

FINAL REPORT

An Evaluation of the “Cooking for One or Two” Cookery Skills Program



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1 ACKNOWLEDGEMENTS

This Evaluation of the Cooking for 1 or 2 cookery skills program was only made possible by the commitment of the many individuals involved. They came from a diverse range of situations: including volunteers and veterans, Department of Veterans' Affairs staff, dietitians, teachers employed at various State run Community Colleges along the northern coast of NSW, University lecturers and students in their final year of the Bachelor of Nutrition and Dietetics course at the University of Newcastle, and of course, all the class participants who agreed to take part.

The diverse backgrounds and interests of these people belie the special thing they had in common, which was their inspirational and tireless commitment to improving the health and life of Australian veterans. Their commitment was ongoing – requiring sometimes intense activities at sporadic intervals over almost two years.

The Department of Veterans' Affairs Community Advisor in Newcastle, through Ms Di McArtney, supported this commitment, and provided the necessary funds to undertake this Evaluation.

To all of these people, and the Department of Veterans' Affairs, on behalf of all the Investigators, I extend my sincere thanks.

Professor Julie Byles
Chief Investigator
Director, Research Centre for Gender, Health and Ageing

2 EXECUTIVE SUMMARY

This report is the third and final report for the *Evaluation of the Cooking for One or Two* program. It includes data collected throughout the *Evaluation*.

The main aim of the Department of Veterans' Affairs (DVA) *Cooking for One or Two* program is to build confidence and food safety and preparation skills in older adults. Lessons include making a variety of simple but healthy meals, using easy cooking techniques. Classes also contain a social component, as participants prepare and share a main meal and dessert together, in addition to arranging car pooling where possible.

These features are important because it is estimated that up to 30% of people aged over 60 living independently in the community may be suffering from some degree of malnutrition¹. Moreover, recent research showed that of 891 veterans and war widows who underwent a health assessment administered in their home, 37% of participants were classified as 'high risk' of malnutrition, and higher nutritional risk scores were associated with poorer mental and physical health-related quality of life.

Preventing malnutrition is becoming increasingly important as the growing demand for services² and health care costs³ rises in line with an aging population. It is arguable, based on the results of this *Evaluation*, that the *Cooking for One or Two* cookery skills program may be one useful and effective strategy for preventing malnutrition, as well as promoting good health behaviours in the veteran community.

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1. Leahmann, A.B. Nutrition in old age: update and questions for future research: part 1 & 2. *Reviews in Clinical Gerontology* 1991;1:135-145 & 231-240
 2. Smith, P. and Smith, A. (1998) *Superior nutritional care cuts hospital costs*, Nutritional Care Management Institute, Chicago.
 3. Jackson, M.F. Use of community services by elderly patients discharged from general medical and geriatric medical wards. *J Adv Nurs* 1990;15(2):167-175.

Overall:

- 13 classes involving 118 participants were evaluated.
- 67 class participants took part in the evaluation.
- This report provides detailed data on the nutritional and social needs of the participants in each stage of the evaluation (baseline, first follow up, and final follow up).

At baseline - assessment of needs:

- Most evaluation participants were male (75%), and the average age of participants was 71 years (range 54 to 87 years).
- According to dietitian assessment, most participants were not at risk of malnutrition at the start of the classes, although 11% of participants who completed the Mini-Nutritional Assessment were classified as being at risk for malnutrition on this measure.
- Most participants had good nutritional knowledge at the start of the classes, although some reported that they did not know about health problems of excess calcium (58%), saturated fat (3%), too much sugar (21%), excess sodium (17%) and being underweight (31%).
- Most participants had adequate diets although around 40% had less than 2 serves of fruit each day, and 17% had less than 2 serves of vegetables (only 10% had 5 or more serves of vegetables); 22% ate less than three meals each day.
- Most participants drank alcohol, although the majority drank less than 4 drinks per day (91%).
- Food security issues were reported by a small proportion of participants.
- Participants did have high levels of other needs or situations that may increase their future nutritional risk:
 - All participants lived in their own home or self-care unit.
 - 39% were not married (single, widowed, separated or divorced).
 - 42% lived alone, and 47% usually ate alone.
 - 8.5% spent no time with someone who does not live with them.
 - 18% required help with daily tasks because of long-term illness, disability or frailty, and 56% had difficulty with at least one activity of daily living.

- Participants expressed some dissatisfaction with their ability to perform most cooking tasks such as opening screw top lids, using stove top elements, and stirring in a bowl or saucepan.
- 10% reported some form of injury in the past 12 months.
- Average SF36 health-related quality of life profiles for the participants were lower than expected for other Australians of the same age.

By final follow up - monitoring of changes:

- 39 participants completed phase three of the *Evaluation*.
- Participants who remained in the evaluation were more likely to report some needs throughout the *Evaluation*. For example the six month follow-up included a higher proportion of unmarried people, more people with difficulties on activities of daily living, and people with slightly lower levels of social support.
- For these participants there were improvements in:
 - Ability to shop, cook and feed ones self.
 - The proportion eating fruits and vegetables most days.
 - The numbers of serves of fruit and vegetables eaten each day.
 - Serves of meat eaten each day.
 - Nutritional knowledge.
 - Kitchen competencies.
- There was an apparent increase in the number of alcoholic drinks per day over the course of the *Evaluation*, however this change may be due to differences in accuracy of reporting.
- There were very minimal changes in physical and mental health for these participants.

Qualitative analysis:

- Qualitative analysis of interview data and written responses about the views and experiences of both providing and participating in the classes reveals an overwhelmingly positive judgment about the program, and support for its expansion.

This *Evaluation* shows that the cookery program was well received, regarded by

participants as useful and enjoyable, meets a significant need in the veteran population, and would be relevant to many older Australians who are not veterans.

3 MEMBERS OF PROJECT MANAGEMENT COMMITTEE

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4 INTRODUCTION

Cooking for One or Two is a cookery skills program run by the Department of Veterans' Affairs (DVA). The purpose of the program is to build confidence in people to prepare healthy meals for themselves, using simple cooking techniques. Each *Cooking for One or Two* course was held once per week for two hours, over a six-week period and included approximately 8-10 participants. The participants in the program were veterans and/or war widows. The Research Centre for Gender, Health and Ageing (formerly known as CREA) at the University of Newcastle undertook an *Evaluation* of the program on behalf of DVA. The program was evaluated using data from classes run at ten sites along the mid north coast and Newcastle, from mid 2005 to mid 2006.

5 AIMS OF THE FINAL REPORT

The Final Report aims to document:

- Characteristics of *Cooking for One or Two* class participants;
- The outcome analysis of the Short Form-36 self-report quality of life survey;
- Observation of change in frequencies of responses to questionnaire items from baseline, to first follow up and final follow up;
- The analysis of qualitative data from participant, dietitian, program organiser and class instructor interviews; and
- Insight and suggestions from program participants for future classes.

6 ETHICS

The *Evaluation* was granted approval by the University of Newcastle Human Research Ethics Committee, approval number H-008-0405. Approval was received in November 2005 for a variation requesting the addition of a Toronto site to the northern NSW coast classes. A second variation to the original ethics submission was also approved on 15 February 2006. This authorised a small number of interviews with class participants, organisers, teachers and dietitians

about their cookery class experiences. All data in this Evaluation have been de-identified, and no single class participant can be identified.

7 EVALUATION METHODS

The *Evaluation* included a series of targeted measures completed by consenting class participants, to identify where changes in characteristics, abilities and knowledge occurred over time. Data were collected at three time periods: the start of each course (baseline), at the completion of the course, and 6-months later.

Ten sites in total agreed to take part in the *Evaluation*, nine on the northern coast of NSW and one in the Hunter region of NSW. They were:

- Forster –Tuncurry
- Taree
- Laurieton
- Wauchope
- Port Macquarie
- Nambucca Heads
- Coffs Harbour
- Southwest Rocks
- Kempsey
- Toronto

The ten sites conducted 13 classes which were recruited into the *Evaluation*. Classes included as part of the *Evaluation* were held from 21 April to 29 November 2005, and involved a total of 118 participants (who registered with their local Community Education centre and began classes).

In accordance with the approved protocol for the *Evaluation*, class attendees who wished to take part in the *Evaluation* were asked in the first class to sign and return a consent form and complete a baseline questionnaire and dietitian assessment. A follow up questionnaire was posted out to all consenting participants at baseline, at the end of their cooking class program (after a 6-week

period) using the address details provided to the study team. Six months later, a final follow up questionnaire was posted out to each participant.

In May 2006, when all the final questionnaires had been returned, semi-structured interviews with key informants were conducted. The aim of the interviews was to gain insight from the various interviewees about their perspectives and experiences with the program.

8 DATA QUALITY AND ANALYSES

Questionnaires were completed by respondents and returned to the study team at Newcastle, NSW. Completed dietitian forms were also returned. Responses were then entered into an Access (for Windows) database, usually within several days of arrival. Missing data was hard coded into the database to ensure that all available data was recorded. Additionally, a regular audit was undertaken to ensure that all available data had been entered. This involved checking paper records of data received from each centre against the electronic record. Data were then checked to ensure all responses fell within valid ranges. Inconsistent or unlikely responses were checked against the paper record and amended where required.

Frequency tables are presented for key categorical variables in the dataset for the three time points: (a) baseline, when classes commenced, (b) at six weeks, when classes concluded and (c) at six months. In addition, several scales were compiled, namely the Social Interaction Sub-scale of the Duke Social Support Scale, the Mini Nutritional Assessment Scale and the Patient Generated Subjective Global Assessment (for nutrition) and the SF36[®].

The SF36 profile scores were calculated according to the method described in Ware⁴, and adjusted for age and gender. These scores were then standardised to a mean of 50 and standard deviation of 10 allowing comparison with the Australian population, and these were plotted comparing to the Australian

4 Ware, J.E. & Sherbourne, C.D. The MOS 36-item Short Form Health Survey (SF36): I. Conceptual framework and item selection. *Medical Care* **30**, 473-483 (1992).

reference profiles for males and females combined.

Interviews were recorded, and a descriptive analysis of the data was undertaken by researchers at the University. In addition, comments on questionnaires and other written communications were analysed and themes and suggestions noted.

9 QUANTITATIVE RESULTS

9.1 Descriptive analysis of study participants

A summary of the *Cooking for One or Two* class location and recruitment is provided in Table 1. From an eligible number of 118 *Cooking for One or Two* class attendees 67 (57%) provided consent to take part in the study. Response varied by location with only 10% of those from Laurieton agreeing to participate and 30% from Kempsey but with 88% of those from Toronto and 70% from the first session held at Nambucca Head agreeing to participate. Of the 67 providing consent, 60 provided baseline questionnaire data and 55 provided baseline dietitian assessment data. Additionally, 16 participants provided baseline questionnaire data but not dietitian data, 11 provided dietitian data but not baseline questionnaire data, while 44 participants provided both baseline questionnaire data and dietitian data.⁵ At six weeks, we received 38 completed questionnaires and at six months we received 39 completed questionnaires.

Essential demographic data were collected from the self-complete questionnaire, administered at baseline, first follow up and 6-months later (refer to Table 2). The majority of *Evaluation* participants were Australian-born, and ranged in age from 50 to 87 years (average age=71 years). The majority of all cookery class participants were male (75%, 81% and 84% for those who took part at each measurement time point respectively).

⁵ It should be noted that totals included in the tables reflect the total number of participants providing a response. *Not all* participants provided a response to *all* questionnaire items, consequently the totals are often slightly less than the number of participants. Patterns of missing data and loss to follow-up are not examined in this *Evaluation*.

This is not unexpected given that the majority of veterans are male, and DVA targets the course towards the needs of veterans, particularly men who might live alone or be caring for their wives.

The majority of participants resided in “a house” (66%, 70% and 66% at each measurement time point). Many participants reported that they lived alone: 42% of participants at baseline, 46% of participants at first follow up and 46% of participants at final follow up, which suggests that DVA are attracting the type of participants they aimed for in their *Cooking for One or Two* program.

Participants who reported themselves as “divorced” were likely to remain in the *Evaluation* (9%, 14% and 10% of participants were divorced at the three measurement time points). Also, participation by those living in “retirement village/self care” accommodation were likely to remain in the *Evaluation* over time (10%, 5% and 11% of participants). This supports the claim that the course is relevant to individuals living in a wide range of situations, and even when meal/nutritional support can be obtained.

9.2 Outcome evaluation

9.2.1 Participant nutrition knowledge, behaviour and skills

Using selected items from the Diet and Health Knowledge Survey (DHKS)⁶, this study assessed the nutritional comprehension of participants in the *Evaluation* at baseline, first follow up and final follow up (refer to Table 3 and Figure 1). The DHKS is used to obtain information about an individual’s knowledge of and attitudes towards diet, health and food safety issues.

Overall, *Evaluation* respondents showed a “healthy” respect for good dietary practices. The majority believed that eating too much fat could cause health problems, and that a diet that contained low levels of saturated fat was better.

⁶ The Diet and Health Knowledge Survey (DHKS) is conducted by the Economic Research Service of the United States Department of Agriculture.

Most participants also identified that too much sugar and salt/sodium in ones diet is a problem. However, asking about whether eating too much calcium could cause health problems led to the majority of respondents answering “don’t know” (58% of participants at baseline). Additionally, there was a good level of support for eating a variety of foods with 98% of participants at baseline agreeing or strongly agreeing and 100% of those who remained for the final evaluation. The trend of knowledge improvement is shown in Figure 1. There was a clear increase in the proportion agreeing that underweight is bad and too much salt is bad, and trend towards improved knowledge on other items.

Table 4 reports participant feelings towards food security and concerns that might be held regarding provision of food and making it last, as assessed by a brief Food Security Survey.⁷ Across the *Evaluation*, only one respondent (at six weeks and final follow up) indicated they were worried that their food would run out, and three indicated they couldn’t afford balanced meals (at first follow up). A greater number of respondents reported that food didn’t last as long as expected (up to 15%, n=6, of people taking part at final follow up), and unfortunately over 10% (n=4, for those participants again taking part at final follow up) stated that in the past month there had been at least one occasion when they hadn’t eaten for a whole day.

Table 5 reports on the nutritional behaviours of those participants in the *Evaluation* at baseline, first follow up and final follow up, as assessed by items from the Food Frequency Questionnaire (FFQ) including items on alcohol intake. Changes in fruit, vegetables, dairy and meat serves per day are presented in Figure 2 where a slight increase in the number of serves of fruit, vegetables and meat can be observed. In general, respondents supported the “two fruit and three veg” eating program, and report that they usually eat three meals a day (78% of participants at baseline). Respondents said that they cooked a “hot meal” for themselves mostly once per day (47%, 46% and 54% of participants at each measurement time period), however a small number (9% to 16%) said that it only happened once or twice a week.

⁷ The brief Food Security Survey is based on the short form of the Food Security Survey Module, administered by the United States Department of Agriculture.

Fluid intake (non-alcoholic) was good on average; most respondents consumed either 3 to 5 (53%, 43% and 44% of participants at each time point) or 6 to 8 glasses of fluid per day (26%, 41% and 33% of participants at each time point). In terms of alcohol intake, the majority of participants at the three measurement points reported drinking “everyday” (21% to 25%), and that when they did consume alcohol it was usually one to two drinks per day. Overall daily alcohol consumption is presented in Figure 3. A trend of increase in alcohol consumption was observed with participants increasingly reporting 3 to 4 drinks per day as opposed to 1 to 2 drinks per day. This increase possibly reflects more knowledgeable reporting rather than a real change in drinking behaviour, as participants were educated about what constituted a standard drink during the Program.

9.2.2 Activities of daily living and social support

Table 6 reports nutritional risk items. Most participants reported that they were “always able to shop, cook and/or feed” themselves: 96% of participants at baseline, 100% of participants at first follow up and 95% of participants at final follow up, as assessed by selected items from the Australian Nutrition Screening Initiative (ANSI)⁸. Relatively little change was observed over the three time points among those who participated on each occasion, although there seems to be a small improvement in the numbers who report being able to shop, cook and feed themselves (see Figure 4).

Table 7 shows that under one-quarter of respondents reported that they required regular help with daily tasks due to long-term illness, disability or frailty (18% of participants at baseline). Meal delivery services were received by only a small number of cookery class participants (3% to 5%), and received these only 1 to 2 times per week.

⁸ Lipski PS. Australian Nutrition Screening Initiative. *Aust J Ageing* 1996; 5: 14-17.

Table 8 provides details of everyday kitchen and food preparation activities which participants had to rate in terms of their satisfaction with attempt or completion. Activities rated included general tasks that needed to be carried out within the kitchen, such as cleaning vegetables, opening screw top lids, pouring milk, stirring, using a stove top, setting the table and washing dishes. In general, respondents taking part at the different survey time points reported that they were satisfied with their kitchen performance 75%-100% of the time. However, differences in responses by participants at baseline and final follow up were noted for “use stove top / elements” (59% of participants at baseline to 68% of participants at final follow up) and “scrape / stack dishes” (67% of participants at baseline to 78% of participants who responded at final follow up). Responses to the kitchen and food preparation activities are also portrayed graphically in Figure 5. Here an overall trend of increase in activities can be observed.

Table 9 highlights the importance of good and appropriate housing design for an older population and/or those people who have specific physical or injury needs. Overall, around half of respondents said that they could not “reach items in kitchen without bending” (58% of participants at baseline, 56% of participants at first follow up and 62% at final follow up). A small number also said that they couldn’t reach items in the kitchen “without climbing or standing on something” (12%, 8% and 15% of participants who responded at each time point), an activity that could easily lead to accidents and injury.

Table 10 reports the numbers of *Evaluation* participants who said they had difficulty with a variety of activities of daily living because of their health. In general, the majority of participants who responded to the three survey time points indicated that they did not have difficulty with their daily activities (as listed in the table). Greater difficulty was indicated for kneeling or bending, hearing a conversation even with a hearing aid and doing housework without help.

Four items representing “social interaction” were selected from the Dukes Social Support Index⁹ and included in the participant Evaluation questionnaire, with a

⁹ Goodger B, Byles J, Higginbotham N, Mishra G. Assessment of a short scale to measure social support among older people. *Australian and New Zealand Journal of Public Health* 1999;23(3):260-265.

total score ranging from 4 to 12 and a higher score indicative of greater social interaction. Overall, the scores were reasonably high at 9.0, 8.9 and 8.7 for each of the three time periods. Results for individual items of the scale are provided in Table 11. Participants responding to the final follow up survey were less likely to report having more than two people in their local area to depend upon (45% of participants at final follow) compared with participants who responded at baseline (65%). There was some fluctuation in the numbers of cookery class participants reporting spending time with friends/relatives and/or talking to someone on the telephone, perhaps an indication of boosted contact through the cookery class program and decreasing after the program ceased. For the most part, participants spent time with at least three other people (who didn't live with them at the time) over the previous week, and spoke with someone on the phone at least seven times for the week.

However, participants who remained in the final follow up were more likely to not spend time with anyone who did not live with them (from 10% of participants at baseline to 24% of participants at final follow up).

9.2.3 General health and quality of life

Respondents were asked to identify from a list of symptoms, those which had kept them from eating enough during the previous two weeks (Table 12). The majority of participants stated they had no problems eating (83% to 87% of respondents at different survey time points). A small number of participants (6.7%, n=4) said they had "no appetite" at baseline, however, no one reported having no appetite at first and final follow up perhaps as a result of cookery class suggestion that it's better to eat something, albeit small, rather than not at all; or perhaps those with no appetite were more likely to drop out of the classes and/or the *Evaluation*.

Table 13 provides a summary of falls, slips/trips and stumbles reported by participants who took part in different survey time points, and whether or not an injury was sustained. Data are provided for baseline and final follow up only, as the six-week follow up did not allow adequate time to pass for new cases of falls and/or injury to be detected. Therefore, the final follow up results may also

include some falls data initially reported at baseline. The majority of respondents reported not having a fall or sustaining any injury (68% of participants at baseline and 67% of participants at final follow up). A small number reported having a fall to the ground but no injury (proportion of respondents ranging from 1.7% to 5.1%, n = 1 and 2 respectively), and having a trip and a fall but no injury (5.1% to 0.0% of respondents). Respondents to the final follow up survey were more likely to report having an injury after a trip and fall (10% of participants versus 3.4% of participants who responded at baseline). Also, warranting further investigation were four respondents who reported a fall related injury without reporting having a trip or fall (5.1%).

Health related quality of life was measured using the self-completed Short Form-36 (SF36[®]) survey,¹⁰ included in the *Evaluation* questionnaire. The scale measures eight health-related concepts, and two summary component scores are also compiled which represent mental and physical well-being (the component scores are not presented in this report). Standardised SF36[®] profiles for *Cooking for One or Two* participants are presented in Figure 6, for cookery class participants who provided study data at all three time points (i.e. at each of baseline, first follow up and final follow up), contrasted to the Australian normative values. It can be clearly seen that the profiles of cooking participants are for the most part substantially lower than the Australian norms. Lesser difference to the norms was noted for the sub-scales Vitality, Social Function and Mental Health. Interestingly given the small difference generally in the mental health components, there was a larger difference for the mental health component Role Emotional. The largest difference between participants and the Australian norms was noted for sub-scale Role Physical. Generally, participants scored lower on all the physical components. Also noticeable on the figure is the slight decline of some scores for respondents taking part at different survey time points, particularly noticeable for Role Physical, Social Function and Role Emotional sub-scales. This did not seem to be due to those remaining to the six month survey having lower scores at baseline.

10 Ware, J.E. & Sherbourne, C.D. The MOS 36-item Short Form Health Survey (SF36): I. Conceptual framework and item selection. *Medical Care* **30**, 473-483 (1992).

There was little difference between responders and non-responders at six months in baseline scores in four of the profile components (Table 14). However, where there was an apparent trend of difference, six month responders appeared to have higher average scores than non responders, in particular for Physical Function (69 vs. 65), Role Physical (55 vs. 48) Role Emotional (73 vs. 68) and Mental Health (74 vs. 71). These apparent differences were not considered significant as the confidence intervals were broad and overlapped substantially. Figures 7-10 show changes in physical function and mental health sub-scales according to gender and living arrangements.

When asked if their weight had changed over the previous two weeks, most people reported no change, though up to 14% (respondents to the final follow up survey) said that they had lost weight. Along with any self-reported changes to weight, level of food intake was also checked, with most people eating the same as usual. Activity also did not vary extensively over the past month; with up to 67% of respondents carrying out “normal activity with no limitation” (these data are not shown in this report).

9.2.4 Patient Generated Subjective Global Assessment

The scored Patient Generated Subjective Global Assessment (PG-SGA) is an adaptation of the validated nutrition assessment tool, Subjective Global Assessment,¹¹ and was included in this study to identify participants as either well nourished (SGA A), moderately or suspected of being malnourished (SGA B) or severely malnourished (SGA C).

Four items from the PG-SGA were included in the participant self-complete questionnaire, with the remaining questions administered during the dietitian assessment (conducted at baseline only). A total score was calculated using both types of collected data, which may not have worked in the study's favour. A total of 46 participants had complete baseline data and the dietitian assessment which allowed the PG-SGA to be scored: all were rated “A”, well nourished.

11 Detsky AS, McLaughlin JR, Baker JP, Johnston N, Whittaker S, Mendelson RA & Jeejeebhoy KN (1987): What is subjective global assessment of nutritional status? *J Parenter Enteral Nutr.* 1987; 11: 8–13.

9.2.5 Mini Nutritional Assessment

The *Evaluation* dietitians conducted the Mini Nutritional Assessment (MNA)¹² with each consenting cookery class participant at baseline. The MNA tool is used in early screening for risk of nutritional failure in older adults. The MNA test includes a number of anthropometric measurements, 8 dietary questions, 6 lifestyle questions and 2 subjective assessment questions.

The scoring of the MNA identifies people as (a) adequately nourished (MNA score ≥ 24); (b) at risk for malnutrition (MNA score 17-23); and (c) malnourished (MNA score < 17). The one score generated by dietitians using baseline data found that 47 (89%) of participants were adequately nourished. However, the remaining six (11%) were classified as being at risk for malnutrition.

10 QUALITATIVE RESULTS

10.1 Interviews

As part of the *Evaluation*, several semi-structured interviews were conducted with key informants. The interviews were held after the last class group had returned their six-month follow up questionnaires. Interviewees are not identified beyond a description of their role in the *Cooking for One or Two* classes. This is a requirement of the Ethics approval given by the University of Newcastle Human Research Ethics Committee. However, it is important to note that all interviewees indicated that they would be happy to be identified, had we so requested. The interviews gave researchers insight into the operation of the *Cooking for One or Two* Program from various perspectives.

12 Guigoz Y, Vellas B. The mini nutritional assessment (MNA) for grading the nutritional state of elderly patients: Presentation of the MNA, history and validation. In Vellas B, Garry PJ, Guigoz Y, eds. *Nestle Nutrition Workshop Series Clinical Performance Programme. Vol. 1. Mini Nutritional Assessment (MNA): Research and Practice in the Elderly*. Basel, Switzerland: Karger; 1999.

Interview responses gave information which was not available from the quantitative surveys, and the semi structured interview schedule allowed interviewees to discuss issues important to them which as independent researchers, we may have overlooked¹³. The interviews with key informants were held in May – July 2006. The roles of interviewees with respect to the Cooking for 1 or 2 classes are listed below. They are not mutually exclusive. The roles were:

- Veterans x 3
- Dietitian x 2
- Class teacher x 1
- Class participants x 2
- Welfare and Pensions Officers x 2
- Program Organiser x 1

10.1.1 Common characteristics of Interviewees

All interviewees were enthusiastic about the benefits of the program for the individuals who had attended the cookery classes and about the potential benefits of the program for all older (mainly male) members of the Australian community who had not become competent in nutrition, menu planning, food shopping, storage and preparation, cooking and presentation. The emphasis placed on different benefits cited by interviewees reflected their background, and provided a range of perspectives for the Evaluation.

Class Organiser (and Veteran) (CO)

The CO is a veteran and has been involved with Veterans' Affairs "forever". For the last nine years he has been *Project Officer* with the *Mid North Coast Welfare and Pension Officers Network*. His tireless work to get the *Cooking for One or Two* program implemented in his network is both inspirational and a testament to his commitment to the organisation.

13 Silverman, David, 2001, *Interpreting Qualitative Data. Methods for Analysing Talk, Text and interaction*. 2nd Edition, Sage Publications, London.

CO had become aware of the program's existence in 2004 through contacts he had with veterans in Queensland, where it had been run by some of the Queensland sub branches and deemed very successful by them. In discussions with other network delegates, CO ascertained that all had similar needs amongst their membership – in that many veterans found themselves suddenly either alone, or responsible for cooking for the first time, and were not equipped with the knowledge, skills or confidence to maintain a nutritious diet. Moreover, there were others, who had been alone for sometime, who were socially isolated and consumed alcohol above healthy levels, and as a result were not well nourished.

With this knowledge, CO liaised with the DVA, Community Colleges in cities along the mid North Coast of NSW and other members of his network to firstly pilot the Cookery program in Forster, and then implement the program in eight other centres. CO negotiated the cost of running the program with the Colleges, negotiated with the DVA for a *Community Grant* to subsidize the veterans' individual payments for the course (about \$6 / lesson), liaised with service clubs to provide transport for students if needed and coached other project officers in his network about organising the classes and recruiting participants. All of this work has been undertaken by CO on a voluntary basis.

CO said that the Community Colleges were enthusiastic about conducting the classes, and had not used all the money they had quoted originally, with the balance being spent by the network on literature for the Veterans from the Heart Foundation and Diabetes Australia. He said he had only received positive feedback from Community Colleges, veteran students, and the sub-branch Project Officers. He has also had inquiries about the program from other networks in NSW who have heard about it from the "members' grapevine".

Like the other veterans interviewed, CO regards the social benefits for veterans who participate in the program as paramount, and also links veterans' social isolation with unhealthy levels of alcohol consumption and ill health. Most of CO's work is at an organisational level, and it is this aspect that CO's interview focused. These are addressed separately below.

Dietitian interviews

The two dietitians interviewed thought the Cookery program was “excellent”, and were particularly impressed with its potential to impact on the nutritional status of class participants who were under or mal nourished. They emphasised that older veterans were a group at risk of mal /under nourishment because of their common characteristics, i.e. they were:

- Older males;
- Likely to be widowers;
- Likely to have become carers for wives who could no longer undertake their traditional roles with respect to provision of meals in the home;
- Vulnerable to social isolation, especially with respect to the social aspects of food consumption;
- Likely to consume unhealthy levels of alcohol, sometimes instead of nutritionally balanced meals; and/or
- Likely to have a BMI which leads to an assumption that they are adequately nourished, though this may well be false (one dietitian noted that one third of older Australians are mal - nourished).

The dietitians also suggested that the class provided a valuable opportunity for more contact with veterans, and if the program were expanded, to older members of the community generally. They suggested incorporating or extending the classes to include exercise, as well as physiotherapy and occupational therapy. They noted that the regional basis of recruits provided an opportunity to involve them in decision making about activities and to capitalise on existing social networks, organisations and resources. The only obstacle they noted was the lack of a “co-ordinator” to liaise amongst different organisations to produce a mutual benefit.

One of the dietitians suggested that veterans (or older people generally) who are admitted to hospital and whose discharge plan includes a dietary supplement, could be flagged as likely to be in need of the program, and encouraged to attend a program conducted by dietitians in the public health system.

Indeed the small class structure of the program (ideal maximum of 10 participants) was regarded by all interviewees as an essential component of its success – as it also gave all participants an opportunity to actively participate rather than simply observe others, as well as allowed class teachers to encourage participants individually. It also facilitated interaction among participants and was more likely to nurture social relationships than would be the case in a larger class. Both dietitians observed positive changes in the interactions amongst students over the course, in that the “quieter” students were actively and happily participating as they gained confidence as the course progressed.

An interesting observation made by one of the dietitians was that veterans, as pupils, were easy to teach, and she deduced that was because they had been trained in their military careers to follow directions without question.

Veteran interviews

The two veteran class participants interviewed were both male, and both very active community members - in veterans' affairs, as well as other community organisations. One interviewee, V1, was a *Welfare and Pensions Officer* (voluntary position) for his local sub branch, which required weekly attendance at the local “office” to help veterans with their pension and welfare claims (he estimated that he and the three other officers together dealt with about 16 claims per week).

The other, V2, had recently become a carer for his wife, to whom he was devoted, and it was this new role that motivated him to enroll in the class. He was very active in the Senior Citizens Club and the local *Labor* party. V2 shared the cooking responsibilities with his wife as he had throughout their marriage. His motivation for enrolling in the class was to “lead by example” (to other veterans). He also said that although he was a “competent cook”, he had found the classes interesting, enjoyable and useful revision – particularly in the area of safe food storage and avoiding cross contamination, which he had only passing knowledge prior to completing the cookery course. He said he enjoyed being in the company of other veterans, and the camaraderie that flowed from this.

Both veterans were very enthusiastic about the general benefits of the cookery program, and both emphasised the social aspects as “very important”, in contrast with the dietitians who emphasised the nutrition aspects as most important. Both veterans were aware that there was a tendency for members of their community, especially those who live alone, to become quite reclusive, neglect their self care and consume “too much drink” – often when alone. They believed the classes were an excellent mechanism to facilitate social contact and possibly forge new friendships and social interactions. Both were well aware that social isolation impacts negatively on veterans’ general well being. V2 was impressed by the changes he noticed in individuals in his Cookery class. He had observed marked changes between the first and last classes in the confidence of fellow students specifically that the “quiet” students had “...really come out of their shells”. He also believed that this was less likely to happen in a larger group.

In addition, both veterans believed the course would be beneficial for other groups of older Australians as well as veterans, especially males who found themselves responsible for cooking meals for themselves and maybe their spouse, for the first time. V1 noted that DVA were not averse to including community members generally in their organised activities, citing the exercise classes at a local venue as an example. Both veterans believed the Cookery program was as relevant to subgroups in the general community of older Australians as it was to subgroups of veterans, and would like to see it expanded to be more inclusive.

10.1.2 Barriers to Participation in the Program

1 Advertising / publicity

Veteran interviewees thought the program could be advertised in the Department’s newsletter for veterans, *Vetaffairs*, and *Reveille* (*Vetaffairs* is published four times a year and distributed to more than 370,000 members of the veteran community. It provides regular, up-to-date, information of interest to the veteran community, including important information about government policies, programs and initiatives. *Reveille* is the official magazine of The Returned and Services League of Australia, New South Wales Branch). V1 believed that the

best advertising was “word of mouth”, noting that since the Toronto course had finished, another local sub-branch had had sufficient response to its advertising for students to run two classes.

CO also made the point that the DVA had invested a lot of money in developing the program, and had an excellent product, but that they had failed to carry through with effective distribution / implementation. The current structure meant that implementation depended on the commitment and good will of individuals in each sub branch, which meant the program was not available to all veterans who wanted it and/or needed it.

2 Other Recruitment Strategies

Veterans suggested that welfare officers in the sub-branches were well placed to identify veterans who may be in greatest need of the program, but were unlikely to attend without some encouragement. Transport was unlikely to be a barrier beyond the first class, if car pooling was incorporated into initial class discussions, and RSL clubs provided transport in their courtesy buses to students who could not make other arrangements. Classes held in the evenings may be a barrier for some veterans. As classes may be held in school grounds, this is difficult to overcome in the winter months and in term time. Offers of transport may overcome this. General Practitioners and other service providers, especially from the public sector, could be encouraged to promote the course, especially to those veterans (or older people) they believe would benefit from it.

3 Financial

As mentioned above – a “pay as you go” option may alleviate financial barriers to participation. Given the program structure, and the requirement to purchase ingredients for the class prior to each class, such an option would probably require an “underwriting” arrangement of the delivering institution and the DVA, so that community organizations were not left to bear the cost of absentees.

10.1.3 Interviewee's suggestions with respect to general program organisation

All interviewees regarded the lessons themselves as excellent, and all interviewees believed that the program should be:

1. Expanded to include relevant non veterans;
2. Available nationally;
3. Advertised widely;
4. Linked to other service providers (networking / collaboration with public hospitals, social clubs for example) and community resources and facilities (Community Colleges / centres), as well as
5. Nationally organised - providing co-ordination, equitable funding and use of resources;
6. Expanded to include related skills/ knowledge and incorporate a follow up class(es) to reinforce knowledge and skills as well as social contacts; and
7. Have the option "pay as you go", as many older Australians may find this easier financially.

10.1.4 Interviewees' suggestions for future classes

Comments and suggestions were positive – and directed towards expanding the scope of the Program. They included:

1. Incorporate some other activities e.g. exercises, other social outings – based on participant suggestions;
2. Have more than one Project Officer / network responsible for the classes at sub branch level – as the time commitment is significant;
3. Accept non veterans as participants;
4. Involve other organisations - at least in advertising the course;
5. Use very clear signage if courses held in large buildings such as schools, as well as an agreed "meeting point" prior to the classes, and
6. Maximum of 10 participants, otherwise lose the important social advantages of small group interactions.

10.2 Comments returned with participants' Questionnaire responses

Participants were invited to comment on their diet and eating habits in each of the three questionnaires. In the final questionnaire they were also invited to comment on any aspect of the course they wished. In total, 71 comments were received. Of these, 32 included comments about the course as a whole, and all but two were very positive. Of the two negative comments, one was from a participant who attended just one class, and the other comment was critical of the presentation rather than the content of the course.

Responses such as:

- *I would definitely recommend it to others*
- *...the fellowship was great*
- *Most enjoyable and helpful*
- *I enjoyed the cooking class and did learn a lot...*
- *...I now have the confidence in cooking meals etc that I would not attempt before*
- *DVA should be congratulated on taking a very positive step.*

...were typical, and convey the general overall sentiment expressed in the comments.

In response to the question "Anything we've missed?" one participant wrote:

No. [But] I would like some sex with a lady.

This was unexpected, and though not related directly to nutrition or the cookery program, it did serve as a timely reminder about the importance of social relationships to "good health". In addition, unsolicited feedback received informally from class teachers was positive. Teachers reported that class participants had enjoyed the course and had suggested that it should run for longer.

10.3 Summary of qualitative results

The feedback from all sources was overwhelmingly positive.

The interviews provided useful insight into various levels of the program's operation. Firstly, the complex mechanics of organising the program became evident when the processes undertaken by the class organizer were explained. Moreover, that interview revealed the fundamental reliance of DVA on volunteer labour for organisation of the program, and consequently the inequities related to veterans' access to the program.

As the volunteer labour of veterans is a finite and diminishing resource, it would seem that strategically, other organisation structures will have to be introduced by the DVA in the near future.

Secondly, all interviewees enthusiastically supported the expansion of the program's scope to include all older Australians who have similar needs to the veteran's to whom the Program is currently targeted.

Thirdly, interviewees suggested that at the level of individual classes, or perhaps on a regional basis, classes could become the vector for other information pertinent to this subgroup of older Australians. Among suggested inclusions were exercise classes, cardiac health, and social excursions or outings.

Fourthly, using dietitians working in the public health system and / or General Practitioners to flag older people / veterans at risk of malnutrition and who would be likely to benefit from the Cooking for 1 or 2 program may be another efficient way of recruiting participants most in need of the course.

11 CONCLUSION

Data provided by participants in the *Evaluation* indicates that *Cooking for One or Two* attracts participants who have personal and social needs. While few participants were identified as being at risk of malnutrition, others had needs in

terms of living alone, caring for others, or having some difficulties obtaining and/or preparing meals. This was evident in both the quantitative and qualitative data.

Judging from the characteristics of those participants remaining in the *Evaluation* at first and final follow up, and the comments which they provided, it appears that those with significant social and nutrition-related needs were more likely to stay in the *Evaluation* and/or the cookery class program.

It also seems, at an individual level, that **the program meets its aims well** - that is it **does** build confidence in veterans to prepare healthy meals for themselves, and, for many of them, attending and completing the classes is associated with an improvement in their lives.

At an organisational level, however, there was concern expressed that the program was

- Not available to all veterans because there was no uniform and adequate organisational structure in place to guarantee the availability of the program, and
- Exclusive relying on volunteers to organise the delivery of the programs, and that this was not producing socially just outcomes for veterans, particularly with respect to access / availability of the program to veterans

At a global level, there was an expressed view, by both relevant professionals and veterans, that the program was suitable for older Australians generally, especially those who found themselves in similar situations to many of the participants in this evaluation. That is, those who live alone, especially if their singleton status is caused by a recent event, and who are not experienced or knowledgeable about the routine provision of nutritious small meals and safe food preparation and storage, are likely to derive great benefit from participating in the program. Traditional gender relations in Australia mean that most of the population in this sub group will be male. Moreover, as several participants suggested, the classes provide an ideal opportunity to incorporate additional knowledge and activities to a group which is infamously difficult to access.

Based on participants' comments, it seems reasonable to suggest that the potential exists for the *Cooking for One or Two* cookery skills program to embrace a wider group of participants and a broader content base, without losing its ability to meet the needs and preferences of individual class participants and local populations, precisely because it can be flexible in both organisation and content. Co-ordination with other service providers and the public health system would seem to be one avenue where this potential could be realised.

Therefore, based on this *Evaluation*, we are pleased to commend the program as one which is judged by both participants and objective indicators to meet its goals successfully. Further, the program clearly has the potential to become a vehicle for health promotion which could be made available nationally to this vulnerable group of older Australians.

12 TABLES AND FIGURES

Table and figures are presented in order of discussion in the text. As previously mentioned, totals included in the tables reflect the total number of participants providing a response. Not all participants provided a response to all questionnaire items, consequently the totals are often slightly less than the number of participants. Percentages will not always total 100 exactly due to rounding.

Table 1 - Summary of cookery class locations and recruitment

Class location	Start date	Finish data	Recruitment of <i>Evaluation</i> participants
Kempsey	21/April/2005	26/May/2005	3 out of 10
Forster-Tuncurry	2/May/2005	6/June/2005	8 out of 12
Wauchope	24/May/2005	5/July/2005	6 out of 10
Coffs Harbour	27/June/2005	1/August/2005	2 out of 8
Nambucca Heads	19/May/2005	23/June/2005	7 out of 10
	17/August/2005	28/Sept/2005	4 out of 7
Taree	26/May/2005	7/July/2005	7 out of 10
	13/Oct/2005	24/Nov/2005	2 out of 3
South West Rocks	24/June/2005	29/July/2005	9 out of 13
Port Macquarie	25/May/2005	6/July/2005	7 out of 11
	10/August/2005	14/Sept/2005	4 out of 6
Laurieton	29/August/2005	3/Oct/2005	1 out of 10
Toronto	18/Oct/2005	29/Nov/2005	7 out of 8

Table 2 - Characteristics of participants

Participant characteristic	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
GENDER			
Male	45 (75)	29 (81)	32 (84)
Female	15 (25)	7 (19)	6 (16)
Total N	60	36	38
MARITAL STATUS			
Married	34 (60)	21 (58)	24 (62)
De facto	1 (1.8)	1 (2.8)	0 (0)
Widowed	13 (23)	8 (22)	9 (23)
Separated	3 (5.3)	1 (2.8)	2 (5.1)
Divorced	5 (8.8)	5 (14)	4 (10)
Never married	1 (1.8)	0 (0)	0 (0)
Total N	57	36	39
AGE (years)			
Minimum	54.0	55	52
Maximum	87.0	99	87
Average	70.6	73.5	72.2
Total N	60	38	39
NATIONALITY			
Born in Australia	48 (81)	28 (74)	32 (82)
Other	11 (19)	10 (26)	7 (18)
Total N	59	38	39
LANGUAGE			
Speaks English at home	58 (100)	38 (100)	38 (97)
Other	0 (0)	0 (0)	1 (2.5)
Total N	58	38	39
HOUSING			
A house	38 (66)	26 (70)	25 (66)
A flat/ unit/ apartment/ villa/ townhouse	13 (22)	9 (24)	9 (24)
Mobile home/ caravan/ cabin/ houseboat	1 (1.7)	0 (0)	0 (0)
Retirement village/ self care unit	6 (10)	2 (5.4)	4 (11)
Nursing home	0 (0)	0 (0)	0 (0)
Hostel	0 (0)	0 (0)	0 (0)
Other	0 (0)	0 (0)	0 (0)
Total N	58	37	38

Participant characteristic	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
LIVING ARRANGEMENT			
No one, I live alone	25 (42)	17 (46)	18 (46)
Spouse or partner	31 (53)	19 (51)	20 (51)
Own children	3 (5.1)	1 (2.7)	1 (2.6)
Other family members	3 (5.1)	1 (2.7)	0 (0)
Non-family members	1 (1.7)	1 (2.7)	0 (0)
Total N	59	37	39

Table 3 - Participant nutritional knowledge

Diet and Health Knowledge Survey Item and participant response	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Eating too much fat causes health problems			
Strongly Agree	32 (54)	21 (57)	23 (61)
Agree	25 (42)	15 (41)	13 (34)
Don't Know	1 (1.7)	0 (0)	0 (0)
Disagree	1 (1.7)	1 (2.7)	1 (2.6)
Strongly Disagree	0 (0)	0 (0)	1 (2.6)
Total N	59	37	38
Not eating enough fibre causes health problems			
Strongly Agree	24 (41)	11 (30)	18 (47)
Agree	29 (49)	24 (65)	16 (42)
Don't Know	3 (5.1)	2 (5.4)	4 (11)
Disagree	3 (5.1)	0 (0)	0 (0)
Strongly Disagree	0 (0)	0 (0)	0 (0)
Total N	59	37	38
Eating too much salt or sodium causes heart problems			
Strongly Agree	20 (34)	12 (32)	11 (28)
Agree	29 (49)	20 (54)	23 (59)
Don't Know	9 (15)	4 (11)	3 (7.7)
Disagree	1 (1.7)	1 (2.7)	2 (5.1)
Strongly Disagree	0 (0)	0 (0)	0 (0)
Total N	59	37	39
Eating too much cholesterol causes health problems			
Strongly Agree	21 (36)	14 (38)	15 (39)
Agree	30 (52)	20 (54)	19 (50)
Don't Know	7 (12)	2 (5.4)	2 (5.3)
Disagree	0 (0)	1 (2.7)	2 (5.3)
Strongly Disagree	0 (0)	0 (0)	0 (0)
Total N	58	37	38
Eating too much calcium causes health problems			
Strongly Agree	2 (3.4)	2 (5.4)	3 (7.7)
Agree	13 (22)	10 (27)	8 (21)
Don't Know	34 (58)	20 (54)	25 (64)
Disagree	8 (14)	5 (14)	3 (7.7)
Strongly Disagree	2 (3.4)	0 (0)	0 (0)
Total N	59	37	39

Diet and Health Knowledge Survey Item and participant response	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Eating too much sugar causes health problems			
Strongly Agree	19 (33)	11 (30)	12 (31)
Agree	27 (47)	21 (57)	25 (64)
Don't Know	10 (17)	3 (8.1)	2 (5.1)
Disagree	2 (3.4)	2 (5.4)	0 (0)
Strongly Disagree	0 (0)	0 (0)	0 (0)
Total N	58	37	39
Being overweight causes health problems			
Strongly Agree	33 (56)	21 (57)	23 (59)
Agree	24 (41)	13 (35)	15 (38)
Don't Know	1 (1.7)	2 (5.4)	0 (0)
Disagree	1 (1.7)	1 (2.7)	1 (2.6)
Strongly Disagree	0 (0)	0 (0)	0 (0)
Total N	59	37	39
Being underweight causes health problems			
Strongly Agree	12 (20)	7 (19)	11 (28)
Agree	29 (49)	19 (51)	24 (62)
Don't Know	18 (31)	10 (27)	4 (10)
Disagree	0 (0)	1 (2.7)	0 (0)
Strongly Disagree	0 (0)	0 (0)	0 (0)
Total N	59	37	39
It is important to use salt or sodium only in moderation			
Strongly Agree	13 (22)	7 (19)	14 (37)
Agree	37 (63)	26 (70)	22 (58)
Don't Know	7 (12)	2 (5.4)	0 (0)
Disagree	1 (1.7)	2 (5.4)	1 (2.6)
Strongly Disagree	1 (1.7)	0 (0)	1 (2.6)
Total N	59	37	38
It is important to choose a diet low in saturated fat			
Strongly Agree	23 (40)	14 (38)	16 (41)
Agree	28 (48)	21 (57)	19 (49)
Don't Know	6 (10)	1 (2.7)	2 (5.1)
Disagree	0 (0)	1 (2.7)	2 (5.1)
Strongly Disagree	1 (1.7)	0 (0)	0 (0)
Total N	58	37	39
It is important to eat a variety of foods			
Strongly Agree	30 (51)	23 (62)	23 (59)
Agree	28 (47)	14 (38)	16 (41)
Don't Know	0 (0)	0 (0)	0 (0)
Disagree	0 (0)	0 (0)	0 (0)
Strongly Disagree	1 (1.7)	0 (0)	0 (0)
Total N	59	37	39

Table 4 - Participant food security

Participants who said “yes” to being concerned about food security items	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Been worried that food would run out	0 (0)	1 (2.7)	1 (2.6)
Found that food bought didn't last as expected	6 (10)	3 (8.1)	6 (15)
Couldn't afford balanced meals	1 (1.7)	3 (8.1)	1 (2.6)
Cut down on the size of a meal or skipped a meal	25 (42)	11 (30)	15 (38)
Ate less	6 (10)	6 (16)	5 (13)
Felt hungry, but didn't eat	6 (10)	2 (5.6)	3 (7.7)
Lost weight	13 (22)	7 (19)	5 (13)
Not eaten for a whole day	4 (6.8)	2 (5.4)	4 (10)
Total N	59	37	39

Note: responses to items are not mutually exclusive

Table 5 - Participant nutritional behaviors

Participant behaviour and response category	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Serves of fruit each day			
No serves	2 (3.4)	1 (2.7)	1 (2.6)
One serve	21 (36)	8 (22)	7 (18)
Two serves	21 (36)	13 (35)	14 (36)
Three serves	11 (19)	13 (35)	13 (33)
Four serves	2 (3.4)	1 (2.7)	3 (7.7)
Five or more	1 (1.7)	1 (2.7)	1 (2.6)
Total N	58	37	39
Serves of vegetables each day			
No serves	0 (0)	0 (0)	2 (5.1)
One serve	10 (17)	9 (24)	8 (21)
Two serves	7 (12)	3 (8.1)	7 (18)
Three serves	23 (40)	14 (38)	11 (28)
Four serves	12 (21)	7 (19)	8 (21)
Five or more	6 (10)	4 (11)	3 (7.7)
Total N	58	37	39
Serves of dairy products each day			
No serves	4 (7)	4 (11)	4 (10)
One serve	22 (39)	13 (35)	13 (33)
Two serves	18 (32)	12 (32)	11 (28)
Three serves	10 (18)	6 (16)	7 (18)
Four serves	3 (5.3)	1 (2.7)	3 (7.7)
Five or more	0 (0)	1 (2.7)	1 (2.6)
Total N	57	37	39
Serves of meat each day			
No serves	1 (1.9)	0 (0)	1 (2.6)
One serve	37 (71)	31 (86)	24 (62)
Two serves	13 (25)	5 (14)	13 (33)
Three serves	0 (0)	0 (0)	1 (2.6)
Four serves	1 (1.9)	0 (0)	0 (0)
Five or more	0 (0)	0 (0)	0 (0)
Total N	52	36	39

Participant behaviour and response category	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
How many meals do you have each day?			
None	0 (0)	0 (0)	0 (0)
One	3 (5)	2 (5.4)	2 (5.1)
Two	10 (17)	7 (19)	3 (7.7)
Three	47 (78)	28 (76)	34 (87)
Total N	60	37	39
How often the person cooks themselves a hot meal			
Never	11 (19)	2 (5.4)	1 (2.6)
One time/day	27 (47)	17 (46)	21 (54)
1-2 times/day	9 (16)	7 (19)	7 (18)
Every couple/days	6 (10)	5 (14)	6 (15)
Only 1-2 times/week	5 (8.6)	6 (16)	4 (10)
Total N	58	37	39
How many people usually eat with			
No One	27 (47)	19 (51)	21 (54)
One person	30 (52)	18 (49)	18 (46)
Two or more others	1 (1.7)	0 (0)	0 (0)
Total N	58	37	39
Glasses/cups of non-alcoholic drinks each day			
0-2 glasses	5 (8.6)	3 (8.1)	6 (15)
3-5 glasses	31 (53)	16 (43)	17 (44)
6-8 glasses	15 (26)	15 (41)	13 (33)
9+ glasses	7 (12)	3 (8.1)	3 (7.7)
Total N	58	37	39
How often usually drink alcohol			
Never	7 (12)	6 (16)	5 (13)
Rarely	4 (6.8)	1 (2.7)	3 (7.7)
Less once/week	6 (10)	1 (2.7)	2 (5.1)
1-2 days/week	11 (19)	8 (22)	7 (18)
3-4 days/week	8 (14)	5 (14)	10 (26)
5-6 days/week	8 (14)	7 (19)	4 (10)
Every day	15 (25)	9 (24)	8 (21)
Total N	59	37	39
On a day when drinking, how many drinks usually had			
1-2 drinks/day	31 (53)	17 (49)	16 (44)
3-4 drinks/day	15 (25)	12 (34)	15 (42)
5-8 drinks/day	4 (6.8)	2 (5.7)	3 (8.3)
9+ drinks/day	1 (1.7)	0 (0)	0 (0)
Total N	8 (14)	4 (11)	2 (5.6)

Table 6 - Participant nutritional risk items

ANSI item and response category	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Have an illness or condition that caused change in kind and/or amount of food			
Yes	24 (41)	14 (39)	14 (36)
No	34 (59)	22 (61)	25 (64)
Total N	58	36	39
Eat fruit or vegetables most days			
Yes	58 (100)	37 (100)	38 (97)
No	0 (0)	0 (0)	1 (3)
Total N	58	37	39
Eat dairy products most days			
Yes	54 (93)	30 (81)	32 (82)
No	4 (7)	7 (19)	7 (18)
Total N	58	37	39
Have 3 or more glasses of beer, wine or spirits almost every day			
Yes	20 (34)	10 (27)	12 (31)
No	38 (66)	27 (73)	27 (69)
Total N	58	37	39
Have any teeth, mouth or swallowing problems that make it hard to eat			
Yes	6 (11)	5 (14)	6 (11)
No	49 (89)	31 (86)	49 (89)
Total N	55	36	55
Take 3 or more prescribed or over-the-counter medicines every day			
Yes	34 (59)	22 (59)	21 (54)
No	24 (41)	15 (41)	18 (46)
Total N	58	37	39
Always able to shop, cook and/or feed oneself			
Yes	54 (96)	36 (100)	37 (95)
No	3 (4)	0 (0)	2 (5)
Total N	57	36	39

Table 7 - Participant service needs

Participant service need and provision	Baseline	F/up 1	Final F/up
Regularly need help with daily tasks because of long-term illness, disability or frailty			
Yes	10 (18)	7 (19)	3 (7.9)
No	46 (82)	29 (81)	35 (92)
Total N	56	36	38
Receive any type of meal delivery services			
Yes	3 (5.3)	1 (2.7)	0 (0)
No	54 (95)	36 (97)	39 (100)
Total N	57	37	39
If "yes" how often is the service received			
One time/day	0 (0)	0 (0)	0 (0)
1-2 times/day	0 (0)	0 (0)	0 (0)
Every couple of days	0 (0)	0 (0)	0 (0)
Only 1-2 times/week	2 (3.4)	1 (2.7)	0 (0)
<i>Not applicable</i>	56 (97)	36 (97)	39 (100)
Total N	58	37	39

Table 8 - Participant satisfaction with daily household activities

Participant behaviour and response category	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Clean vegetables			
100% of the time	27 (47)	17 (49)	21 (58)
75% of the time	15 (26)	9 (26)	10 (28)
50% of the time	5 (8.8)	7 (20)	2 (5.6)
25% of the time	5 (8.8)	0 (0)	3 (8.3)
0% of the time	5 (8.8)	2 (5.7)	0 (0)
Total N	57	35	36
Pour from a milk carton			
100% of the time	36 (62)	22 (61)	24 (65)
75% of the time	13 (22)	8 (22)	9 (24)
50% of the time	5 (8.6)	2 (5.6)	0 (0)
25% of the time	2 (3.4)	1 (2.8)	1 (2.7)
0% of the time	2 (3.4)	3 (8.3)	3 (8.1)
Total N	58	36	37
Open screw top lids			
100% of the time	33 (57)	21 (60)	23 (59)
75% of the time	14 (24)	7 (20)	10 (26)
50% of the time	6 (10)	6 (17)	3 (7.7)
25% of the time	4 (6.9)	1 (2.9)	2 (5.1)
0% of the time	1 (1.7)	0 (0)	1 (2.6)
Total N	58	35	39
Use stove top / elements			
100% of the time	33 (59)	20 (57)	25 (68)
75% of the time	6 (11)	9 (26)	7 (19)
50% of the time	8 (14)	4 (11)	3 (8.1)
25% of the time	5 (8.9)	1 (2.9)	2 (5.4)
0% of the time	4 (7.1)	1 (2.9)	0 (0)
Total N	56	35	37
Stir against resistance in a bowl or saucepan			
100% of the time	28 (50)	20 (61)	19 (51)
75% of the time	9 (16)	4 (12)	11 (30)
50% of the time	5 (8.9)	7 (21)	2 (5.4)
25% of the time	6 (11)	1 (3)	2 (5.4)
0% of the time	8 (14)	1 (3)	3 (8.1)
Total N	56	33	37

Participant behaviour and response category	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Set table			
100% of the time	31 (54)	20 (56)	28 (72)
75% of the time	15 (26)	7 (19)	6 (15)
50% of the time	5 (8.8)	6 (17)	3 (7.7)
25% of the time	4 (7)	1 (2.8)	0 (0)
0% of the time	2 (3.5)	2 (5.6)	2 (5.1)
Total N	57	36	39
Carry hot food to table			
100% of the time	35 (61)	23 (66)	25 (69)
75% of the time	12 (21)	5 (14)	8 (22)
50% of the time	5 (8.8)	5 (14)	1 (2.8)
25% of the time	2 (3.5)	2 (5.7)	2 (5.6)
0% of the time	3 (5.3)	0 (0)	0 (0)
Total N	57	35	36
Clean up cooking surfaces			
100% of the time	38 (66)	26 (72)	30 (79)
75% of the time	11 (19)	5 (14)	5 (13)
50% of the time	4 (6.9)	3 (8.3)	1 (2.6)
25% of the time	2 (3.4)	2 (5.6)	2 (5.3)
0% of the time	3 (5.2)	0 (0)	0 (0)
Total N	58	36	38
Scrape / stack dishes			
100% of the time	39 (67)	25 (69)	29 (78)
75% of the time	10 (17)	6 (17)	5 (14)
50% of the time	7 (12)	4 (11)	2 (5.4)
25% of the time	0 (0)	0 (0)	0 (0)
0% of the time	2 (3.4)	1 (2.8)	1 (2.7)
Total N	58	36	37
Wash pots and pans			
100% of the time	40 (69)	24 (69)	30 (79)
75% of the time	10 (17)	5 (14)	5 (13)
50% of the time	5 (8.6)	2 (5.7)	1 (2.6)
25% of the time	2 (3.4)	2 (5.7)	1 (2.6)
0% of the time	1 (1.7)	2 (5.7)	1 (2.6)
Total N	58	35	38
Put away utensils and dishes			
100% of the time	41 (72)	24 (67)	33 (85)
75% of the time	10 (18)	4 (11)	4 (10)
50% of the time	4 (7)	5 (14)	1 (2.6)
25% of the time	1 (1.8)	3 (8.3)	1 (2.6)
0% of the time	1 (1.8)	0 (0)	0 (0)
Total N	57	36	39

Table 9 - Participant abilities in the kitchen

Participant service need and provision	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Reach items in kitchen without bending			
Yes	23 (42)	15 (44)	15 (38)
No	22 (58)	19 (56)	24 (62)
Total N	55	34	39
Reach items in kitchen without climbing or standing on something			
Yes	52 (88)	33 (92)	33 (85)
No	7 (12)	3 (8)	6 (15)
Total N	59	36	39
Eat meals in the kitchen			
Yes	20 (36)	12 (34)	12 (31)
No	36 (64)	23 (66)	27 (69)
Total N	56	35	39
Carry meals with both hands			
Yes	58 (98)	36 (97)	39 (100)
No	1 (2)	1 (3)	0 (0)
Total N	59	37	39
Push meals on a trolley			
Yes	0 (0)	0 (0)	0 (0)
No	57 (100)	36 (100)	39 (100)
Total N	57	36	39

Table 10 - Participant difficulty with activities of daily living

Proportion of participants who have difficulty with the following activities of daily living	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
Walking without help	4 (7.1)	5 (14)	3 (8.1)
Getting outside the house without help	1 (1.8)	1 (2.9)	1 (2.6)
Crossing the road without help	1 (1.7)	1 (2.7)	1 (2.6)
Traveling on a bus or train without help	1 (1.8)	0 (0)	3 (7.7)
Getting in and out of bed or chairs without help	1 (1.7)	1 (2.7)	1 (2.6)
Dressing or undressing without help	1 (1.7)	0 (0)	1 (2.6)
Kneeling or bending without help	9 (15)	6 (16)	10 (26)
Going up or down stairs without help	6 (10)	4 (11)	3 (7.7)
Having a bath or all over wash without help	1 (1.7)	0 (0)	2 (5.1)
Holding or gripping without help	1 (1.7)	1 (2.7)	2 (5.1)
Getting to and using the toilet without help	0 (0)	0 (0)	1 (2.6)
Eating or drinking without help	0 (0)	0 (0)	1 (2.6)
Seeing newspaper print even with glasses	7 (12)	5 (14)	0 (0)
Recognising people across the road even with glasses	5 (8.5)	4 (11)	1 (2.6)
Hearing a conversation even with a hearing aid	14 (24)	7 (19)	10 (26)
Speaking	2 (3.4)	0 (0)	1 (2.7)
Preparing or cooking a hot meal without help	3 (5.3)	1 (2.7)	3 (7.7)
Doing housework without help	14 (24)	10 (27)	12 (31)
Visiting family or friends without help	1 (1.7)	2 (5.4)	3 (7.7)
Doing any of my hobbies or spare time activities	4 (6.9)	4 (11)	4 (10)
People who had no difficulties	26 (44)	20 (54)	18 (46)
Total N	59	37	39

Table 11 - Duke Social Support Index items

Duke Social Support Index “social interaction” items	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
How many people in your local area do you feel you can depend on or feel very close to?			
None (score 1)	4 (6.8)	3 (8.3)	3 (2.6)
1-2 people (score 2)	23 (39)	12 (33)	12 (31)
More than 2 people (score 3)	32 (54)	21 (58)	26 (67)
Total N	59	36	39
How many times during the past week did you spend time with someone who does not live with you: you went to see them or they came to visit you or you went out together?			
None (score 1)	5 (8.5)	3 (8.6)	8 (21)
One (score 2)	6 (10)	5 (14)	2 (5)
Two (score 2)	11 (19)	6 (17)	5 (13)
Three (score 3)	13 (22)	9 (26)	12 (31)
Four (score 3)	15 (25)	6 (17)	3 (7.7)
Five (score 3)	4 (6.8)	1 (2.9)	1 (2.6)
Six (score 3)	2 (3.4)	2 (5.7)	4 (10)
Seven or more (score 3)	3 (5.1)	3 (8.6)	4 (10)
Total N	59	35	39
How many times did you talk to someone on the telephone in the past week?			
None (score 1)	2 (3.4)	1 (2.8)	2 (5.1)
One (score 1)	3 (5.1)	2 (5.6)	4 (10)
Two (score 2)	5 (8.5)	6 (17)	6 (15)
Three (score 2)	8 (14)	9 (25)	4 (10)
Four (score 2)	10 (17)	2 (5.7)	4 (10)
Five (score 2)	5 (8.5)	6 (17)	2 (5.1)
Six (score 3)	4 (6.8)	7 (19)	6 (15)
Seven or more (score 3)	22 (37)	3 (8.3)	11 (28)
Total N	59	36	39
About how often did you go to meetings of clubs, religious meetings, or other groups that you belong to in the past week?			
None (score 1)	9 (15)	4 (11)	5 (13)
One (score 1)	10 (17)	7 (19)	14 (36)
Two (score 2)	17 (29)	10 (28)	9 (23)
Three (score 2)	10 (17)	7 (19)	7 (18)
Four (score 2)	10 (17)	4 (11)	1 (2.6)
Five (score 2)	0 (0)	3 (8.3)	1 (2.6)
Six (score 3)	2 (3.4)	1 (2.8)	0 (0)
Total N	1 (1.7)	0 (0)	2 (5.1)

Table 12 - Participant symptoms which prevented eating

Proportion of participants who had the following symptoms during the past 2 weeks	Baseline N (%)	F/up 1 N (%)	Final F/up N (%)
No problems eating	52 (87)	30 (83)	32 (84)
No appetite, just did not feel like eating	4 (6.7)	0 (0)	0 (0)
Nausea	1 (1.7)	0 (0)	0 (0)
Constipation	1 (1.7)	2 (5.6)	1 (2.7)
Mouth sores	2 (3.3)	1 (2.8)	0 (0)
Things taste funny or have no taste	1 (1.7)	2 (5.6)	1 (2.6)
Problems swallowing	2 (3.3)	2 (5.6)	0 (0)
Pain	2 (3.3)	1 (2.8)	5 (13)
Vomiting	1 (1.7)	1 (2.8)	0 (0)
Diarrhoea	2 (3.3)	0 (0)	2 (5.3)
Dry mouth	0 (0)	0 (0)	1 (2.6)
Smells bother me	0 (0)	0 (0)	0 (0)
Feel full quickly	1 (1.7)	0 (0)	0 (0)
Other	3 (5)	2 (5.6)	1 (2.6)
Total N	60	36	38

Table 13 - Participant accidents and falls

Proportion of participants who reported a fall and/or accident in the past 12 months	Baseline N (%)	Final F/up N (%)
NO INJURIES		
No falls or injuries reported	40 (68)	26 (67)
Had a slip or trip, but reported no injury	5 (8.5)	5 (13)
Had a fall to the ground, but reported no injury	1 (1.7)	2 (5.1)
Had a trip and a fall, but no injury reported	3 (5.1)	0 (0)
REPORTED AN INJURY		
Injury reported after having a trip or stumble	1 (1.7)	0 (0)
Injury reported after having a trip and fall	2 (3.4)	4 (10)
Reported having an injury, but without having a trip or fall	3 (5.1)	2 (5.1)
Total N	59	39

Table 14 - SF36 results for responders vs. non-responders

SF36® Component	Responded at six months N = 25 Mean (95% CI)	Did not respond at six months N = 37 Mean (95% CI)
Physical Function	69 (62 , 77)	65 (54, 75)
Role Physical	55 (40, 70)	48 (30, 66)
Bodily Pain	61 (54, 69)	57 (46, 68)
General Health	63 (58, 69)	62 (53, 71)
Vitality	62 (57, 67)	57 (50 , 64)
Social Function	81 (74, 89)	82 (74, 89)
Role Emotional	73 (58, 87)	68 (50, 86)
Mental Health	74 (69 , 80)	71 (65, 78)

Figure 1: Change in dietary knowledge among those who completed survey three

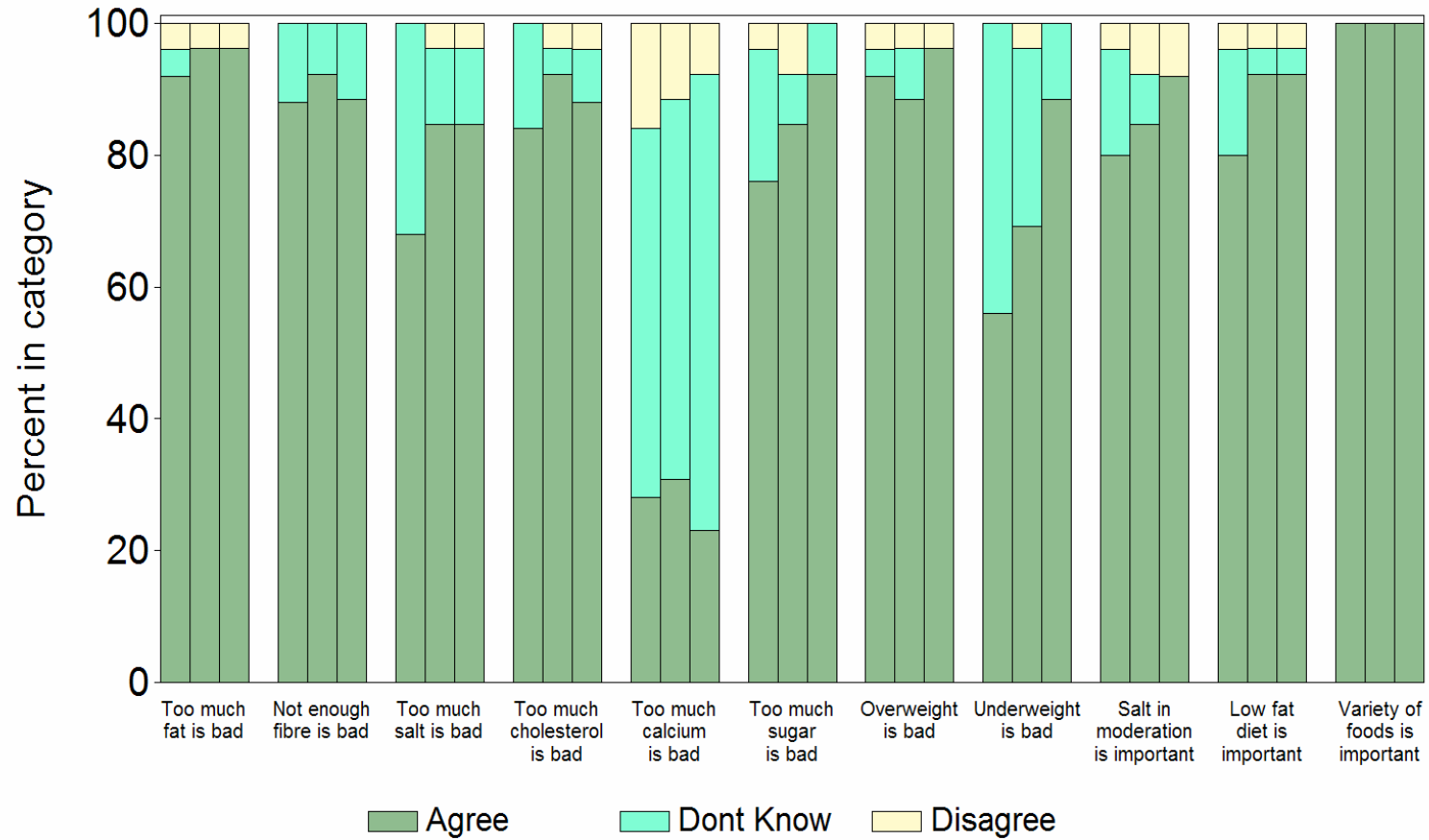


Figure 2: Change in diet over the three surveys among those who completed survey three

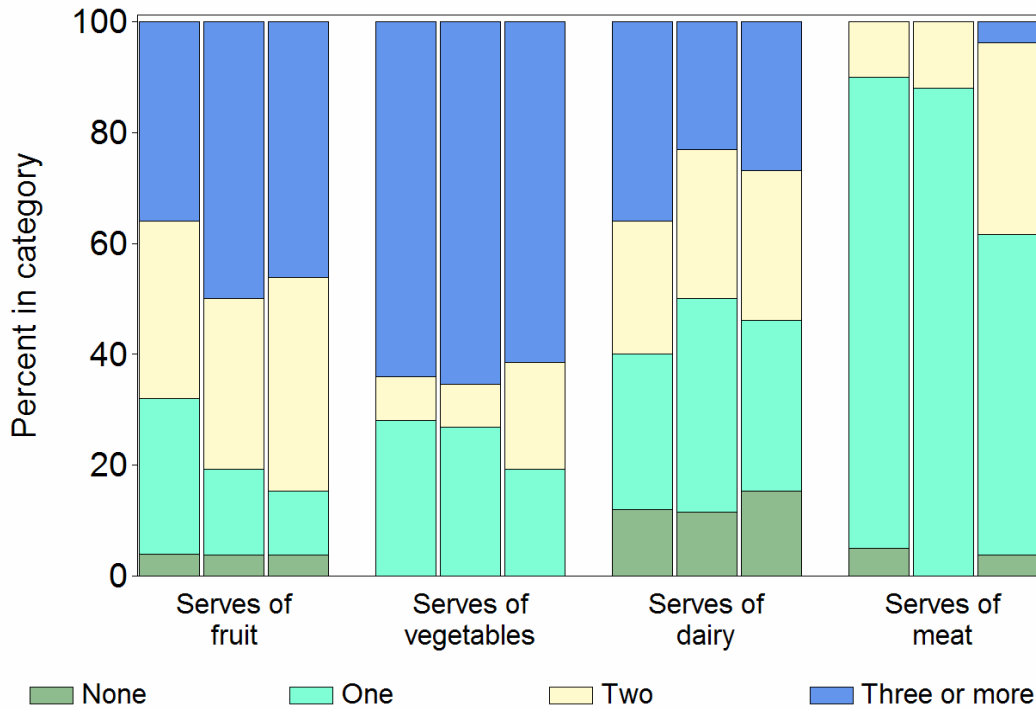


Figure 3: Absolute change in self reported alcohol consumption over the three survey times for those completing survey three

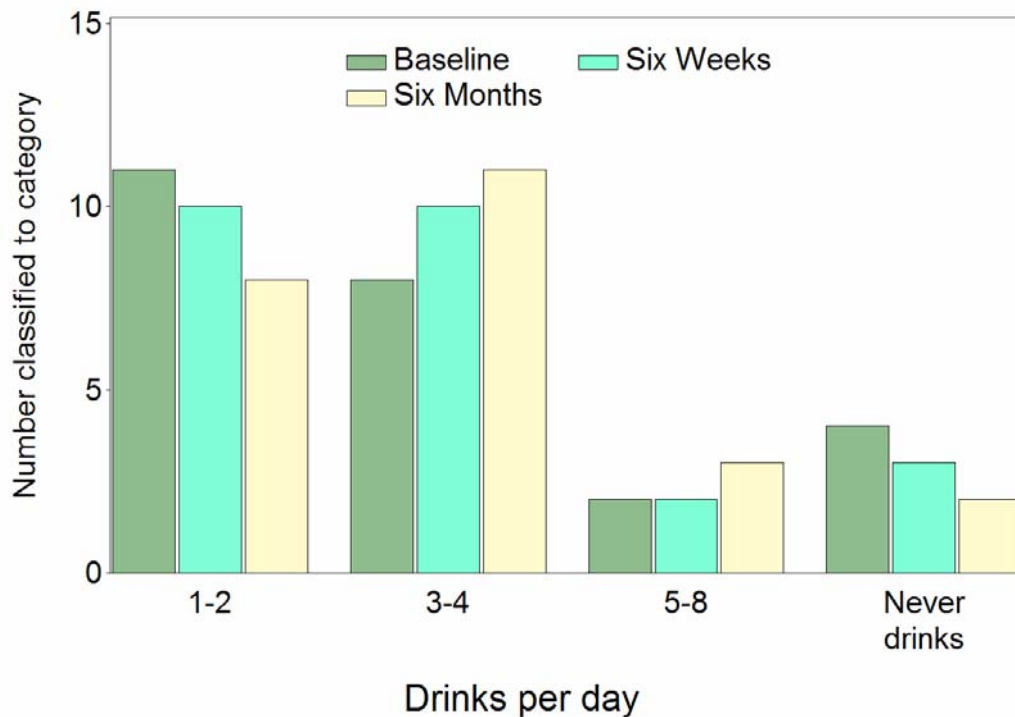


Figure 4: Absolute change in self reported eating behavior and problems with eating over the three surveys among those completing survey three

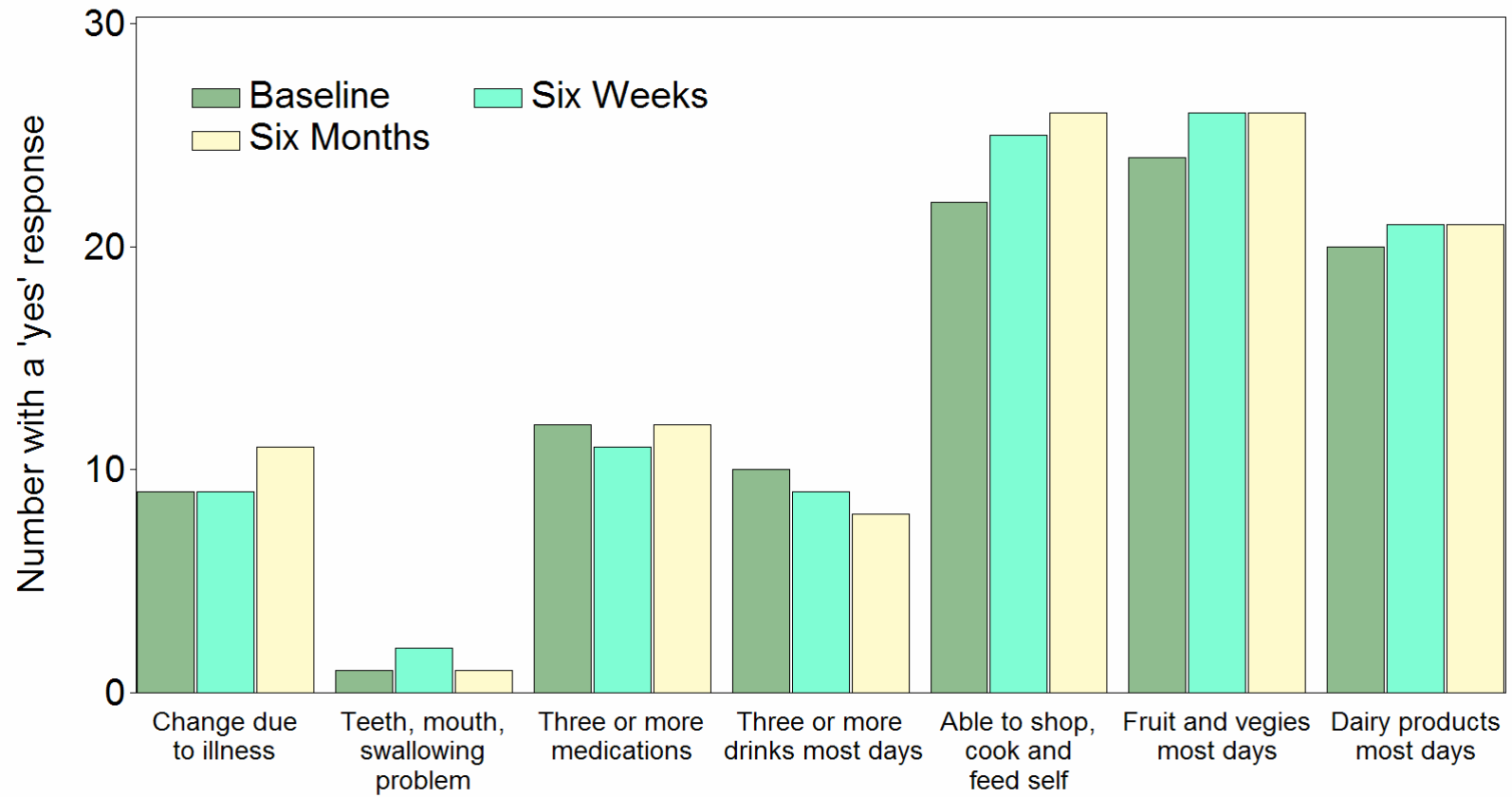


Figure 5: Change in kitchen competencies over the three surveys for those completing survey three

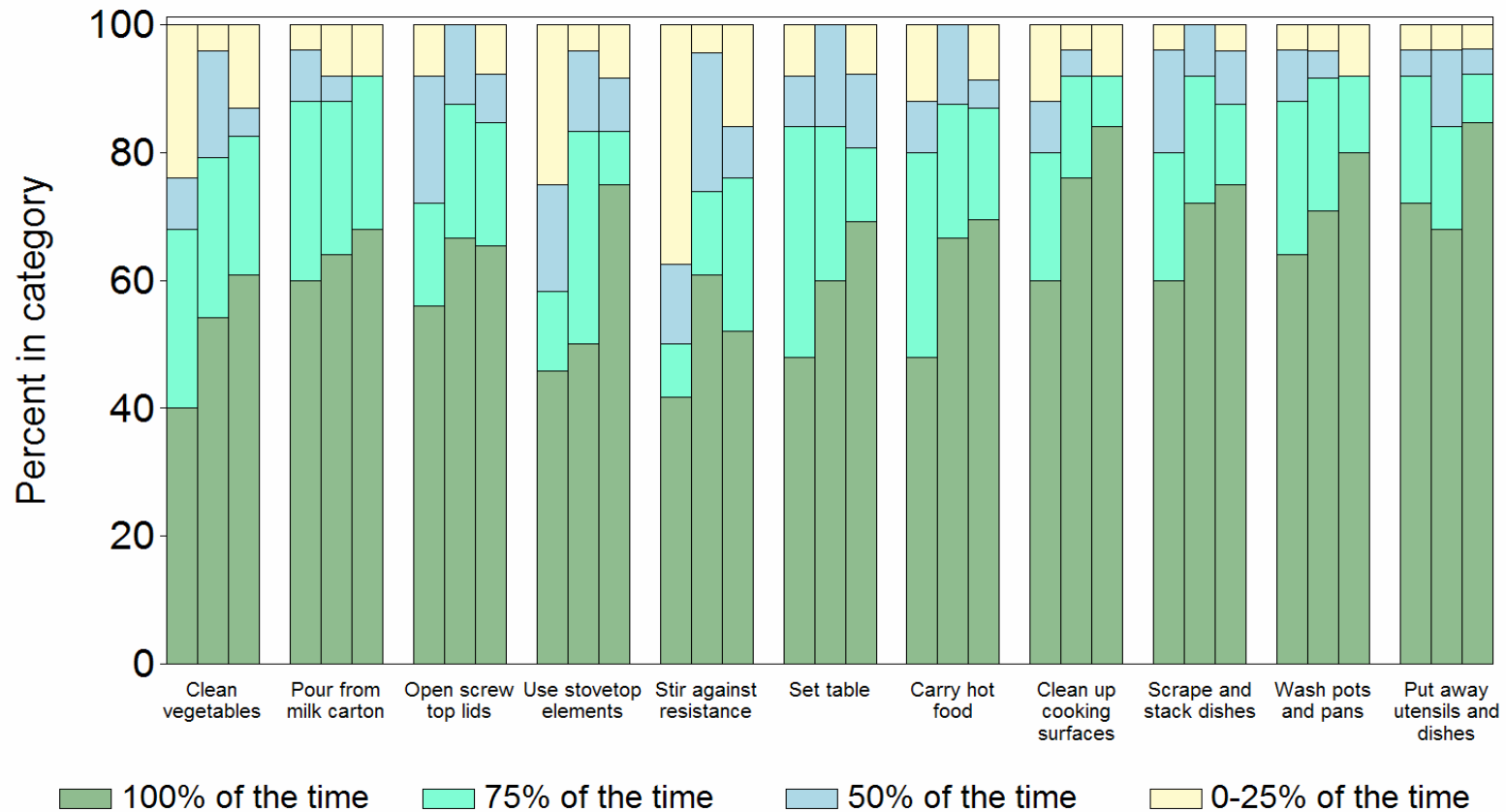


Figure 6: Age and gender standardised SF36® profiles for participants at three time-points

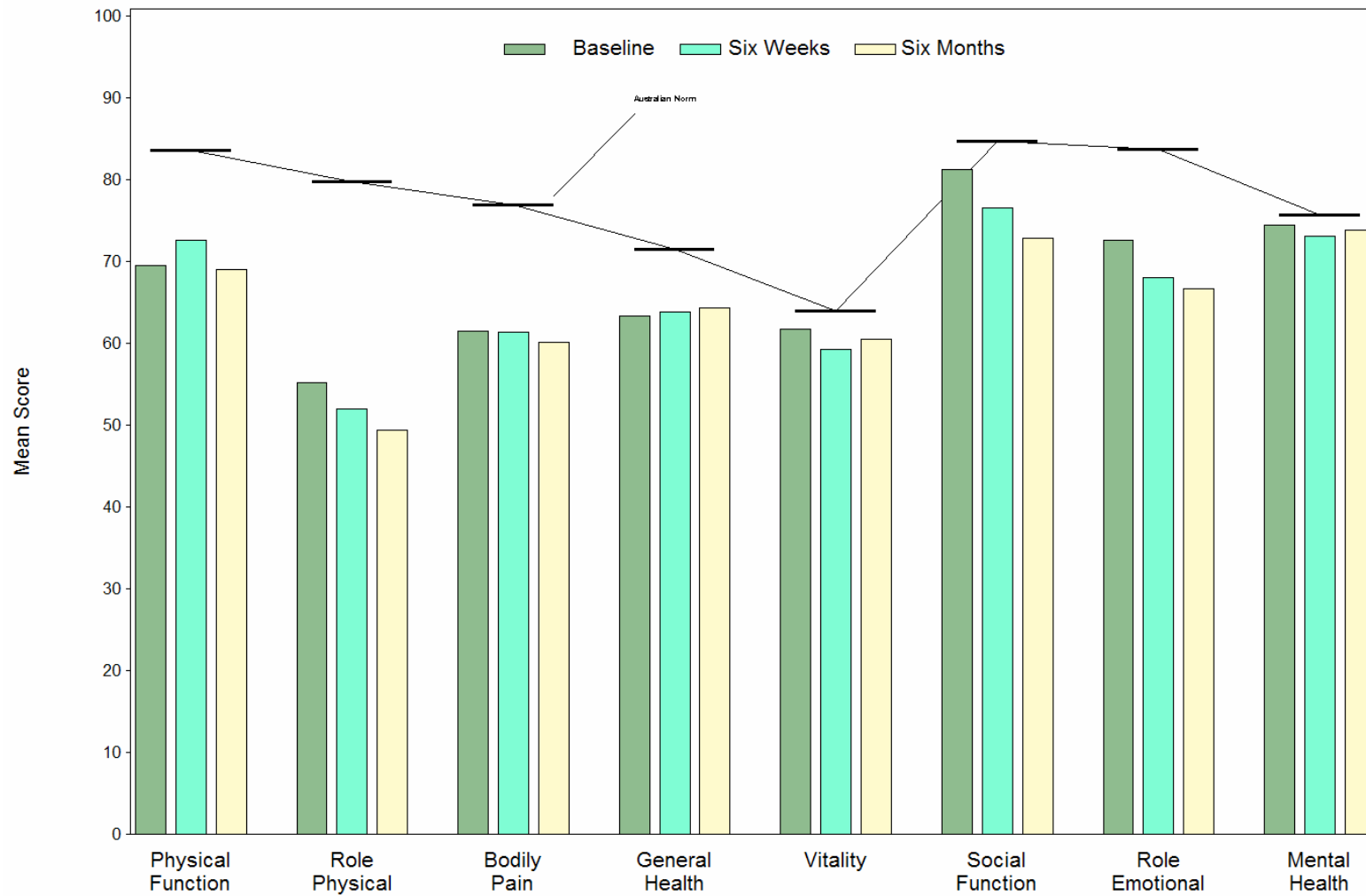


Figure 7

Mental Health

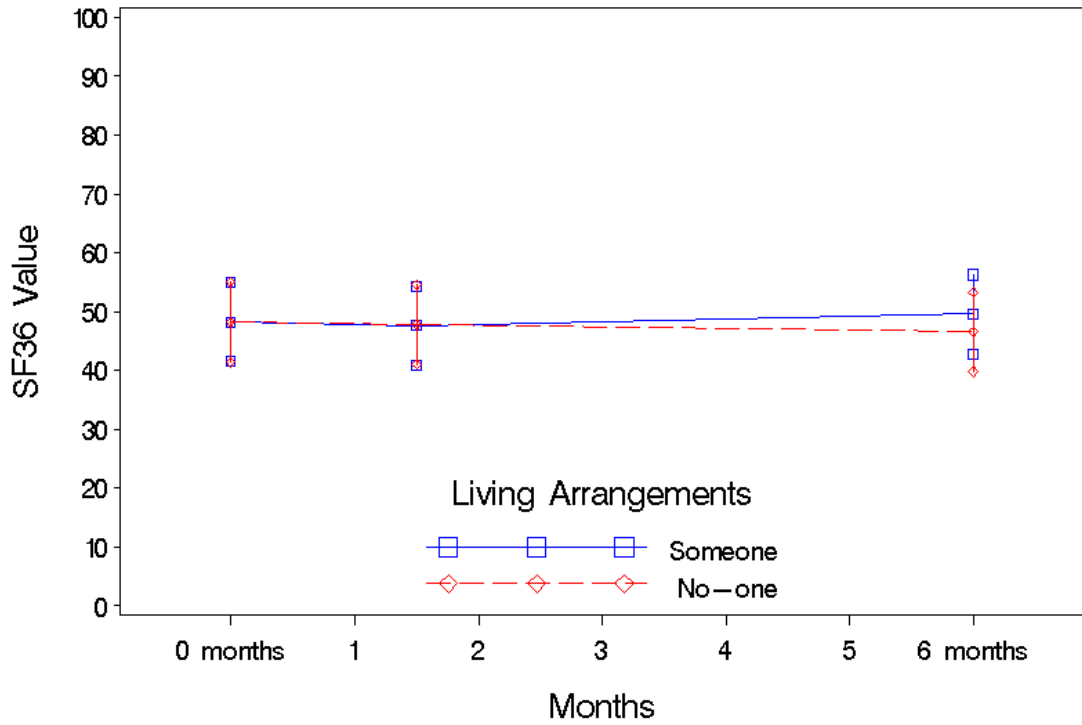


Figure 8

Mental Health

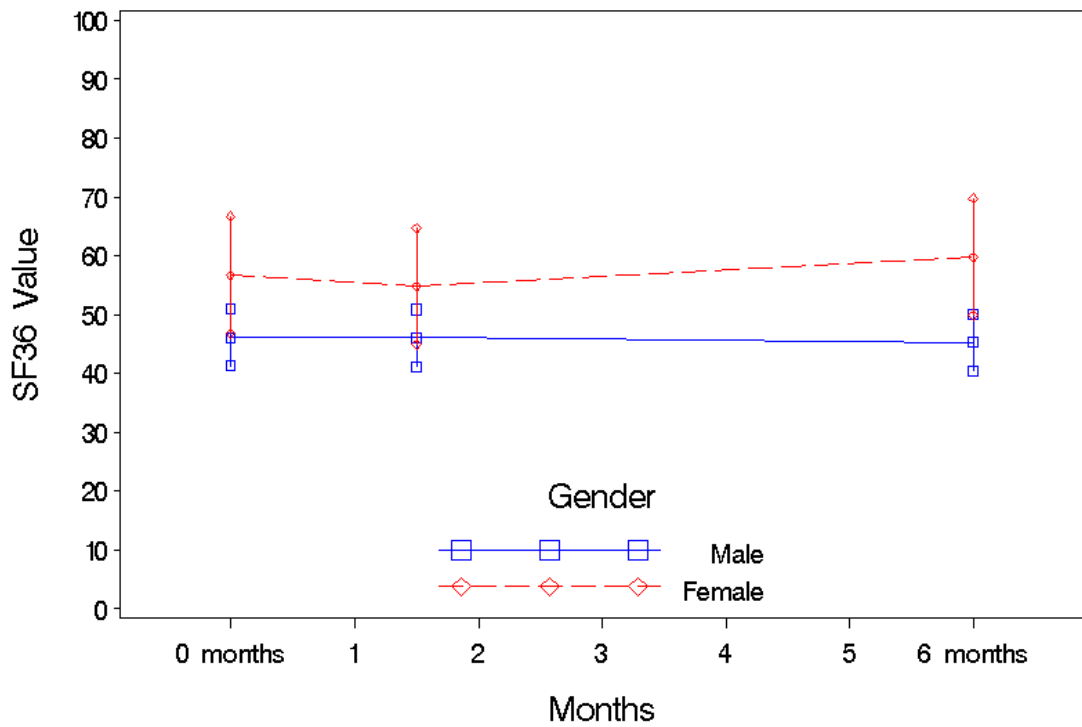


Figure 9

Physical Function

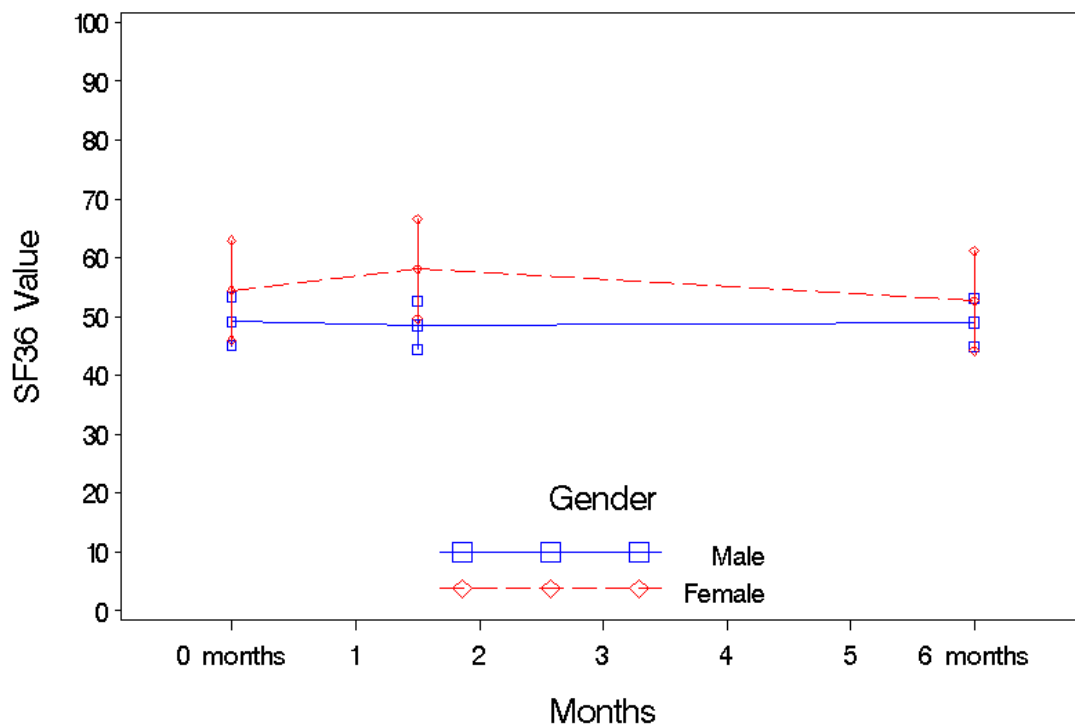


Figure 10

Physical Function

