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'While we can, we will': exploring food choice and dietary behaviour amongst independent older Australians

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Host, Alison; McMahon, Anne T.; Walton, Karen L.; and Charlton, Karen E., "While we can, we will': exploring food choice and dietary behaviour amongst independent older Australians" (2016). *Faculty of Science, Medicine and Health - Papers: part A*. 3829.
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Abstract

Aim Burgeoning proportions of populations aged over 65 years impose an increased financial burden upon governments for the provision of associated health and aged-care services. Strategies are therefore required to mitigate service demand through the preservation of good health and independence into old age. Nutrition has been acknowledged as a key factor for realisation of this goal. The objective of the present study was to investigate factors responsible for shaping food shopping, cooking and eating behaviours amongst healthy, independently living Australians aged 60 years and over. **Methods** Eighteen (5 male, 13 female) independently living residents sourced from three low-care Illawarra Retirement Trust (IRT) lifestyle residential facilities volunteered to take part in the present study. All participants were aged 60 years or more and in relatively good health. Semi-structured focus groups were implemented to explore factors influencing the selection, acquisition and preparation of food. Each session was digitally recorded, transcribed verbatim and subsequently examined using content and thematic analysis. **Results** Ten sub-themes were identified and grouped into three broader themes: adaptation, psychosocial parameters and food landscape. Findings reflect an active self-determination to retain independence, with a focus on the maintenance of favourable nutritional status. A sense of resourcefulness was evident through the development of strategies to overcome potential barriers to healthy eating. **Conclusions** Factors that influence the food choices of community-living older Australians are complex and multifactorial, and underpinned by a strong desire for independence and control over personal health outcomes. Studies involving larger, more demographically diverse participant groups are required to elicit socially acceptable strategies that will empower older Australians to sustain their health and independence for the longer term.

Disciplines

Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

Host, A., McMahon, A., Walton, K. & Charlton, K. (2016). 'While we can, we will': exploring food choice and dietary behaviour amongst independent older Australians. *Nutrition and Dietetics*, 73 (5), 463-473.

"While we can, we will": Exploring food-choice and dietary behaviour amongst independent older Australians

ABSTRACT

Aim: Burgeoning proportions of populations aged over 65 years impose an increased financial burden upon governments for the provision of associated health and aged-care services.

Strategies are therefore required to mitigate service demand, through the preservation of good health and independence into old age. Nutrition has been acknowledged as a key factor for realisation of this goal. The objective of this study was to investigate factors responsible for shaping food shopping, cooking and eating behaviours amongst healthy, independently-living Australians aged 60 years and over.

Methods: Eighteen (five male, thirteen female) independently-living residents sourced from Illawarra lifestyle residential facilities volunteered to take part in this study. All participants were aged 60 years or more and in relatively good health. Semi-structured focus groups were implemented to explore factors influencing the selection, acquisition and preparation of food. Each session was digitally recorded, transcribed verbatim and subsequently examined using content and thematic analysis.

Results: Ten sub-themes were identified and grouped into three broader themes: adaptation, psychosocial parameters, and food landscape. Findings reflect an active self-determination to retain independence, with a focus upon maintenance of favourable nutritional status. A sense of resourcefulness was evident through the development of strategies to overcome potential barriers to healthy eating.

Conclusions: Factors that influence the food choices of community-living older Australians are complex and multifactorial, and underpinned by a strong desire for independence and control over personal health outcomes. Studies involving larger, more demographically diverse participant groups are required to elicit socially-acceptable strategies that will empower older Australians to sustain their health and independence for the longer term.

Key Words: older, old age, independent, food choice, influences, habits

INTRODUCTION

Population aging is a global concern,¹⁻⁸ to which Australia is not exempt.^{9,10} In a little over 30 years, the proportion of Australians aged 65 years and over has risen from 8%¹⁰ to 14%,⁹ with 2% now aged more than 85 years.⁹ Current predictions indicate that these figures will continue to grow to 22% and 5% respectively by the year 2061,⁹ presenting a considerable challenge to health and aged-care support services in terms of their propensity to meet demand.²⁻⁶ A concurrent reduction in the ratio of Australian taxpayers to persons aged over 65 years has further escalated political apprehension.¹¹ Governments are now seeking strategies to keep older people living independently for as long as possible, so as to delay the need for reliance upon public healthcare services and residential aged-care support.¹⁰

Good nutrition during the senior years is important for prevention of disease and disability,^{2,5,6,12-15} as well as preservation of independence and quality of life.^{6,12,15} However, the aging process itself results in physiological, pathological, psychosocial and environmental changes which have the potential to adversely impact food choice and dietary intake.^{1-3,12,14} Such changes include a decline in chemosensory perception,^{3,13,15} poor dentition,^{3,13,14} loss of appetite,^{2,14} onset of chronic illness,^{2,3,7,13,15} loneliness,^{2,3,7,13,15} and reduced disposable income.^{2,3,7,13-15}

A primary challenge for healthcare professionals is to devise and deliver programmes that will support sound nutrition and better health outcomes into, and throughout, old age. This will require consideration of current dietary intakes and, further, identification of modifiable factors which influence food choice within this age group.^{2,7,14-16} At present, such information is limited, particularly with respect to the Australian context. Hence, the aim of this study was to qualitatively investigate food-shopping, cooking and eating habits, as well as attitudes towards the consumption of different food groups, amongst healthy, independently-living Australians aged 60 years and older.

METHODS

The present study formed the qualitative component of a broader intervention designed to ascertain whether pork as the primary dietary protein source would improve cognitive function, muscle strength and body composition among independently-living older Australians. Methodology and selection criteria for the parent trial has been documented elsewhere¹⁷.

In April 2014, residents from 3 of the low-care Illawarra Retirement Trust (IRT) lifestyle residential facilities which had agreed to partake in the larger intervention were invited to participate in focus groups to discuss food and shopping habits. Participation in the focus groups was not dependent upon willingness to engage in the broader trial.

Residents were deemed eligible for inclusion in this study provided that they were aged 60 years or more, able to communicate in English and attend at the date and time scheduled for their facility. No further exclusion criteria were applied.

The focus groups were conducted during July 2014 within the community hall of each residential facility, for the convenience of the participants as well as to facilitate attendance by

those unable to travel. Semi-structured focus groups were employed as the preferred medium for data collection, both to maximise participant reach and also to capitalise upon the strength of group dynamics for revealing key thoughts and opinions.¹⁸ An initial introduction was provided to explain the purpose and process for the session, and informed, signed consent obtained from each participant.

An experienced moderator (AM) facilitated the focus groups, guided by a set of twelve questions which had been developed in accordance with elements of Bandura's Social Cognitive Theory¹⁸ (see Figure 1). Due to the intervention focus of the parent trial¹⁷, some questions were incorporated to facilitate investigation into the participants' habits and attitudes towards the consumption of meat. However, the participants in each group were also questioned about their habits and attitudes towards each of the major food groups, as well as cooking and eating generally.

Seating was arranged in a circular format to promote open communication and all participants encouraged to provide input. Participant comments were clarified to ensure correct interpretation, however, in accordance with recommendations by Kreuger,¹⁹ the moderator (AM) refrained from providing any personal opinions during discourse.

Discussions were audio-recorded for transcription and analysis purposes, and field notes taken by a second (primary) researcher (AH) to add context to the data obtained. Each digital recording was transcribed verbatim and corrected for accuracy by the primary researcher (AH). Cleaned transcripts were then subjected to content and thematic analysis to determine prominent themes and subthemes, and analysis using QSR Nvivo 10.0 qualitative analysis software (QSR International Pty. Ltd., Doncaster, Victoria, Australia) performed to ensure inclusion of all subthemes. The process of content analysis is briefly described.

Each of the transcripts was subjected to an initial reading, and then re-read several times to identify similarities and differences. From these, initial codes were created and line-by-line coding performed for each of the transcripts. Overriding themes and sub-themes were subsequently identified to represent the consensual ideas expressed by participants, and these then compared once more to the original recordings and transcripts so as to ensure accurate representation of the participants' views and intended thoughts.

The overall process was corroborated by a second researcher (AM) to improve rigour, as recommended by Saldana²⁰ and others.^{21,22} Exemplary quotes were identified to demonstrate thematic findings and reflect both consensual and contrasting sentiments expressed by participants (see Table 1).

Refreshments were offered, however, no other form of payment was provided. Approval for this process was granted by the University of Wollongong/Illawarra Shoalhaven Local Health District Human Research Ethics Committee (approval number HE12/446).

RESULTS

Three focus groups (FG) were conducted, each comprising 6 participants (total 5 male and 13 female) aged ≥ 60 years. Although not directly assessed for the purpose of this study, participants from the broader intervention were of mean age 78.2 ± 6.1 years, body mass index (BMI) $28.8 \pm 5.4 \text{ kgm}^{-2}$ and Mini Nutritional Assessment (MNA) Score 26.8 ± 2.4 . It has been suggested in the recent literature that it is not recommended for persons aged 65 years or older to have a BMI < 23.0 ²³. Nutritional status when measured using an MNA may be classified as well nourished (MNA > 23.5), at risk of malnutrition (MNA score 17.5 – 23.5) or malnourished (MNA score < 17.0)²⁴.

Focus group participants (P) were predominantly of Anglo-Saxon heritage (six had emigrated from European countries, while one female was Indian-born) and included a mix of singles (n=10), couples (n=3, ie. 6 individuals) and those living with a partner not participating in this study (n=2). Participants within each group were known to one another socially, and all appeared to be in good physical health.

Each discussion began reservedly, however, participants became more at ease as the process evolved, with all keenly providing input and freely exchanging points of view. Discussions lasted for approximately one hour, after which time no new information could be drawn.

Upon analysis of the data, ten key subthemes were identified and grouped into three overriding themes, as depicted in Figure 2. Exemplar quotes are shown in Table 1.

Subsequent to the third focus group, the researchers concluded that the information being gathered had become sufficiently similar and predictable that implementation of further focus groups was unlikely to generate new information or ideas. Calder²⁵ proposes that this is an appropriate point to cease data collection. In light of this, as well as limitations of time and resources, no further groups were actuated.

Each of the identified themes is now discussed.

Theme 1: Adaptation

The theme of adaptation encompasses the ways in which participants have modified their food choices and/or dietary behaviours in response to either variation in their life circumstances or physiological change.

Lifetime events were commonly cited as having influenced present eating habits. For some participants, family practices and experiences from childhood strongly influenced shopping

and meal preparation behaviours, as well as those food items eaten or avoided. For two Australian women (FG2, P7; FG2, P12), however, marriage into a different culture manifested in the adoption of a range of new foods and food customs, which they have since passed on to their (now adult) children. In contrast, two of the men reflected an air of indifference about the foods eaten, stating “I just eat what’s in front of me” (FG1, P1) and (with reference to his wife) “she’s the cook” (FG1, P3).

Children leaving home instigated change to the types of foods eaten, as well as a general reduction in the quantity of food prepared. Some participants felt that their food choices had become much healthier: for instance, desserts - once commonplace - were now consumed less frequently, while savoury meals were governed more by nutritional value than the taste preferences of other household members. Smaller portions were also reported, and attributed to a declining appetite. For some women, however, old habits were hard to break: one (FG2, P11) has struggled to purchase amounts of food appropriate for just one person, while another (FG2, P13) feels the need to continue a nurturing role by regularly cooking meals for her daughter’s family.

The death of a spouse also played a significant role in shaping the types of foods eaten and cooking routines. Some participants reminisced fondly about former mealtime rituals, such as enjoying regular cooked breakfasts, greater dietary variety and activities such as catching fresh fish for dinner. In contrast, one of the male participants (FG1, P5) chose to avoid certain foods that triggered memories of times when his wife had been alive.

Living alone or as couple in retirement mostly impacted shopping and cooking strategies, rather than the types of food consumed. With regards to shopping, opinions were divided: participants either had an established routine (often weekly) or otherwise preferred to purchase smaller amounts more frequently, perceiving this as a way to avoid waste or else the

need for carrying heavy groceries. Meat purchases were often made in bulk and either split into smaller portions for freezing, or otherwise cooked in sufficient quantities for at least two meals, with surplus portions frozen. Avoidance of waste, negating the need to cook for every meal, and facilitating greater meal variety were cited as motives. Only one participant (FG2, P10) preferred to purchase meat in smaller amounts to use fresh, stating that she was predominantly vegetarian and her husband ate only small amounts of meat.

Management of both physiological changes due to aging and also underlying medical illnesses were discussed. Almost all participants reported eating smaller meal portions due to a reduction in appetite, while one woman (FG3, P18) mentioned lack of dentition as slowing her eating. Importantly, neither of these issues appeared to detract from the overall food variety of the diet.

Illness and medical conditions incurred some changes to both the nature of foods eaten and also the timing of meals. One participant (FG1, P3) reported having to “cut the fat” following recent heart bypass surgery; another (FG1, P4) avoided bread due to a perceived yeast intolerance; and one (FG3, P18) restricted alcohol due to interaction with medications. A further woman (FG3, P13) claimed to have been advised to consume full-cream milk to benefit her osteoporosis. Reflux was a problem commonly experienced amongst all groups.

Participants reported the adoption of strategies such as the avoidance of certain foods (cheese, fried foods and spicy foods), and also consumption of the main meal at lunchtime (followed by a light meal at night) to alleviate symptoms.

Theme 2: Psychosocial Parameters

Groups universally reflected a strong determination to maintain independence. Sixteen of the participants (89%) retained a valid driver’s licence, while all remained independent for

shopping, and most continued to prepare their own meals (with only occasional inclusion of convenience-type foods). One woman (FG3, P13) succinctly reflected, “while we can, we will”. A few participants had recently enlisted part-time meal delivery services, or would consider this as an option in the future, with such meals generally viewed as being of good quality and providing a convenient, nutritionally-adequate alternative to preparing meals.

Participants also remain independent for other daily living activities. As commented by one woman (FG2, P12), “I would much rather do it than have to rely on someone to ... do things for me all the time”. However, another (FG2, P10) acknowledged “I think we’re very fortunate that we’re fit enough to ... look after ourselves.”

A strong sense of community was evident across all three focus groups. Social gatherings involving food feature regularly at each facility (a biannual community dinner, a biannual barbecue, and a weekly “Happy Hour” respectively), and these were greatly enjoyed by all participants. Participants also offered assistance to one another in times of need: one male participant (FG1, P1) provided weekly transport for shopping to two fellow residents, while others offered assistance when someone was unwell, or brought in the neighbour’s washing when it rained. At one site, however, participants pointed out that they would not habitually offer help for fear that this may induce dependency by some.

The importance of nutrition for sustaining health was widely acknowledged, with participants both interested in and accepting of self-responsibility for eating well and exercising regularly. Many were concerned to manage their weight, monitoring this through regular self-weighing. Almost all participants reported eating three meals daily and enjoying a wide variety of foods. Only two (FG1, P5; FG3, P18) followed specific diets (the 2/5 fasting diet and the “Eat Right for Your Type” blood-group diet respectively). Participants also discussed self-imposed dietary limitations due to concerns about weight, health issues or cultural beliefs. A number of

1 participants reported taking steps to minimise their fat intake, including trimming fat from
2 meat, avoiding processed foods and choosing low-fat cooking methods, while one couple (FG2,
3 P8 and P12) were careful to select meals which were low in cholesterol and salt when ordering
4 from a meal-delivery service. While most avoided excess fat in their diet, and some were keen
5 to minimise their intake of sugar, almost all reflected a view towards moderation, permitting
6 the inclusion of occasional treats such as pork crackling, chocolate and alcohol. Overuse of
7 preservatives in the food supply was a concern for some.

8 None of the participants had significant food preferences, nor aversions. Most reported
9 enjoying a wide range of foods from all of the food groups, commenting on specific cultural
10 foods or foods from childhood that are still enjoyed. Offal meats were avoided by some, while
11 two participants (FG1, P5; FG2, P11) expressed a reluctance to eat either fruit or vegetables;
12 however, both of these individuals recognised the importance of fruit and vegetables for good
13 health and had recently invested in a “Magic Bullet” food blender as a means to increasing
14 their intake.

15 The majority of participants enjoyed a wide range of meats, including pork. Expense for prime
16 cuts was discussed, however, participants generally indicated their intention to purchase these
17 either on occasion or when discounted in price to ensure dietary variety. One woman (FG2,
18 P10) avoided beef and pork due to cultural beliefs, while one British participant (FG3, P16)
19 mentioned Bovine Spongiform Encephalopathy (BSE) as having been of concern when in
20 England, but not in Australia. A few participants commented that they would eat only free-
21 range chickens and eggs (only one (FG3, P18) voiced a preference for free-range pork). Others
22 were concerned about the use of steroids, hormones and antibiotics, yet this was not
23 sufficient to prevent them from consuming chicken products.

Pork was generally considered as a lean meat and the flesh widely consumed, with pork chops, roast pork and pork fillets particularly favoured. However, many participants recognised pork crackling as being high in fat and so enjoyed this in limited amounts. Only two women were opposed to eating pork, based upon cultural beliefs (FG2, P10) and concerns about pigs sharing the same DNA as humans as well as having encountered a pet pig (FG3, P18). One of these women (FG3, P18) also expressed concerns about the manner in which all animals were reared and the possibility of inhumane slaughter. Most participants, however, regarded eating pork as being indifferent to consuming other varieties of meat.

Daily exercise and physical activity were important for many participants. Walking was popular, while some also enjoyed regular swimming, bowling and line-dancing activities. A few participants actively sought to build physical activity into their daily routine, by walking to the local shops and opting for a second-floor unit so as to necessitate stair-climbing for access to their premises.

Most participants viewed cooking as a pleasurable task, and continue to employ a wide range of cooking techniques, including roasting, frying, microwaving, pressure-cooking, slow-cooking and baking. Only two participants expressed a lack of enjoyment from cooking, due to previous negative food and cooking experiences (FG2, P12), and the time-intensity of the task, which detracted from other pleasurable activities (FG3, P18).

Frustration with a perceived inconsistency in public nutrition messages was expressed, and a degree of confusion and misinformation about certain nutrition issues apparent. Nonetheless, several of the participants articulated a keen interest in, and desire to learn more about, healthy eating - in particular, portion control.

Theme 3: Food Landscape

1 This theme describes the extent to which aspects of food and the food retail environment
2 meet the needs and expectations of older community-dwelling Australians. Aspects of quality,
3 price, country of origin, and retail-store attributes (including accessibility and service) were
4 discussed.

5 Quality was an important consideration for all groups, especially with regard to fresh produce.

6 Many participants reported travelling to multiple locations (and, at times, considerable
7 distance) to obtain superior quality produce, and further expressed a preference for specialist
8 retailers (over supermarkets), despite higher associated costs. Some spoke of their distrust of
9 fresh fruit and vegetable produce sold in major supermarket chains, especially when pre-
10 packaged in sealed cellophane-wrapped cartons, with most preferring to self-select fresh
11 produce, even though this was a more expensive option. Participants used a combination of
12 supermarkets and smaller outlets for purchasing meat, but would often source fish from a
13 specialist seafood store. For general groceries, participants frequented a number of the larger
14 supermarkets.

15 The relative impact of price upon purchasing behaviour was mixed. While advertised specials
16 were acknowledged by participants from two of the groups, these did not govern purchasing
17 decisions - instead, when desired items were advertised at a discounted price, participants
18 from these groups would take advantage by purchasing multiple items and stockpiling them in
19 the pantry or freezer. Discount days for seniors were also utilised.

20 At one of the facilities, however, price was of greater importance, with participants indicating
21 more budget-conscious shopping behaviours. One woman (FG3, P18) reported visiting
22 multiple outlets to access the best deals, while half of this group regularly purchased meat that
23 had been reduced for quick sale - a strategy that facilitated the purchase of prime cuts which
24 they otherwise could not afford. Participants were wary of certain categories of food (such as

1 salads and fish) when discounted, due to concerns over food safety. Despite such differences,
2 all study participants consensually prioritised quality over price, indicating a preparedness to
3 pay a little extra in order to obtain items of an acceptable quality.

4 Changes in the quality of the food supply over time were also raised by one group, with
5 participants commenting that foods no longer tasted the same, contained too many additives
6 and were of inferior quality.

7 Participants in all groups unanimously expressed a preference for Australian food products,
8 especially fresh foods such as meat and fish, despite an often higher price. Greater confidence
9 in both quality and safety was cited.

10 Accessibility and service were the most important concerns relating to individual retail outlets.
11 Escalators, wide aisles and designated 'senior parking spots' were viewed favourably, while
12 one participant (FG1, P1) spoke of the convenience of being able to access two major
13 supermarkets in a single shopping complex. Good service was also considered important; for
14 example, some participants preferred to shop at a local butcher where they were able to
15 purchase smaller portions of meat, as opposed to bulk pre-packaged meat from supermarkets.

17 **DISCUSSION**

18 This study sought to identify major factors influencing food choice and dietary behaviour
19 amongst older community-living Australians. While elements identified largely corroborate
20 those from former studies^{2,7,13,15,24,26}, their impacts differed considerably. Whereas many
21 previous researchers have found a constraining influence over the range and amount of foods
22 consumed^{7,13,14,27}, participants in this study were motivated to maintain independence and

good health with age, demonstrating consumption of a varied and seemingly adequate diet,
 and further, considerable resourcefulness to overcome barriers encountered to healthy eating.
 Life experiences,^{3,7,13} physiological changes associated with the aging process^{2,13,24,2,26-28} and the
 onset of illness or medical conditions^{7,13,24,26} are important factors that influence food choice
 and dietary behaviours amongst older people. Loneliness or living alone^{2,7,13,16,,26,28}
 chemosensory changes,^{13,15,28} and poor dentition or chewing difficulty^{3-5,13,14} are widely
 reported. Similarly, our study identified life changes, decreased appetite and health issues as
 instrumental in shaping decisions surrounding food practices. However, in the present study,
 these factors did not appear to impact negatively upon participant dietary behaviour.
 Although some food choices and mealtime routines had changed with time, participants
 mostly continued to consume three daily meals and include of a wide range of foods and
 cooking techniques. All participants further indicated that they ate at least one hot-cooked
 meal most days (usually self-prepared), and included foods from all five food groups on a daily
 basis. These findings are perhaps reflective of the high level of interest shown in health and
 nutrition, and relative good health enjoyed, by participants from this study. It was interesting
 to note, however, that despite maintaining a strong desire for continued independence, a
 number of the participants were receptive to the idea of using home meal-delivery services in
 the future as a means for ensuring sustained adequate nutrition.

The intentional adoption of a range of strategies to safeguard nutritional status was
 prominent, including engaging in regular physical activity and varying meals (to promote
 appetite, stimulate interest in food and assist with weight maintenance), adjusting the types of
 foods eaten and the timing of meals to manage medical complaints, and cooking in bulk (so as
 to ensure variety, a constant supply of nutritious meals and minimise waste). Of particular
 interest was the novel adoption by two participants of “Magic Bullet” blenders as a means for

ensuring adequate fruit and vegetable intake. This is suggestive of the possibility that juicing may be a viable method for improving fruit and vegetable intakes, whilst also minimising food volume for reduced appetites, within this population group. Such resourcefulness, preparedness to adapt and determination to maintain independence, coupled with a strong interest and awareness in health, nutrition and physical activity, have previously been highlighted as potentially protective for health in old age.^{2,6,13,15,24,29}

Older people living alone have been recognised as more likely to lack the energy and motivation required to prepare and eat food^{13-15,26,28} and hence are also associated with poorer food choice and dietary intake.^{2,13-16,26-28} However, in our sample of healthy, independently-living older people, there was a keen motivation to eat well and accept individual responsibility for engagement in health-promoting behaviours, and further, to enhance current health and nutrition knowledge, regardless of personal living arrangement.

A strong sense of community was also apparent, through regular attendance at facility-led social events and an expressed willingness to “look after each other” (FG1, P2). A key finding from this study, therefore, is that residential facilities appear to offer increased opportunity for social contact and support, as well as stimulus for meal consumption, which may be lacking for those living in individual housing arrangements.

Quality and price were both important considerations for participants in this study, however, quality appeared to be of higher priority. Participants indicated a preparedness to pay slightly more to obtain acceptable standards in quality, which is contrary to views communicated in some other studies.^{2,6,7,13,15,29} This finding may be reflective of differences in socioeconomic status between study populations, however, income was not investigated as part of this study.

Participants from the present study also expressed a preference for Australian foods based upon greater perceived quality and safety. This finding is important within the Australian context.

Several of the subthemes appeared to be interrelated, with food-related decisions sometimes necessitating a personal trade-off between competing influences, or else the development of strategies to ensure that each need could be satisfied. For example, many participants enjoyed prime cuts of steak, but could not afford to purchase them at regular retail prices. Nonetheless, lean meat was viewed as important for health, hence, prime cuts would be purchased either when marked at sale price - with additional amounts purchased for freezing - or otherwise once it had been discounted for quick sale at the end of the day. Similarly, participants accepted higher prices and greater travelling distance to access specialist retailers (butchers, fish and seafood stores, and fruit and vegetable shops), as a trade-off for perceived superior quality, or alternately opted to pay more to select fruit and vegetables individually from supermarket shelves, rather than buying cheaper pre-packaged options.

Disparities between findings from this and other studies may be explained, at least in part, by characteristic differences between the particular populations investigated. Whereas most previous studies have focused upon elderly people exhibiting limited mobility or functional capacity and socialisation, and/or those experiencing financial difficulty, the present study involved individuals with seemingly variable levels of affluence, relatively active and social lifestyles, and who retained a high level of mobility and functional independence for all activities of daily living. Hence, our findings fill a gap within the existing body of literature, and further serve to highlight similarities and differences between such groups.

As with most qualitative research, this study included a small sample size which was further limited by under-representation of individuals from multicultural and lower SES groups as well

as those with mobility/functional limitations. There is also possible over-representation of those with intrinsic interest in health and nutrition, which may have resulted in bias as a consequence of voluntary participation. Further studies involving larger and more diverse groups will be required to unravel the complexity of food choice and dietary behaviour within this population, and thereby elicit socially-acceptable strategies to help empower older Australians to sustain health and independence for the longer term.

In summary, food choices and dietary behaviours amongst older Australians living independently are shaped by a complex interplay between a number of different, and sometimes competing, forces. Findings from this study provide additional insight into the nature of these factors, and highlight a strong desire amongst this population to assert their independence and actively influence outcomes for health. Results further suggest the importance of community and social interaction to achieve this aim.

FUNDING

This study formed a component of a larger food-based quasi-experimental trial which was funded by the Australian Pork Co-operative Research Centre (CRC). The Illawarra Retirement Trust (IRT) group, their staff and residents are thanked for participation in this research investigation.

CONFLICTS OF INTEREST

The authors of this paper have no conflicts of interest to declare.

AUTHORSHIP

AH: Field notes; recording, transcription and analysis of qualitative data; and drafting and editing of the manuscript, including figures and tables.

AM: Overall study design, moderation of focus groups, corroboration of data analysis by AH, and assistance with technical editing and proofreading of the manuscript

KW: Overall study design, preparation of the ethics application and assistance with technical editing and proofreading of the manuscript

KC: Overall study design; preparation of the ethics application, and assistance with technical editing and proofreading of the manuscript

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Figure 1: Semi-structured focus group guide, with probes.

Baseline Questioning for Focus Group with Study Participants

Introduction

Good Morning everyone! Firstly, we would like to welcome you all to our focus group meeting, and thank you for giving your time to attend this morning. My name is Anne McMahon and I am one of the researchers from the Faculty of Medicine, Science and Health at the University of Wollongong. This is my research assistant, Alison Host, who is in her final year of the Master of Nutrition and Dietetics programme at the university.

We would like to talk with you today about your experiences with shopping for food and preparing food, and also the types of food you typically eat on a weekly basis. All input is valued and there are no right or wrong answers we really just want to hear all of your thoughts, ideas, challenges about shopping and cooking and we are very interested in hearing a wide range of differing points of view. The only thing that we ask is that the right of individuals to be heard and the opinions of others be respected throughout so if you are not saying very much I might just ask you directly your thoughts in case you have not had the chance to say your piece.

Alison will be taping our discussion today and this is simply to help us to remember everything that has been said and to make sure we capture your thoughts accurately. Each person will remain completely anonymous, and you will not be identified in any way when we write up the transcripts from the meeting. So we want you to feel comfortable and relaxed and enjoy participating in this discussion. Are there any questions that you would like to ask before we begin?

Line of Questioning

1. To begin our discussion this morning, I would like to hear about your shopping habits. So who does most of the shopping and where might you do most of your shopping?
 - a. Probe about who takes responsibility for shopping in the household and if shopping is done on their own or someone takes them
 - b. Probe about use of supermarket (local or suburban shopping centre), and use specialty stores, such as a butcher or greengrocer?
 - c. Probe about shopping frequency
2. So thinking about types of foods that you buy what types of foods do you buy regularly? For instance, if I were to come with you on a standard shopping trip, which items might I see in your shopping trolley?
3. And what about cooking...who usually does most of the food preparation and cooks your meals in your households?
 - a. Probe about interest in cooking, frequency of use of takeaway or meals from cafes/clubs/restaurants and identify location and social aspects of eating opportunities taken outside of the home.

4. For this particular research project, we are particularly interested in the how often you might purchase and eat meat each week and what types you prefer.
 - a. Probe about use of varieties of meat especially pork, and factors that might influence choice when purchasing meat such as cost, flavour, texture, smell, ease of cooking or portion management issues
5. Just thinking about meat choices are there any particular favourites that you include regularly in your diet or ones that you avoid for particularly reasons?
 - a. Probe about the reasons why they might be a favourite such as ease of cooking, familiarity, cost, availability, convenience, personal preference, positive/negative associations, values such as Australian produce preference, habit, health concerns, body weight or taste/texture issues
 - b. Probe about ones not chosen regularly to clarify reasons such as ease of cooking, familiarity, cost, availability, convenience, personal preference, positive/negative associations, values such as Australian produce preference, habit, health concerns body weight or taste/texture issues
6. And just thinking again about meat you normally eat how do you normally cook your meat?
 - a. Probe about any particular dishes they like to make with meat including seasonal variations
7. Now I would just like to ask you a little bit more about what you think specifically about pork. So when you hear the word 'pork', what thoughts come to mind?
 - a. Probe about any specific reactions or images to pork and identify specific cuts that might be used regularly and how they are cooked, also follow up participants' rationale who identify that they don't buy/eat pork, ask "for what reasons do you choose not to purchase/ consume pork?"
8. Are there are factors that may discourage you from purchasing pork/purchasing pork more often?
 - a. Probe about ease of cooking, familiarity, cost, availability, convenience, personal preference, positive/negative associations, values such as Australian produce preference, habit, health concerns body weight or taste/texture issues
9. In terms of pork dishes, are there any specific one that you like or dislike?
 - a. Probe about what is most appealing or least appealing about identified pork dishes
10. Finally just thinking about your diets at the moment how important is it to you to buy foods that contribute to your health?
 - a. Probe to clarify participants' perspectives about food and health outcomes

11. So just thinking about health then if you were told that eating pork would benefit your health, how - if at all - would that influence your choice/s when shopping?
12. Well that brings our discussion to a close but does anyone have anything else they would like to add or ask?

Thanks very much for your time and for sharing your opinions with us, they will be most valuable in helping us with our research. Please feel free to contact us if any other thought or ideas or questions come up. We will return in x weeks time, and we look forward to seeing you as part of the research study if you are able to participate. Thanks once again it is greatly appreciated.

Session close

Figure 2: Schematic indicating themes and subthemes identified through analysis.

Table 1: Coding statements and exemplar quotes.

Theme	Subtheme	Statement	Exemplar Quotes
Adaptation	Variability of life circumstances	<p>Current food choices and/or behaviours that have been impacted by changes to lifetime roles, events and experiences:</p> <ul style="list-style-type: none"> - Childhood experiences - Getting married - Children leaving home - Death of a spouse - Living alone or as a couple in retirement 	<ul style="list-style-type: none"> • "... my husband was a fisherman, and my dad was. I've grown up with seafood and a vegetable garden. It's the upbringing, you know" • "I s'pose that comes from, from how your mother did things, 'n' ... so it goes down the line." • "My Mum was a professional cook. My youngest brother ... lives in Switzerland ... he was a ... prize-winning professional cook. I think it must've, ah ... rubbed off" • "...but I had to cancel a few of those recipes out 53 years ago and convert over to a few Dutch recipes, which are very nice ..." • "... when the kids left, he was still cooking for everybody, so we always had a freezer full of meals to eat. But, um ... no, that all changed." • "... we ate less fat I suppose, and I could have full cream milk when the kids are at home 'cos it's healthy for them, but once they'd left, I, I didn't have it any more" • "I'd do, ah, apple pie and custard, you know. I'd do a lemon meringue pie - all that sort of stuff that I stopped doing when they left home." • "I have problems buying a small amount, having shopped for years, with family 'n' stuff." • "I have a baked dinner when I go up to my youngest daughter ... because she's busy working and that ... so, when I go up there I take the leg of lamb and sweet potato ... so I do that, you know, when I go up there ... and I cook them a baked meal ..." • "...particularly Sunday morning, my husband and I always used to have bacon and egg on Sunday morning for breakfast. We had a different breakfast every day of the week ... when he was alive" • "I, I haven't had a pig's trotter ... well, Judy's been dead six years. And a pig's trotter seven years. If I go to the delicatessen and I see them, and oh yes! But too many memories of pig's trotters." • "vegie shopping every Tuesday morning" • "I replace everything that I use, that's all, yeah, and just when I need things, I go and get them" • "I get it as I need it ... because I can't carry too much, heavy ..." • "I just get so much ... every few days. And if I'm out, "Oh, I must get some more fruit" ... and I just get three of this or three apples or..." • "we freeze our soup down; we've always got frozen soup there, or ... if I make curried chicken, usually I do enough for another meal ... or curried sausages, something like that. There's always something in the freezer" • "I'll do two, you know, meals for two ...tonight and tomorrow night. What's the point in doing two lots?" • "I'll just spend 1 or 2 days cooking; have three weeks, three weeks food in the freezer, um, so I'm having a different meal every, every evening". • "I don't freeze a lot of meat ... um ... 'cos I like it fresh ... rather than frozen."
	Management of physiological change	Strategies for selecting, preparing or eating foods arising from diagnosis or experience with an age or health-related issue	<ul style="list-style-type: none"> • "Well, as we've got older, we've certainly eaten less ..." • "I eat about half from what I used to eat 10 years ago." • "I think, more than anything, your age ... makes your eating habits ... better."

Psychosocial parameters	Maintenance of independence	Desire and/or willingness to undertake tasks for oneself and avoid reliance upon others	<ul style="list-style-type: none"> “...we do all our own cooking ...” “I would much rather do it than have to rely on someone to, to do things for me all the time.” “While we can, we will.”
	Sense of community	Desire or willingness to engage with and/or care for other residents	<ul style="list-style-type: none"> “I help other people shop” “We look after each other” “We’re not in each other’s houses, and in each other’s pockets, but we’re there for each other.” “I wouldn’t do that on a regular basis, but, if I know a person is ill ...” “like, our every monthly dinner ... twice a year we have that” “.. Friday night’s Happy Hour.”
	Interest in and understanding of health and nutrition	Desire and willingness to pursue behaviours believed to benefit health (eg. diet, cooking practices, physical activity)	<ul style="list-style-type: none"> “I think it depends on how you want to look after your health, because the older you get, the less exercise you do. And of course, so, you’ve, you’ve got the input, but you’ve got to get the output. You’ve got to get rid of that.” “... people who are here are interested in health ... they take care of themselves; they eat properly, do things properly ... The people that you need in here are the ones that don’t eat healthily ... you need people that are not healthy.” “I think that there is, you know, you have to just say, ‘Well, like, this is healthy’ because there’s so many different advertisements; everybody’s got an angle when they’re telling you ‘Have this’ or ‘Don’t have this’, I think ... utterly confusing” and “Well, it’s all marketing”.
	Preferences, aversions and beliefs	Personal thoughts and feelings pertaining to particular foods or cooking	<ul style="list-style-type: none"> “...if I’m buying pork, I buy free range pork.” “Pork and beef is our belief.” “All different meats.” “Well, it’s the same as cows, anything ... isn’t it ... sheep.” “Nothing will put me off my food.” “It’s all full of hormones.”
Food landscape	Quality	Thoughts and actions based upon perceptions about the merit of various attributes of a product (eg. freshness, flavour, durability)	<ul style="list-style-type: none"> “If we, we can pay a little bit more but get something that will last the full week rather than have to throw out at the end of the week. “ “The old saying, you get what you pay for.” “I’d rather pay a little bit more ... and get quality.”
	Price	Thoughts and actions based upon financial consideration	<ul style="list-style-type: none"> “... we don’t worry about the cost of things ... as long as they’re not sky high.” “... we decide on what we like ... but we usually wait until it comes on special. But we don’t ... buy things that are on just because they’re on special ... we buy the things that we’d like ... and wait until they come on special ... and when they come on special, ah, we might have two or three of them.” “if we are doing lamb, it is the cutlets. I know they are expensive, but that’s the one thing we like.” “... even if it was expensive. I mean, you still need a variety, so.” “I would love to eat a nice fillet steak pork, these sorts of things, but really, it’s just out of my (budget) ...” “... if something’s not on special, I don’t buy it.”
	Country of origin	Decisions and/or actions based upon the country from where food items has been sourced or produced	<ul style="list-style-type: none"> “I read labels because I like to buy Australian.” “If it’s not Australian, ah, ah, fish, forget it.” “I won’t touch any of the overseas ...” “Overseas, that stuff from Vietnam, you don’t know what kind of water it’s been grown in.”
	Store attributes: - Accessibility - Service	Decisions and behaviours arising out of factors relating to food stores: - Ease of access into and around store/shopping complex - In-store service options	<ul style="list-style-type: none"> “...you can park underneath, you see, and there’s always parking available and they’ve got two senior’s spots by the lifts...by the escalators.” “Big wide aisles ...” “I always go to Figtree because I’ve got Coles and Woolies together. “