

A ready to drink, plant-based oral nutritional supplement is highly complied with, palatable and tolerated in community-based patients at risk of disease-related malnutrition

C. Griffen¹, M. Delsoglio¹, R. Syed², T. Cookson³, H. Saliba³, A. Vowles³, S. Davies⁴, N. Willey⁴, J. Thomas⁴, N. Millen⁵, N. Odeh⁵, J. Longstaff⁵, N. Westran⁶, M. Phillips⁶, L. Allan⁶, H. Offer⁷, C. Howell⁷, M. Sanders⁷, K. Gaffigan⁷, K. Garrett⁷, S. Foster⁸, A. Salt⁸, E. Carter⁸, S. Moore⁸, N. Bergin⁹, J. Roper¹⁰, J. Alvarez¹⁰, C. Voss¹¹, T. Thrower¹¹, C. MacDonald¹¹, T. Connolly¹¹, D. Sills¹², J. Baxter¹³, R. Manning¹³, L. Gray¹⁴, K. Voas¹⁵, S. Richardson¹⁶, A.-M. Hurren¹⁶, D. Murphy¹⁷, S. Blake¹⁷, P. McArdle¹⁸, S. Walsh¹⁸, L. Booth¹⁹, L. Albrich¹⁹, S. Ashley-Maguire¹⁹, J. Allison¹⁹, J. McClorey²⁰, J. Candlish²⁰, S. Brook²¹, R. Capener¹, G. P. Hubbard¹, R. J. Stratton^{1,22}

¹Medical Affairs, Nutricia Ltd., UK; ²Preston Hill Surgery, Harrow, UK; ³Trowbridge Health Centre, Trowbridge, UK; ⁴West Walk Surgery, Bristol, UK; ⁵Cowplain Family Practice, Waterlooville, UK; ⁶Department of Nutrition and Dietetics, Royal Surrey NHS Foundation Trust, UK; ⁷Dietetic Department, Norfolk Community Health and Care NHS Trust, UK; ⁸Nutrition and Dietetic Department, North Tyneside District General Hospital, UK; ⁹Department of Nutrition and Dietetics, Airedale General Hospital, UK; ¹⁰Warden Lodge Medical Practice, Waltham Cross, UK; ¹¹Rowden Medical Partnership, Chippenham, UK; ¹²Nutrition and Dietetics, Nottingham University Hospitals NHS Trust, UK; ¹³Department Nutrition and Dietetics, Kings Cross Hospital, UK; ¹⁴Dietetics, Victoria Integrated Care Centre, NHS Highland, UK; ¹⁵Dietetic Department, Betsi Cadwaladr University Health Board, UK; ¹⁶James Alexander Family Practice, Hull, UK; ¹⁷Honiton Surgery, Honiton, UK; ¹⁸Birmingham Community Nutrition, UK; ¹⁹Yeovil District Hospital, UK; ²⁰Mountainhall Treatment Centre, UK; ²¹Dietetics, Princess Royal Health Centre, UK; ²²University of Southampton, UK

INTRODUCTION

- The use of oral nutritional supplements (ONS) has been shown to be effective for managing disease-related malnutrition (DRM).
- However, at present, there is currently limited choice of ready to drink, plant-based ONS available to patients at risk of DRM.
- Limited choice for vegan patients, those looking for greater variety, or patients who do not wish to consume animal-derived products for health, environmental, cultural or religious reasons is likely to impact ONS compliance.
- Managing DRM may therefore be particularly difficult in these patients, highlighting the need for additional plant-based ONS.
- As part of a larger one-arm multi-centre intervention study, data on compliance, palatability and tolerance of a plant-based ONS in patients at risk of DRM are presented here.

METHODS

- Twenty-four patients (age: 59±18years; BMI: 18.9±3.3kg/m²) with multiple diagnoses (including cancer [n=5], and cardiovascular [n=6] and respiratory diseases [n=4]) at risk of DRM (MUST¹ score: 2 [n=20], 1 [n=3]) took part in this study.
- Following a 1-day baseline, a 200ml ready to drink, plant-based, nutritionally complete ONS (300kcal and 12g protein/bottle; Fortisip PlantBased 1.5kcal, Nutricia Ltd., UK) was prescribed (≥1 bottle/day) alongside standardised dietary advice² for 7-28 days.
- Reason for requiring a plant-based ONS, daily compliance (%consumed vs. prescribed), end of intervention ONS palatability, and baseline and end of intervention gastrointestinal (GI) tolerance were recorded.
- An intention-to-treat (ITT) analysis was performed, with a minimum of 7 days intervention completed. Statistical analysis was performed using SPSS (IBM, USA). Data are presented as means±SD or % unless stated otherwise and analysed by one-way ANOVA or paired samples *t*-test, where appropriate.

RESULTS

- Requirement for a plant-based ONS:** Patients required a plant-based ONS for a variety of reasons, including personal preference (27%), cultural/religious reasons (23%), veganism/wish to reduce animal-derived food (16%), sustainability reasons (13%), and health reasons (5%) (Fig. 1).

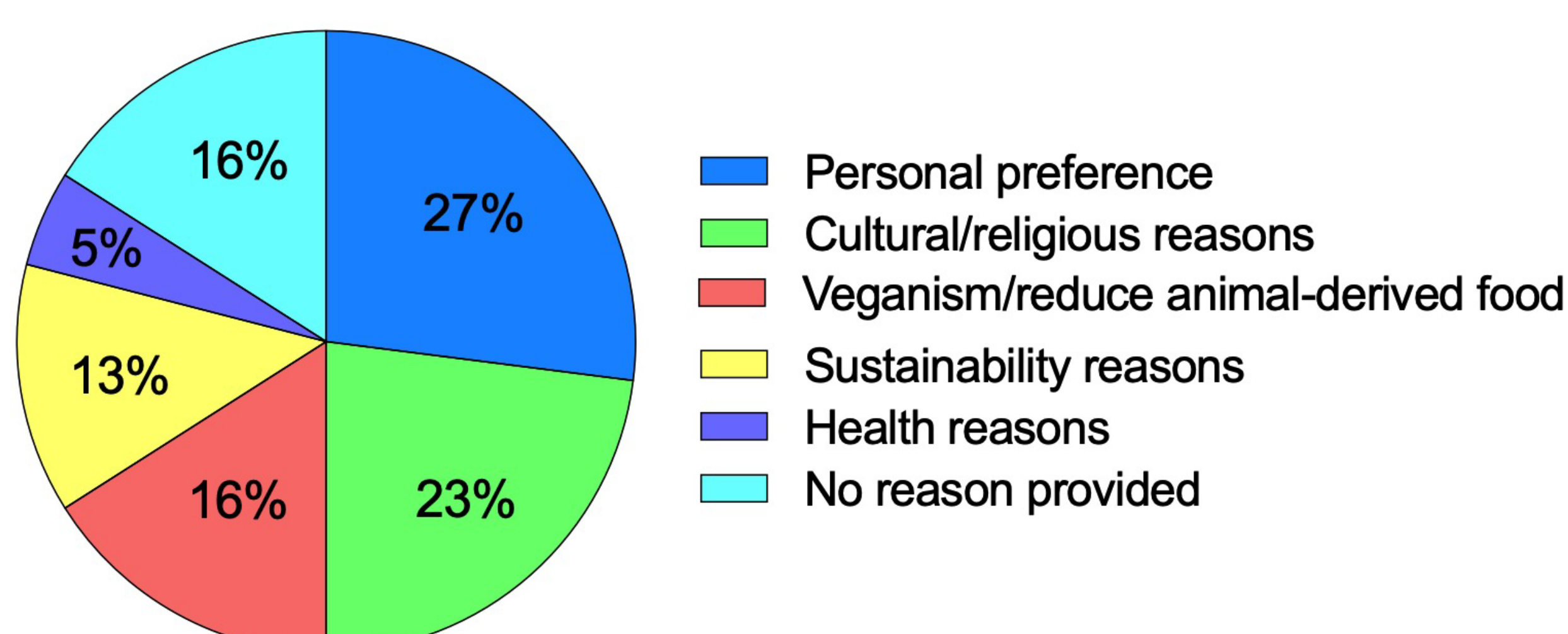


Fig. 1 Reasons (%) why patients at risk of DRM required a plant-based ONS.

References:
¹Frank M., et al. (2015). Nutritional assessment in elderly care: a MUST¹ BMJ Open Quality
²Malnutrition Pathway (2017). Yellow leaflet: Your Guide to Making the Most of Your Food – Advice for patients and carers: for those at medium risk of malnutrition. https://www.malnutritionpathway.co.uk/library/leaflet_yellow.pdf
³Darmon P., et al. (2008). Oral nutritional supplements and taste preferences: 545 days of clinical testing in malnourished in-patients. *Clinical Nutrition*

- Compliance:** Compliance with the plant-based ONS prescription was high (94±16%) and did not differ between prescribed volumes ($p=0.47$; Fig. 2A). In patients already prescribed an ONS at baseline (n=8), compliance increased by 26±63% with the plant-based ONS ($p=0.29$; Fig. 2B).

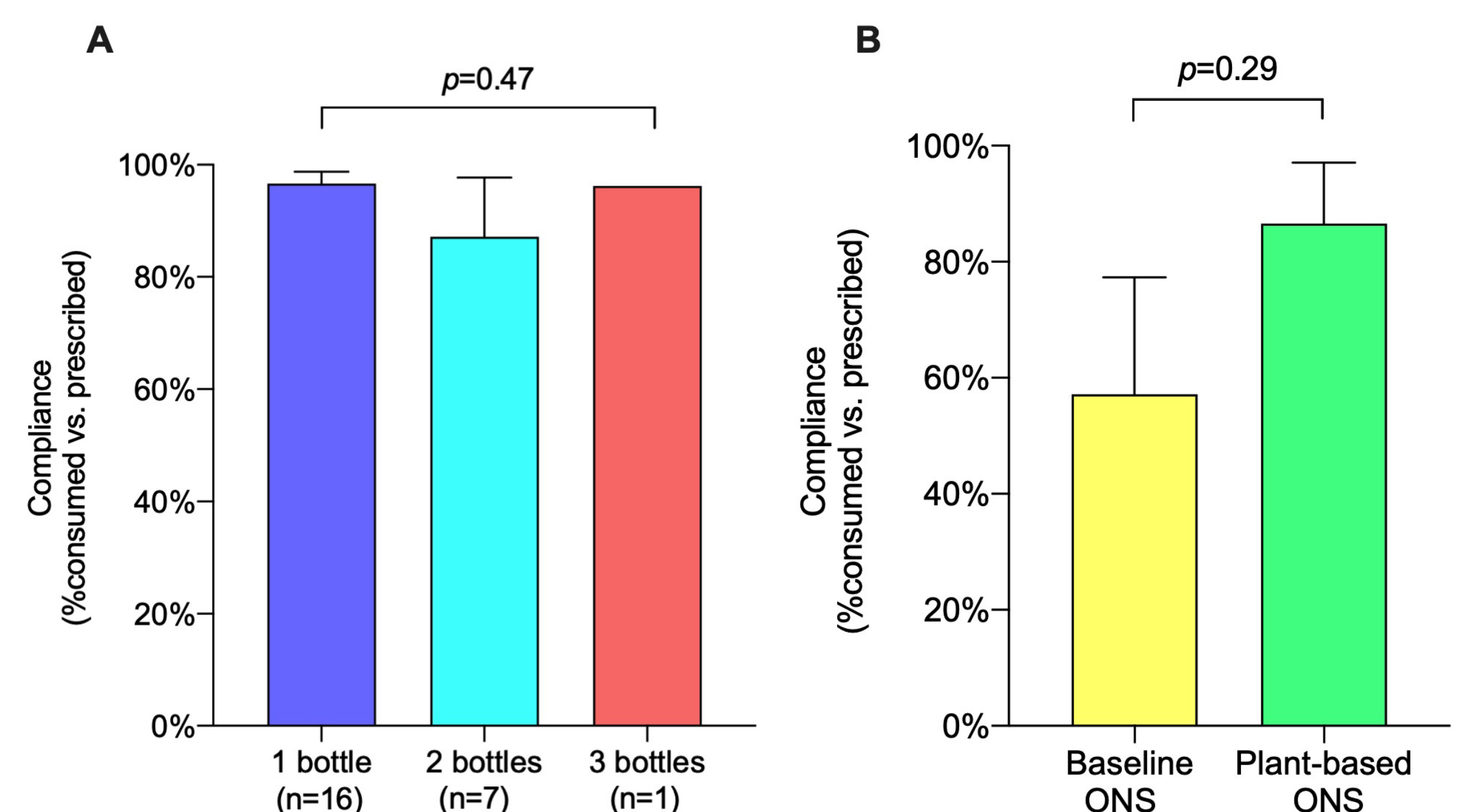


Fig. 2 Compliance (%consumed vs. prescribed) with the plant-based ONS prescription (A) between prescribed volumes and (B) vs. baseline ONS (n=8) (means±SEM).

- Palatability and acceptability:** Patients confirmed that the plant-based ONS was convenient (92%) and fitted in well with their current diet (83%). All palatability outcomes were rated good to excellent (>6/10)³ (Fig. 3).

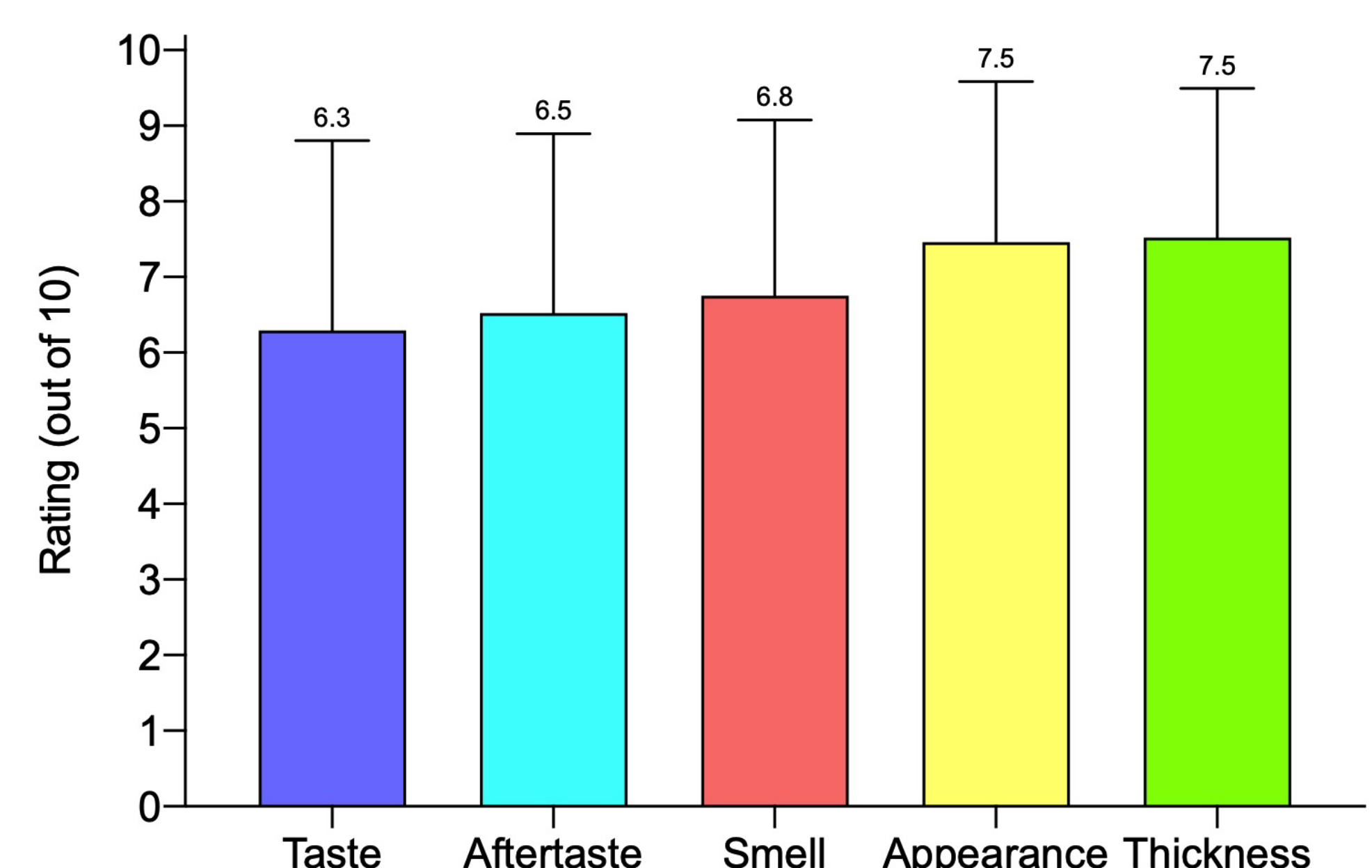


Fig. 3 Palatability outcomes (out of 10) for the plant-based ONS at end of intervention (means±SD).

- Tolerance:** The majority of GI symptoms were absent during the intervention period and stable over time. Patients (79%; Fig. 4) and healthcare professionals (88%) confirmed that the plant-based ONS was well tolerated.

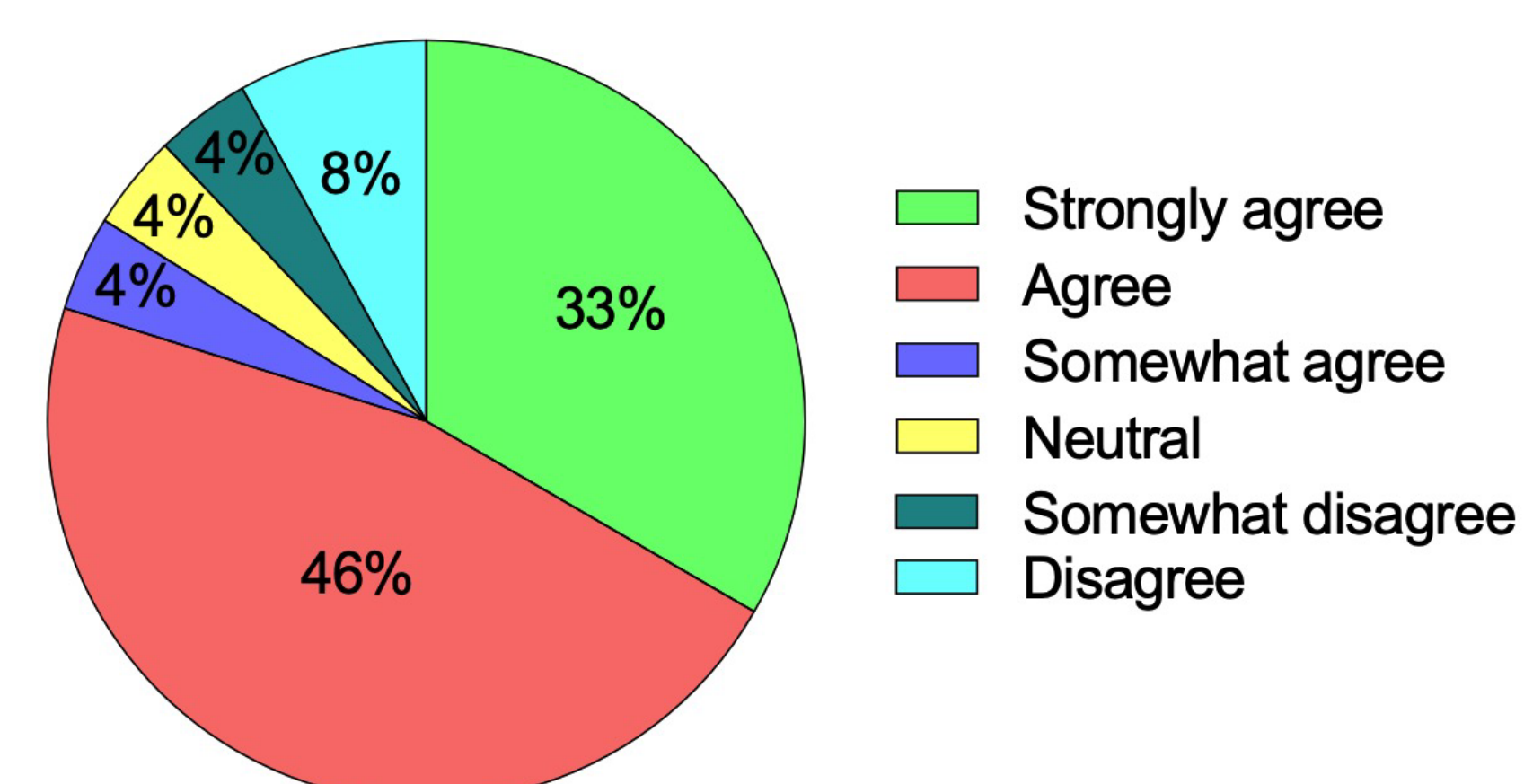


Fig. 4 Patients' response (%) to whether they tolerated the plant-based ONS well.

CONCLUSION

- This study: (i) adds to the evidence base that ONS are well complied with, acceptable and tolerated.
- (ii) highlights that there are a variety of reasons why patients at risk of DRM may require a ready to drink, plant-based ONS; and
- (iii) shows that this plant-based ONS is highly complied with, palatable, and well tolerated. Further research is needed to explore longer-term outcomes of plant-based ONS.