

Meat and vegetarianism beliefs among Australians

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Abstract

The apparent trend in Australia and similar countries towards decreased red meat consumption and increased interest in vegetarian diets has implications for public health, the environment, health education, and home economics educators.

A 1999 random survey conducted in South Australia found that 1.5% respondents identified as vegetarian and 7.2% as semi-vegetarian. Twenty-five per cent of respondents ate red meat less than once a week. Approximately 40% were interested in vegetarianism. The majority of the sample perceived vegetarian diets to have health benefits. Barriers to the consumption of a vegetarian diet included enjoying eating meat and an unwillingness to alter eating habits.

An additional survey of vegetarians was conducted to allow comparisons to be made between vegetarians and non-vegetarians. Among other differences, vegetarians were more likely to hold universal values than non-vegetarians and to use/trust unorthodox information sources.

Approximately 15% of non-vegetarians were found to hold similar beliefs about vegetarianism as vegetarians. These 'prospective vegetarians' were distinct from vegetarians and the remaining omnivores. For example, they were more likely to be female than the remaining omnivores.

The findings show that a significant proportion of the population is interested in vegetarianism and that interest in broader plant-based diets, that may contain some meat, is probably higher.

Introduction

In Australia, red meat consumption has been decreasing since the 1970s (Baghurst, 1999). Furthermore, in similar countries such as the United States of America and Britain there appears to be a growing interest in vegetarian diets. For example, a recent poll in the United States found that 2.5% of people stated that they never eat meat, poultry or fish/seafood (Vegetarian Resource Group, 2000), whereas this figure was 1% in a 1997 poll (American Dietetic Association, 1997a). In Britain, a survey carried out by Gallup in 1984 gave a figure of 2.1% for respondents reporting themselves as vegetarian, and this had increased to 5.0% by 1999 (Gallup, 1997; Vegetarian Society UK, n.d.). The self-reported prevalence of vegetarianism in Australian adults aged 19 and over was 3.7% in 1995, as reported in the 1995 National Nutrition Survey (Australian Bureau of Statistics, 1997). In South Australia, this figure was 3.3% (Australian Bureau of Statistics, 1995). These trends have implications for public health, the environment, the education of young people, and for the food industry. The latter needs to respond to consumer trends.

Environmental reasons for adopting a vegetarian diet or consuming less meat include objections to practices associated with livestock farming: the destruction of forested areas to make room for grazing animals or for their food-crops; soil erosion; excessive water usage; water pollution; and methane production (Fieldhouse, 1986; Leckie, 1999; Lewis, 1994; Pimentel, Houser, Preiss, & White, 1997; Spedding, 1990). For example, the production of one kilogram of animal protein requires about one hundred times more water than does the production of one kilogram of vegetable protein (Pimentel & Pimentel, 1996). These

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problems result from modern intensive livestock farming methods and from the vast (and increasing) numbers of domestic animals in the modern world (Gussow, 1994).

Researchers and organisations such as the American Dietetic Association (1997b) and Sanders (1999), have shown that it is entirely possible to obtain all of the necessary nutrients from a vegetarian diet. Vegetarian diets can provide adequate amounts of essential amino acids, iron, vitamin B12, calcium, vitamin D and zinc at all stages of the life cycle, but they must be well planned (American Dietetic Association, 1997b). They should include sufficient quantities of a variety of fruits, vegetables, legumes, nuts, seeds and grains (Haddad, Sabaté, & Whitten, 1999; Sanders, 1999). Poorly planned vegetarian diets may entail the risk of not meeting the needs for some nutrients, particularly iron, zinc and vitamin B12 (Dwyer 1991; Mann, 2000). This is because the bioavailability of iron and zinc from plant foods is lower than it is for meat, and the primary dietary sources of vitamin B12 are animal products (meat, eggs and milk) (Herbert, 1994; Hunt, 1996; Snow, 1999).

Well-planned vegetarian diets provide some health and nutrition benefits. They are lower than meat-centred diets in saturated fat, cholesterol and animal protein, and higher in folate, antioxidants such as vitamins C and E, fibre, carotenoids and phytochemicals (American Dietetic Association, 1997b). A number of studies have shown that, compared to non-vegetarians, vegetarians have a lower mean body-mass index, plasma total cholesterol concentration, low-density lipoprotein cholesterol level, and blood pressure (Appleby, Thorogood, Mann, & Key, 1998; Famodu, Osilesi, Makinde, & Osonuga, 1998; Kennedy, Bowman, Spence, Freedman, & King, 2001; Key, Fraser, Thorogood, Appleby, Beral, Reeves, Burr, Chang-Claude, Frentzel-Beyme, Kuzma, Mann, & McPherson, 1999; Li, Sinclair, Mann, Turner, Ball, Kelly, Abedin, & Wilson, 1999; Thomas, Davey, & Key, 1999). Mortality from ischaemic heart disease has been shown to be moderately reduced among vegetarians compared to non-vegetarians (Appleby, Key, Thorogood, Burr, & Mann, 2002).

The important health benefits provided by plant-based diets in general are increasingly being recognised by health organisations and researchers (American Dietetic Association, 1997b; Bingham, 1999; Dietitians Association of Australia, 2000; Dwyer, 1999; Potter, 2000; World Cancer Research Fund and American Institute for Cancer Research, 1997). Plant-based diets conform more closely to public health recommendations than do meat-centred diets (National Health and Medical Research Council, 1992; US Department of Health and Human Services, 2000; World Cancer Research Fund and American Institute for Cancer Research, 1997).

The issues surrounding meat and the consumption of vegetarian diets have implications for home economics teachers, particularly as levels of vegetarianism tend to be higher amongst young people (Australian Bureau of Statistics, 1997; Vegetarian Society UK, n.d; Worsley & Skrzypiec, 1997a). In addition, young people tend to be idealistic and environmentally conscious (Worsley & Skrzypiec, 1998). It is important that teachers are aware of these issues.

The principal aim of the PhD thesis on which this paper is based (Lea, 2001) was to elucidate ways to further promote the consumption of healthy vegetarian and other plant-based diets in Australia. This was achieved by:

- describing people's perceptions of meat and vegetarianism, in particular the barriers and benefits of vegetarianism, in a study of South Australians; and
- investigating relationships between level of meat consumption, information sources, beliefs about meat, barriers and benefits of vegetarianism, personal values, and demographic items.

Method

One thousand people were selected at random from the South Australian population by using an electronic version of the telephone directory. A 12-page booklet (*Food choice, information and your attitudes*) was mailed to each person in the sample in mid-1999. A number of follow-ups to the original mailing were conducted in order to improve the response rate. Full details have been reported elsewhere (Lea & Worsley, 2001).

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The questionnaire was developed from interviews with fifteen vegetarians about their food choices, information use and lifestyle; from the literature; and from three existing food choice questionnaires. The latter were the Institute of European Food Studies European Union survey on attitudes to food, nutrition and health (Kearney, Gibney, Martinez, de Almeida, Friebe, Zunft, Widhalm, & Kearney, 1997), an Australian survey on meat consumption and attitudes (Worsley, Baghurst, & Skrzypiec, 1995), and Australian and New Zealand surveys of food concerns (Worsley & Scott, 2000). Full details of the questionnaire have been reported elsewhere (Lea & Worsley 2001; Lea & Worsley, 2002).

The sections of the questionnaire included:

- 4 items about general nutrition beliefs and behaviours (e.g. "I do not need to make any changes to the food I eat as it is already healthy enough").
- 20 items on beliefs about meat (e.g. "I love to eat red meat", "Meat causes cancer", "Meat is necessary in the adult human diet", "Meat production is cruel to animals", "Meat is important for building strength", "Red meat is very expensive").
- 5 items on frequency of consumption ("never", "rarely", "one to four times a week", "almost daily/daily") of animal products (red meat, white meat, fish and seafood, eggs and dairy).
- 12 items about vegetarianism which included level of interest in vegetarianism, whether in the past month respondents had thought about making changes towards becoming vegetarian, how likely it was for them to become vegetarian in the future, and current self-perceived dietary group (non-vegetarian, semi-vegetarian or vegetarian).
- 25 items about personal barriers to vegetarian diets (e.g. "My friends eat meat", "I like eating meat", "Vegetarian diets are boring", "There is too limited a choice when I eat out", "There is not enough iron in vegetarian diets", "It takes too long to prepare vegetarian food", "I don't know what to eat instead of meat").
- 24 items on benefits of vegetarian diets (e.g. "Prevent disease", "Have a tastier diet", "Eat more fruit and vegetables", "Help the environment", "Help animal welfare/rights", "Decrease saturated fat intake in my diet", "Satisfy my religious

and/or spiritual needs").

- 23 items about personal values, modelled on the values elucidated by Schwartz (1992); (e.g. "Equality (equal opportunity for all)", "Family security (safety for loved ones)", "Protecting the environment (preserving nature)", "Wealth (material possessions, money)").
- 13 demographic variables including sex, age, occupation, marital status, education level, nature of household, income, postcode, ethnicity and religion.

Respondents answered most items by indicating their level of agreement with each belief on a five-point Likert-type scale, ranging between "strongly disagree" and "strongly agree".

Due to the small number of self-identified vegetarians (n=9) in the random sample, a separate survey using the same questionnaire was conducted with a non-random sample (n=106) of vegetarians and semi-vegetarians. This was done in order to ensure the sample contained statistically viable numbers for comparisons between people with high meat consumption (present in large numbers in the random sample) and people with very low or nil meat consumption (not present in adequate numbers in the random sample). Participants were selected by placing advertisements in vegetarian cafés and restaurants, health food stores and at the University of Adelaide; by distributing questionnaires at an environmental event; and by word-of-mouth.

Statistical methods

Analyses were conducted with SPSS for Windows statistical software (version 10.0.05, 1999, SPSS Inc.). All statistical tests used an alpha level of 0.05.

The results of basic descriptive analyses such as frequencies and cross-tabulation analyses (by vegetarian status) are shown in this paper. In addition, categorical principal components analysis (CATPCA) was utilised. CATPCA was performed on the responses of randomly and non-randomly selected participants to beliefs about meat and barriers and benefits of vegetarian diets. This was done in order to identify those non-vegetarian individuals who fell into the same range as the vegetarians for the combined meat beliefs and barriers and benefits of vegetarianism. CATPCA is a

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multivariate statistical technique that quantifies categorical variables. CATPCA also reduces the dimensionality of the data, like principal components analysis does (SPSS, 1990). However, non-linear analysis can be performed by CATPCA, but not by standard principal components analysis (SPSS, 1990).

Results

Response and respondent characteristics

Of the random population subjects who could be contacted, 70.6% filled out the questionnaire (n=603), with two questionnaires being unusable. Together with the 106 vegetarian survey participants, there were 707 respondents in total.

The demographic characteristics of the non-randomly selected sample (mainly vegetarians), the randomly selected (mainly non-vegetarians) sample, and the general South Australian population, as obtained from the Basic Community Profile of the 1996 Census of Population and Housing (Australian Bureau of Statistics, 1996), are

listed in Table 1. Comparisons were made for sex, age, country of birth, employment status, and marital status, as these were the only items that allowed for direct comparison between the Basic Community Profile and the survey. There were some differences between the three groups. The major biases in the random sample were over-representation of 45–64 year olds and married people and under-representation of 19–24 year olds compared with the Census data. The non-random sample was younger than both the random and Census groups. This agrees with findings from surveys that the prevalence of vegetarianism is higher amongst younger people (Australian Bureau of Statistics, 1997; Vegetarian Society UK, n.d; Worsley & Skrzypiec, 1996). Fewer of the non-random sample were employed full-time, married or widowed/divorced, compared with the random sample and the Census data. Unemployment figures were similar for the non-randomly selected sample and the Census data, although the random sample contained a lower proportion of unemployed people.

“Plant-based diets conform more closely to public health recommendations than do meat-centred diets.”

Table 1. Demographic characteristics of respondents and the South Australian population as a whole, as obtained from the Australian Bureau of Statistics Basic Community Profile of the 1996 Census of Population and Housing

	NON-RANDOM SURVEY RESPONDENTS	RANDOM SURVEY RESPONDENTS	1996 CENSUS
	%	%	%
Sex			
Female	54.7	56.8	51.4
Male	45.3	43.2	48.6
Age^a			
15–18 years	3.8	0.7	6.7
19–24 years	27.4	3.8	10.5
25–44 years	48.1	40.9	38.0
45–64 years	17.0	33.4	26.9
65+ years	3.8	21.2	17.4
Country of birth			
Australia	71.4	74.2	75.5
Other country	28.6	25.8	24.5
Employment status^b			
Employed full-time	17.9	29.8	34.2
Employed part-time	17.9	17.6	17.1
Unemployed	7.5	1.7	6.1
Marital status			
Married ^c	38.5	69.0	54.0
Widowed/divorced	10.6	17.4	17.2

Note that only directly comparable items could be included in this table.

^a No minimum age prerequisite was specified for participation in the survey, however as the survey was addressed to a person listed in the phone directory, it was expected that younger people (particularly under-18s) would be less likely to participate. As no one under 15 participated in the survey, the Census data for age excludes those under 15 (i.e. the percentages are expressed as a percent of those aged 15 and over). The Census percentages do not total 100% due to the inclusion of overseas visitors (with no age stated) in the total number of persons.

^b The survey percentages for "employed full-time" and "employed part-time" exclude those self-employed, as there was a separate category for the latter, comprising 7.3% of the sample. However, the Census data included the self-employed with full-time or part-time employed. Therefore, the survey "employed full-time" and "employed part-time" categories are an underestimate.

^c In the survey, "married" includes living together, whereas in the Census, it does not. Therefore, the survey figure is an overestimate.

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Level of meat consumption/vegetarianism and interest in vegetarianism by random population sample

The results for the random population sample alone will be discussed first. It was found that:

- 1.5% of the sample identified themselves as vegetarian
- 7.2% identified as semi-vegetarian (low red meat consumers)
- 15.4% of respondents had low meat consumption (consuming red meat less than once a week) but did not describe themselves as semi-vegetarian or vegetarian
- 65.2% had moderate meat consumption (eating red meat between one and four times a week)
- 10.7% had high meat consumption (eating red meat daily or almost daily)

Thus, a quarter of respondents ate red meat less than once a week. Approximately 40% of the random population sample was somewhat or very interested in vegetarianism. A quarter of respondents (excluding vegetarians) had thought about possible changes they could make towards eating a vegetarian diet in the last month and 15% of non-vegetarians stated that in the next six months they were at least slightly likely to make some changes towards becoming vegetarian.

Table 2. Five most important benefits of eating a vegetarian diet for the random population sample

ITEM	% Agree
Eat more fruit and vegetables	74
Decrease saturated fat intake in my diet	65
Control my weight	40
Help animal welfare/rights	36
Prevent disease in general (e.g. heart disease, cancer)	36

Table 3. Five most important barriers towards eating a vegetarian diet for the random population sample

ITEM	% Agree
I like eating meat	78
I do not want to change my eating habit or routine	56
I think humans are meant to eat meat	44
My family eats meat	43
I need more information about vegetarian diets	42

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Vegetarians were found to hold more universal values than non-vegetarians”

Benefits and barriers to eating a vegetarian diet - perceptions of the random population sample

The majority of the random population sample perceived there to be health benefits associated with vegetarian diets, particularly increased fruit and vegetable intake and decreased saturated fat intake (Table 2). Weight control and animal welfare issues were also important. Barriers to the consumption of a vegetarian diet included enjoying eating meat and an unwillingness to alter eating habits (Table 3). (The perceived barriers and benefits of vegetarian diets have been discussed more fully in a short communication submitted to Public Health Nutrition in May 2002, entitled “Benefits and barriers to the consumption of a vegetarian diet in Australia”.)

Vegetarians and non-vegetarians compared

Vegetarians from both samples (vegetarian sample and random population sample) were compared with non-vegetarians. There were strong differences with regard to beliefs about meat, as would be expected. The five most highly agreed upon belief statements are listed in Table 4. The most highly agreed upon item for non-vegetarians was the enjoyment of eating meat (80% agreed), while for vegetarians it was the statement that meat production is cruel (93% of vegetarians agreed).

There were also differences in other areas less directly related to meat, including use of and trust in food/health/nutrition information sources and personal values. Some examples are provided in Table 5. Among other differences, vegetarians were found to hold more universal values than non-vegetarians (e.g. Equality, Protecting the environment) and were more likely to use and trust unorthodox food/health/nutrition information sources, such as alternative health practitioners.

Table 4. Five strongest beliefs about meat for non-vegetarians and vegetarians

ITEM	% Agree
Non-vegetarians	
I love to eat red meat such as beef, veal or lamb	82
Meat is necessary in the adult human diet	68
Meat is necessary in children's diets	67
Meat is important for building strength	62
Meat is more a food that men are likely to eat	52

Table 4. Five strongest beliefs about meat for non-vegetarians and vegetarians

ITEM	% Agree
Vegetarians	
Meat production is cruel to animals	93
I think meat is disgusting	71
Humans have no right to kill animals for food	69
Meat such as beef or lamb is unhealthy to eat	64
Meat causes heart disease	55

Table 5. Selected items where strong differences were present between vegetarians and non-vegetarians

ITEM	Vegetarians	Non-vegetarians
Use of information sources		
Use alternative health practitioners	44	20
Use television programs	36	62
Use advertising	28	61
Use doctors (medical)	23	47
Use family	40	69
Use books	85	60
Trust in information sources		
Trust advertising	4	20
Trust television programs	12	34
Trust articles in vegetarian magazines	81	26
Trust doctors (medical)	34	83
Trust National Heart/Anti-Cancer Foundations	50	83
Trust slimming clubs	4	14
Personal values		
Preserving my public image (protecting my "face")	2	14
Protecting the environment (preserving nature)	87	50
Equality (equal opportunity for all)	87	61
A varied life (filled with challenge, novelty and change)	62	29
Respect for tradition (preservation of time-honoured customs)	14	27

Prevalence and characteristics of prospective vegetarians

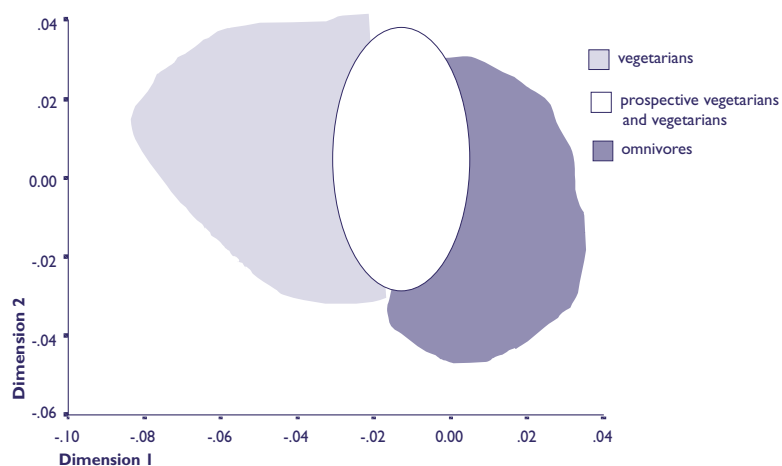
An important part of the thesis was to estimate the proportion of, and describe the characteristics of, those non-vegetarians in South Australia who hold similar beliefs about meat and vegetarianism as vegetarians and hence may be prospective vegetarians. If these people do take the step

of becoming vegetarian this would impact on health status, food consumption patterns and the food industry. (This section of the thesis is discussed more fully in a manuscript submitted to *Appetite* in September 2002, entitled "What proportion of Australian consumers are prospective vegetarians?")

Using CATPCA (on beliefs about meat, barriers and benefits of vegetarian diets), a plot of object points labelled by dietary group (non-vegetarian, self-identified semi-vegetarian and self-identified vegetarian) was obtained. Two non-vegetarian groups were identified:

- (1) *prospective vegetarians* — those non-vegetarians in the same range as the vegetarians, and
- (2) *omnivores* — those non-vegetarians outside the range of vegetarians.

Figure 1 displays the areas covered by the object points for the vegetarian group and the two non-vegetarian groups (omnivores and prospective vegetarians) for beliefs about meat, perceived benefits of vegetarianism, and perceived barriers to vegetarianism.

Figure 1. Categorical principal components plot showing the areas covered by the object points for the vegetarian group and the two non-vegetarian groups (prospective vegetarians and omnivores)

Approximately 15% of non-vegetarians (equivalent to 13.5% of the random population sample) were found to hold similar beliefs about vegetarianism as vegetarians. These 'prospective vegetarians' were distinct from vegetarians and the remaining non-vegetarians. For example, they were less likely than the remaining non-vegetarians to eat red meat as frequently ($p < 0.001$). As shown in Figure 2, prospective vegetarians were over three times as likely as omnivores to consume red meat rarely.

“This would impact on health status, food consumption patterns and the food industry.”

Figure 2. Frequency of red meat consumption for vegetarians, prospective vegetarians and omnivores, expressed as the percentage of cases

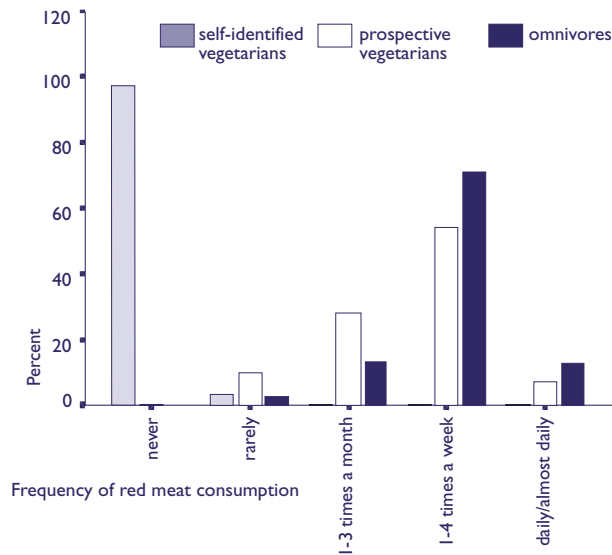


Figure 3. Level of interest in vegetarianism for prospective vegetarians and omnivores, expressed as the percentage of cases

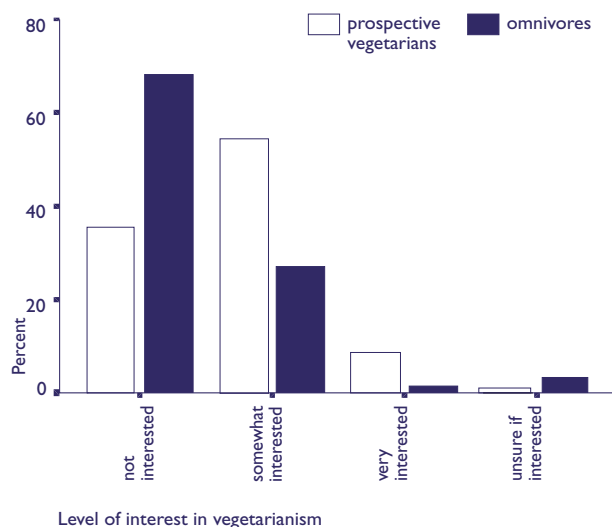
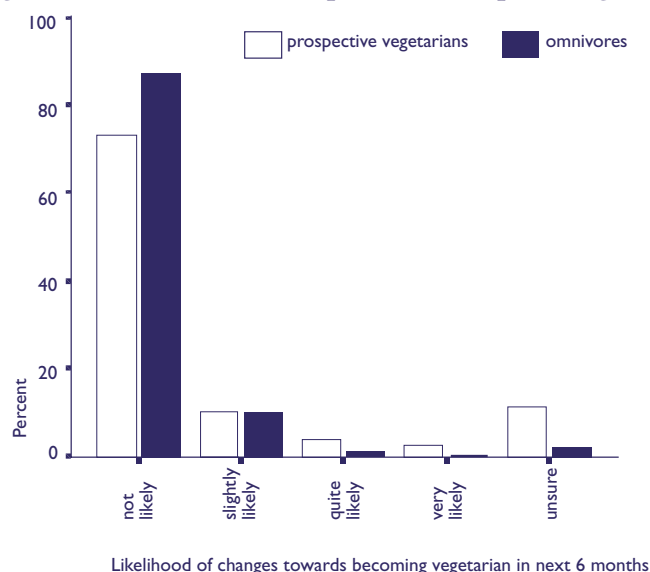


Figure 4. Perceived likelihood of making some changes towards becoming vegetarian during the next six months for prospective vegetarians and omnivores, expressed as the percentage of cases



Prospective vegetarians were more interested in vegetarianism than omnivores were ($p < 0.001$). They were twice as likely as omnivores to be somewhat interested, and about five times as likely to be very interested (Figure 3). Prospective vegetarians were more likely than omnivores to think that during the next six months they would make such changes ($p < 0.001$). For example, prospective vegetarians were three times as likely as omnivores to state that it was quite likely that they would make some changes during the next six months (Figure 4).

Compared with the remainder of the non-vegetarians (omnivores), prospective vegetarians were more likely to search for information on healthy eating, with 74% of prospective vegetarians and 58% of omnivores agreeing that they frequently look for such information ($p < 0.05$). There was no significant difference between vegetarians and prospective vegetarians. Prospective vegetarians were the most likely of the three groups to agree that they needed to make dietary changes as their diet is not healthy enough (49%) with vegetarians least likely to agree (26%) ($p < 0.01$). This suggests that prospective vegetarians are open to the suggestion of dietary change.

In general, despite prospective vegetarians falling inside the CATPCA plot's range for vegetarians, prospective vegetarians were closer to omnivores than to vegetarians in their use of information sources to find out about food, health or nutrition, trust in information sources, and personal values. However, there were exceptions. For example, prospective vegetarians used the following sources of food, health and nutrition information sources more often than did omnivores: dietitians/nutritionists (45% vs 30%; $p < 0.01$), health food shop staff (40% vs 24%; $p < 0.01$), articles in cooking magazines (69% vs 56%; $p < 0.05$), teachers/school/higher education (26% vs 17%; $p < 0.05$). In addition, prospective vegetarians were more likely than omnivores to trust articles in vegetarian magazines (44% vs 23%; $p < 0.001$), health food shop staff (46% vs 30%; $p < 0.01$), and teachers/school/higher education (38% vs 23%; $p < 0.01$), but were less likely to trust television programs (31% vs 35%; $p < 0.05$). There were also differences between the personal values of prospective vegetarians, vegetarians and omnivores. For example,

more prospective vegetarians than omnivores agreed that the following were very important guiding principles in their life: "Protecting the environment (preserving nature)" (65% vs 47%; $p<0.05$), "A world of beauty (beauty of nature and the arts)" (48% vs 23%; $p<0.001$), "Helpful (working for the welfare of others)" (55% vs 33%; $p<0.001$), "Enjoying life (enjoying food, sex, leisure etc.)" (72% vs 66%; $p<0.05$), "Respect for tradition (preservation of time-honoured customs)" (45% vs 24%; $p<0.001$; note that only 14% of vegetarians agreed that this item was very important). Prospective vegetarians were usually intermediate between vegetarians and omnivores with regard to the various sets of items, and therefore could be clearly differentiated from both groups.

With regard to demographic variables, prospective vegetarians were more likely than omnivores to be female (69% vs 54%; $p<0.05$) and were more likely to be born outside of Australia (37% vs 24%; $p<0.01$). Prospective vegetarians were less likely than omnivores to identify as Anglo-Australian (55% vs 69%; $p<0.05$) and to be employed full-time (19% vs 32%; $p<0.01$). There were no statistically significant age, income, education, marital status or religious (religion vs. no religion) differences between omnivores and prospective vegetarians.

In summary, compared to other non-vegetarians, prospective vegetarians were found to differ somewhat in their:

- frequency of red meat consumption;
- demographic characteristics;
- beliefs about their own diet;
- personal values;
- information seeking behaviour (including use of information sources); and
- level of trust in some information sources.

Discussion

The random population survey found that 1.5% and 7.2% of the South Australian population identify as vegetarian and semi-vegetarian respectively, although the 1995 National Nutrition Survey reported that a higher proportion (3.3%) of the South Australian population is vegetarian (Australian Bureau of Statistics, 1995). With the addition of the 13.5% of the population who may be classified as prospective

vegetarians, a substantial minority (22.2%) of Australians appear to have a positive attitude towards vegetarianism and have either already become vegetarian or low meat consumers, or may be susceptible to the promotion of vegetarianism. In addition, the majority of South Australians appear to perceive health benefits to be associated with vegetarian diets, and almost 40% perceive there to be animal welfare benefits.

These findings have implications for education and health promotion, such as home economics in schools. For example, it is important to ensure that vegetarians and prospective vegetarians are aware that there are certain nutrients (e.g. iron, vitamin B12) that need attention, if the full benefits of eating a vegetarian diet are to be achieved. However, the need to plan vegetarian diets does not mean that all vegetarian diets are nutritionally inadequate. It is likely that vegetarian diets would be more popular if fears about the perceived lack of vital nutrients (i.e. that meat is necessary and an important strength-giver) in plant-only diets were overcome, and practical advice about the preparation of quick and tasty plant-based meals was offered (Lea & Worsley, 2001). The research findings show that many non-vegetarians appear to simultaneously hold beliefs that meat is necessary and that vegetarianism provides health benefits, and thus may be somewhat ambivalent about meat.

Home economics teachers can play a role in educating young people about how to eat a healthy vegetarian diet. For example, they may facilitate classroom discussions about the issues that surround meat and vegetarianism and may provide appropriate dietary and non-dietary information. For example, they could link ecological education with vegetarian-related nutrition education. This is important because, as previously mentioned, young people tend to be idealistic, environmentally conscious and more in favour of vegetarian diets than older groups. In addition, it is likely that young people may be vegetarian or reduced meat-eaters for ethical (environmental or animal welfare) reasons rather than health reasons and thus may not be aware of the nutrient deficiencies that can result from low or nil meat consumption when combined with a poorly planned diet. This is particularly crucial as an earlier examination of South Australian

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female adolescents, who were more likely than males to be vegetarian or semi-vegetarian, suggested a link between eating disorders and teenage vegetarianism/semi-vegetarianism (Worsley & Skrzypiec, 1997b).

Given that the current research found that the enjoyment of eating meat was the strongest barrier to eating a vegetarian diet, it may be expected that the proportion of non-vegetarians susceptible to the promotion of plant-based diets that contain some meat, such as that advocated by the World Cancer Research Fund (1997), would be higher than that susceptible to the promotion of the stricter diet of vegetarianism. If future research confirms this, it should be very encouraging for health professionals who advocate plant-based diets.

The psychographic and demographic profile of the prospective vegetarians formed here may enable this group to be targeted for dietary interventions and communications. It is likely that prospective vegetarians are more motivated to alter their meat consumption than the remaining non-vegetarian population. They may make ideal targets for those who wish to promote plant-based diets that contain some meat or vegetarian plant-based diets. They also may form a solid base for the spread of plant-based eating patterns throughout the community. Those who wish to maintain or increase the current level of meat consumption in Australia may also need to take note of the characteristics of prospective vegetarians.

Conclusion

This paper has highlighted some of the characteristics of vegetarians compared to non-vegetarians, and considered the level of interest in vegetarian diets present in the general population, as well as the perceived barriers and benefits of vegetarian diets. A substantial proportion of Australian non-vegetarians appear to have the potential to adopt vegetarian dietary practices. It is essential that these individuals are sufficiently knowledgeable about the potential health benefits and risks of vegetarian diets. Compared to other non-vegetarians, prospective vegetarians differ in their meat consumption behaviour, demographic characteristics, values, beliefs, information seeking behaviour, and level of

trust in food, health and nutrition information sources. These characteristics may be important to consider if attempts are made to influence meat beliefs and consumption.

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Enjoyment of
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