutrient analysis of FFQ data. The next step is to automate the nutrient analysis process from computer-assisted FFQ data collection in Wave 2 of LASI-DAD.

Keywords: diet; dietary intake; nutrient database; nutritional analysis; older adults; India

check for updates

Citation: Logan, D.; Dey, AB.; Chutani, A.M.; Banerjee, J.; Khobragade, P.; Lee, J.; McEvoy, C. The Development of a Nutrient Database to Analyse the Dietary Intake of Older Indians in the Longitudinal Aging Study in India—Diagnostic Assessment of Dementia (LASI-DAD). *Proceedings* **2023**, *91*, 70. https://doi.org/10.3390/proceedings2023091070

Academic Editors: Sladjana Sobajic and Philip Calder

Published: 22 November 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Author Contributions: Conceptualization and development, D.L., C.M., A.M.C., J.B., P.K. and J.L. A.D. prepared the first draft. All authors have read, commented and agreed to the published version of the manuscript.

Funding: This research was funded by the NIH Foreign Sub Award, grant number [SCON-00003187].

Institutional Review Board Statement: The LASI-DAD study was conducted in accordance with the Declaration of Helsinki, and approved by the Indian Council of Medical Research and all collaborating institutions.

Informed Consent Statement: Informed consent was obtained from all LASI-DAD subjects.

Data Availability Statement: Data not available.

Conflicts of Interest: The authors declare no conflict of interest.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.