46th Annual Scientific Meeting of the Nutrition Society of Australia, 29 November – 2 December 2022, Sustainable nutrition for a healthy life

Development and validation of an online portion size norm assessment tool

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Portion size norms, described as a typical perception of how much of a given food individuals choose to eat in one eating occasion, play a key role in portion control behaviours.[1] The portion size norm of energy-dense nutrient-poor (EDNP) foods may have shifted towards larger sizes in part due to these foods being presented in larger servings and packages.[2,3] Portion size norms for common EDNP foods have yet to be established, and there is currently a lack of validated tools to assess the norm.[4] Therefore, the aim of this study was to develop and validate an online image-based tool to investigate the portion size norm of commonly consumed EDNP foods among Australian consumers. An image series survey including 15 EDNP foods and drinks such as sweet and savoury snacks, cakes, fast foods, and sugar-sweetened carbonated drinks was developed using Qualtrics. Using a within-person crossover design, the validity of the survey was examined by comparing a series of eight successive portion sizes using online food images with corresponding real foods in a laboratory setting. Participants were asked to select their normal portion size using both methods and could choose from a minimum value of 0 (do not eat this food) to a maximum value of 9 (greater than the largest option displayed). Australian consumers aged between 18–65 years, with no current or previous diagnosis of an eating disorder, and who were able to attend an in-person session were considered eligible. A total of 1442 comparisons on normal portion sizes between food images and real foods from 114 participants (83% females, mean age 24.8 years) were made. Across all foods, 91% (range 86%–97%) of comparisons were classified as a correct or adjacent match (that is, participants selected the same or the adjacent portion size option for images and real foods). The overall intraclass correlation coefficient (ICC) between images and corresponding real foods was 0.85, which is considered good.[5] Twelve out of 15 foods had good to excellent levels of agreement (ICC 0.76–0.93), whereas three foods (chocolate bar, banana bread, and muffin) showed moderate agreement (ICC 0.69–0.72). In conclusion, this novel image-based portion size norm assessment tool showed good agreement when compared with real foods. This survey may be a valuable tool to examine portion size norms of common EDNP foods.

References

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