

Maintaining vegetarian diets: Personal factors, social networks and environmental resources

Jabs, Jennifer

Maintaining Vegetarian Diets¹

Personal Factors, Social Networks and Environmental Resources

Abstract/Resume

This study was designed to investigate factors influencing the maintenance of a vegetarian diet. An interpretivist approach and qualitative research methods were used in the study design. Nineteen vegetarians from a metropolitan area in Western New York State were purposefully recruited using snowball sampling to participate in in-depth interviews. Respondents varied in age, gender and type and duration of vegetarian diet, although the sample was predominantly middle-aged, middle-class and female and had ties to community groups. Interview transcripts were analyzed using the constant comparative method of qualitative data analysis. The maintenance of vegetarian diets was supported by personal factors, social networks and environmental resources. Personal factors included: internal beliefs, skills and habits and physical feedback. Social networks included: organized vegetarian groups as well as animal rights, environmental, or health groups supporting vegetarianism and vegetarian friends. Environmental resources, such as the availability of new vegetarian foods in supermarkets and restaurants, facilitated maintenance of vegetarian diets. Respondents perceived that society viewed vegetarianism as increasingly "mainstream," although diet-centred family conflicts were still common. These findings can assist dietitians in developing strategies for working with vegetarian clients by providing better understanding of personal, social and environmental supports for vegetarians dietary behaviours.

(Can J Diet Prac Res 1998; 59:183-189)

Cette etude avait pour but d'explorer les facteurs qui influencent le maintien d'une alimentation vegetarienne. Dans le protocole experimental, les auteures ont utilise une approche interpretative et des methodes de recherche qualitatives. Au total, 19 vegetariens d'une region metropolitaine de l'ouest de l'Etat de New York ont ete recrutes deliberelement par echantillonnage boule de neige pour participer a des entrevues en profondeur. Les repondants variaient selon l'age, le sexe, le type d'alimentation vegetarienne et sa duree; l'echantillon comprenait toutefois surtout des femmes d'age moyen et de classe moyenne ayant des liens avec des groupes communautaires. Les transcriptions d'entrevues ont ete analysees a l'aide de la methode de comparaison constante des donnees qualitatives. Le maintien du regime vegetarien etait fonde sur des facteurs personnels, des reseaux sociaux et des ressources environnementales. Parmi les facteurs personnels, mentionnons les croyances, aptitudes et habitudes individuelles et les effets sur la sante. Les reseaux sociaux comprenaient des groupes bien constitues d'adeptes du vegetarisme, des groupes de defense des droits des animaux, de l'environnement et de la sante qui appuient le vegetarisme, ainsi que les amis des vegetariens. Les ressources environnementales, telles que la disponibilite de nouveaux aliments vegetariens dans les supermarches et les restaurants, facilitaient le maintien du regime vegetarien. Les repondants estimaient que la societe considere desormais le vegetarisme comme un courant de plus en plus important, bien que les conflits familiaux au sujet de l'alimentation soient encore chose frequente. Ces resultats peuvent aider les dietetistes a mettre au point des strategies de travail avec leurs clients vegetariens, en fournissant une meilleure comprehension des appuis personnels, sociaux et environnementaux que regoivent les vegetariens dans leur comportement alimentaire. (Rev can prat rech dietet 1998; 59:183-189)

INTRODUCTION

Government agencies are incorporating research about the benefits of plant-based diets into their health messages (1-5). Professional dietetics groups have taken the position that vegetarian diets can be healthy and nutritionally

adequate when appropriately planned (6,7). Vegetarian diets have been associated with reduced risk of chronic degenerative diseases (8-11). Many people report that they are following vegetarian diets and seeking out vegetarian foods for both health and ethical reasons (12-14).

There have been several changes in the food system that facilitate the maintenance of a vegetarian diet. A greater number and variety of prepared vegetarian foods are available to consumers due to larger supermarkets, technical manufacturing and packaging advances and the influx of ethnic foods (15-18). In a qualitative study of 76 vegetarians in England, respondents reported that supermarkets carried many products for vegetarians; it was easier for vegetarians to eat away from home and that the mass media promoted vegetarian diets (19).

Research literature about the maintenance of vegetarian diets is sparse. Dwyer, et. al., studied 100 vegetarians and found that respondents received positive feedback to maintain their diet for several reasons: 51% reported having lost weight since adopting a vegetarian diet and 60% felt a greater positive mental outlook (20). Respondents reported that the following outcomes helped them maintain their vegetarian diet: 38% felt calmer and more spiritual, 13% felt a greater awareness and harmony with nature, 10% experienced positive health outcomes, and 2% experienced a feeling of independence. All but 11 of 594 people replying to a Vegetarian Times survey indicated that following a vegetarian diet became a way of life for them which helped them maintain their diets (21).

Although past studies have identified some outcomes of vegetarian diets that supported their maintenance, the maintenance process is not well understood. This research systematically examined the maintenance of vegetarians diets, specifically looking at the process of maintenance as well as factors that acted as barriers or enhancers to the maintenance of vegetarian diets. Various theoretical models have been applied to the understanding of dietary change and maintenance including the stages of change model (22), social cognitive theory (23), and social networks (24). The stages of change model defines progressive stages that people go through when changing habitual behaviours such as diet, with maintenance as the final stage (22). Social cognitive theory has been applied to understanding the reciprocal interaction of personal characteristics, environmental resources and behaviour on maintaining health outcomes (23). A central concept of social cognitive theory is that of self-efficacy, a person's expectation of her ability to perform or maintain a certain behavior. Social networks are intersecting relationships that can be a source of social support for maintaining a behaviour (24). The mechanisms by which social support is provided include: instrumental support that provides material or informational support; expressive support that provides emotional support and social control that provides a way to enforce social norms. Multiple theoretical perspectives can be used to interpret different aspects of maintenance behaviour to provide a more complete and holistic view of vegetarianism.

Dietitians often work with clients maintaining vegetarian dietary patterns. In order for dietitians to assist vegetarian clients in eating healthful diets, it is first important to understand the barriers and enhancers involved in the process of maintaining a vegetarian diet. This analysis investigated the maintenance of vegetarian diets from the perspective of vegetarians. This study represents a step towards developing a conceptual framework for understanding the complex factors involved in maintaining dietary behaviours.

METHODS

This research was part of a larger qualitative study that examined people's experience with vegetarianism and the psychosocial consequences of adopting a vegetarian diet (25). This research used qualitative methods that are useful in dietetics to provide information about dietary behaviours of individuals and groups (26). These methods allowed the investigator to study the topic from the point of view of the participants and to gain insight into the complex and dynamic influences on the maintenance of a vegetarian diet (27). The study was approved by the University Institutional Review Board.

Sample selection - Sampling for this study was purposeful and stratified (28) to achieve maximum variation with regards to age, gender and type and duration of vegetarian diet. In the recruitment process, referrals and recruits for the study were screened for these characteristics before interviewing to insure a varied sample. These characteristics were chosen in order to assess possible differences in respondents' experiences with vegetarian diets. Participants were recruited via snowball sampling that has been successfully used in other projects to study people following a vegetarian diet (13, 29-33). Snowball sampling is a process by which current study participants contribute the names of other potential participants. This is an effective method to identify "invisible" groups, such as vegetarians, in populations (34). Recruitment process - Nineteen vegetarian respondents were recruited by formal and informal referral. Initially the primary investigator announced the purpose of the study at a vegetarian group meeting in a city in Western New York State. Nine respondents were recruited from this meeting, two responded to a recruitment card placed in the member newsletter, six were referrals from previous respondents and two responded to recruitment cards left with previous respondents.

Data collection - One in-depth, open-ended, semi-structured interview (35) was conducted at locations convenient for respondents such as their homes, food shops and local parks. One investigator conducted all of the interviews and the data analysis. Respondents were informed that the purpose of the study was to learn about their experience following a vegetarian diet.

The interviews followed a semi-structured interview guide that provided an outline for the interview but allowed flexibility to probe emergent themes and issues. A pilot interview guide was pre-tested with nutrition and social science faculty and two community members not included in the sample. The pilot guide was revised to improve clarity of questions. Questions about the challenges of being vegetarian were added. After the first three interviews with study participants the guide was revised again to include the challenges of travelling for vegetarians. Interviews ranged from approximately 45 minutes to three hours in length and were audio-taped. All interviews were transcribed verbatim by the primary investigator. Following all interviews, detailed field notes were taken to describe the setting of the interview, the nature of the interaction, the perceived trustworthiness of the responses, emergent analytic issues and methodological notes. Recruitment was discontinued when a point of theoretical saturation was reached when additional interviews provided little new information regarding respondents' experiences with vegetarianism (36).

Data analysis - Data analysis was guided by the constant comparative method of qualitative data analysis and occurred continuously throughout the study (36,37). Following transcription of approximately 10 interviews, the interviews and field notes were reviewed to develop an initial coding scheme. The coding scheme was modified as new interview data introduced additional concepts or suggested reinterpretation of initial codes. Analysis of patterns and themes that emerged from coded transcripts were used to develop an understanding of the process and influences on the maintenance of a vegetarian diet. The Ethnograph v4.0 software package (Seidel, Friese, & Leonard. Amherst, MA: Qualis Research Associates, 1995) was used to assist in sorting concepts and themes in data analysis.

Several techniques were used to enhance data trustworthiness (26,38). Throughout the study the primary investigator engaged in peer debriefing (39), in which she discussed research findings with faculty, students and peers to aid in the development and expansion of the findings. Member checks (39), in which developing theories were discussed with participants to obtain their response to interpretations of the data, were used to further validate the findings.

RESULTS

Respondents varied in age, gender and type and duration of vegetarian diet, although the most common characteristics were female gender, middle-aged, married, middle to upper-- middle class and well educated (Table 1). A variety of dietary practices were represented. At the time of the interviews, a vegan diet (in which no animal-

derived food was consumed) was the most common practice, although the majority of respondents consumed one or more animal products. Most had adopted vegetarian diets as adults, had followed a vegetarian diet for over four years and belonged to a vegetarian group.

In making a change to a vegetarian diet, all but two respondents gradually eliminated animal-derived food in a progressive, step-wise manner by avoiding red meat, chicken, fish, eggs then dairy products. The two exceptions followed a gradual process, but first eliminated fish or dairy products respectively before going on to eliminate other animal products. As respondents eliminated animal-derived food, they developed new strategies to help them maintain their dietary changes. The interviews revealed that maintenance factors could be divided into three main categories: personal factors, social networks and environmental resources. Each of these categories will be discussed separately.

Personal factors - Personal factors included internal convictions, physical feedback, and skills and habits. Many respondents stated that their convictions about the welfare of animals and their ethical values helped them maintain a vegetarian diet. Animal cruelty issues and a compunction against killing animals for food were central personal issues for this group. Following an eating pattern that was consistent with her convictions provided positive reinforcement for a 53-year-old, lacto-vegetarian who stated:

"It's much easier to live with myself [following a vegetarian diet]. I don't feel that I'm causing harm to other creatures." For other respondents threats to personal health or the health of close family or friends were important. The positive health benefits they experienced after adopting a vegetarian diet were the primary factors they drew upon to maintain a vegetarian diet. Most respondents reported losing weight and subsequently maintaining what they believed to be a healthy weight since adopting a vegetarian diet. A 54-year-old, lacto-ovo-vegetarian woman stated the following:

"It's [a vegetarian diet] a nice way to stay thin. If nothing else you're more likely to be able to keep your figure with a vegetarian diet than if you would be eating steak. "

Respondents who adopted a vegetarian diet due to physical illness reported that since adopting a vegetarian diet their health had improved. For example, a 36-year-old, 18-year lacto-vegetarian used the following analogy to express his feelings about adopting a vegetarian diet.

"I just felt better. . . it's like I had ridden a junky bike for the last five years and someone gave me a good bike, it's an irreversible thing, it's like, wow, this feels good! I would never go back."

Respondents reported that a lack of cooking skills and the perception that preparing vegetarian food products was labour- and time-intensive were barriers to the maintenance of vegetarian diets. One respondent, categorized as a semivegetarian because he had eliminated red meat from his diet, was working to eliminate more animal-derived foods from his diet. He stated the biggest barrier to maintaining a vegetarian diet was:

a. . my lack of cooking and lack of willingness to prepare food.... I need to find something quick that I can roll-up and eat as I'm going out the door." Another 35-year-old, lacto-ovo vegetarian woman stated:

"I think time wise it [a vegetarian diet] is more of a constraint to me. They say it's not any more hard to prepare[the] food but I think it is a little bit more time consuming."

It was easier for respondents who possessed skills and had developed established behavioural routines, such as taking time for preparation, to maintain vegetarian diets.

Social networks - Social networks included the individuals and groups with which respondents interacted. These networks usually, but not always, supported respondents in maintaining a vegetarian diet. Social support for vegetarian food choices came primarily from friends and community groups, while opposition came most often from nuclear family members.

About half of the respondents had close friends who followed a vegetarian diet. Friends provided instrumental support such as information about places to shop and ways to prepare food that helped vegetarian respondents develop behavioural routines facilitating the maintenance of a vegetarian diet. Friends also provided emotional support by empathizing with accounts of struggles involved in following a vegetarian diet and offering encouragement.

All except one respondent belonged to a group supporting vegetarianism; a vegetarian group that explicitly promoted vegetarian diets or animal rights, an environmentally concerned organization, or health groups in which a vegetarian or plant-- based diet was one of the multiple goals of the group. The one exception was the semi-vegetarian who was unsuccessful in eliminating more animal-derived foods, in spite of his wish to do so. Respondents who joined vegetarian groups expressed a sense of common bonding and shared feelings with other vegetarians. One respondent described how the vegetarian group provided her with a shared identity and supported her:

" . . . just by accepting the fact that I wasn't a meat eater. . . Some of them were the same, had the same philosophy and just knowing that you're not alone and you're not the only one doing something weird, that all the rest of your culture disagrees with. It's good to have a little support."

Respondents reported that a vegetarian group also helped them with practical aspects of following vegetarian diets, by providing many forms of instrumental support. The monthly group meetings usually included an educational portion that presented information about new vegetarian products, members sharing their experiences following a vegetarian diet and a potluck dinner where recipes were shared.

Vegetarian group norms operated as unwritten rules and also contributed to the maintenance of a vegetarian diet. One respondent hesitated to join a vegetarian group because he was not a vegan and felt he would not be accepted. All except one respondent mentioned being tempted to eat one or more non vegetarian foods due to cravings, convenience or resources. Respondents felt especially guilty if they ate non vegetarian foods in the presence of people who knew they were vegetarian.

In general, respondents' nuclear families were not supportive of vegetarian diets. Respondents' parents often attempted to discourage them from adopting a vegetarian diet in their youth. For respondents who adopted a vegetarian diet as adults, their non vegetarian children were often unsupportive of their parents' dietary changes. A 72-year-old, pesco-vegetarian relayed her interactions with her "meat eating" daughter at Thanksgiving.

"We don't interact too much with them [daughter and her husband] as far as food is concerned . . . She said to me Are you going to make a turkey?' 'No' I said . . . 'Oh well, then we're not coming.' That was very hurtful."

In general, the symbolic foods of holidays, such as turkey and lamb, were sources of tension between vegetarian and non vegetarian family members. Non vegetarian family members often decreased their social interactions with respondents due to them following a vegetarian diet. Despite the lack of support from most family members, respondents felt that their internal convictions about health or animal welfare issues and the support that they received from others helped them maintain a vegetarian diet.

Environmental resources - Environmental resources such as food products and societal attitudes were useful in maintaining vegetarian diets. Tofu, tempeh and seitan meat analogs allowed respondents to satisfy their cravings

for meat or cheese and participate in traditional food events without compromising their diets. One 45-year-old woman reported:

"There's so many new products. My daughter doesn't have to feel strange at school, you know there are tofu hot dogs and vegetarian burgers."

Respondents acknowledged that analogs were expensive and they often only used them for socially significant or symbolic occasions such as when serving food to company or preparing special meals. They expressed concern about the trade-off between the convenience of new prepared vegetarian food items and their price. Respondents reported that new vegetarian food products were not only more accessible in stores, but that restaurants were also more accommodating by offering vegetarian selections and preparing special vegetarian dishes upon request. Following a vegetarian diet while travelling continued to be a challenge because of the lack of acceptable vegetarian food choices in many places.

Many respondents expressed some support for the idea that vegetarianism was a current fad and was "in vogue," especially among adolescents. A 53-year-old, 25-year lacto-- vegetarian expressed her feelings regarding other people's views of vegetarians.

"Now everyone is aware of the health benefits. It's much easier now to go say to a restaurant or someone's house even and get away with not eating meat . . . it's so easy now. Well any restaurant has vegetarian selections and [in] all the popular press you find articles, why milk and meat and eggs and everything else is bad for you. It's almost gone mainstream now . . . it's only gotten easier and easier."

The interconnected aspects of personal factors, social networks and environmental resources aided respondents in changing from a traditional meat-- based diet to a vegetarian diet and in maintaining their vegetarian diets once they changed.

DISCUSSION

To maintain a vegetarian diet over time, social networks, personal factors and environmental resources were vital. Support provided by social networks (24,40) was especially important for the maintenance of a vegetarian diet in this group of socially-connected vegetarians. The majority of respondents in this study belonged to a vegetarian group, had a vegetarian friend, or belonged to a group supporting vegetarianism, similar to findings from previous studies (20,41). Whether the groups were explicitly vegetarian based or in which a vegetarian diet was one of several linked goals, they provided a social network (24) that supported the maintenance of vegetarian diets through instrumental support about new products and food preparation techniques, expressive support by sharing ideas and challenges and social control by defining "acceptable" eating practices and behaviours.

Instrumental support took the form of shared recipes, shared meals, shopping tips and solutions to the practical problems of eating a vegetarian diet. Expressive support provided by vegetarian-related groups and friends provided an accepting and comfortable atmosphere. This was important for respondents who experienced a lack of emotional support and challenges from family members. Vegetarian groups and knowing other vegetarians appears to be a crucial maintenance factor in creating a peer group that supports people's dietary change towards vegetarianism. Social control was provided by groups in the form of norms for being vegetarian. The feelings of guilt following dietary lapses described by some respondents provide some evidence for the operation of social control in practical terms. These reported lapses are consistent with the relapse and recycling through the change process posited by the stages of change model (22).

Personal skills were also gained from group contacts in the social network. The expressive and instrumental support received from groups increased the perceived self-efficacy of respondents (23). Self-efficacy took the form

of a feeling of competence to follow a vegetarian diet, part of which involved learning new skills in food purchasing and preparation from friends. In addition to the strengthening of cooking skills, maintenance of a healthy weight and positive health outcomes aided respondents' maintenance of vegetarian diets. Information about positive health aspects, as well as the ethical and environmental aspects of vegetarianism assisted people who wanted to maintain a vegetarian diet.

Environmental resources that enhanced maintenance included increased accessibility of vegetarian food products and a greater perceived social acceptance of vegetarianism. Environmental resources are one of a triad of individual, behavioural and environmental factors in social cognitive theory that interact reciprocally to maintain a behaviour (23). Respondents in this study were able to find an accepting environment in this Eastern North American metropolitan area, but environmental resources might be limited in other settings.

Although many respondents perceived an increased social acceptance of vegetarianism, their diets were still points of conflict within their families. Lack of family support made greater perceived environmental acceptance for vegetarianism more important for many respondents. The increased societal acceptance of vegetarianism reinforces the findings of other studies (42,43).

Respondents described an increase in the variety of, and accessibility to, vegetarian food products in the marketplace and restaurants. Similar to other analyses of the food choice process (44), respondents described a trade off between time, convenience and cost. Despite the expense of meat analogs and other vegetarian food items, new vegetarian food products were seen as assets that were drawn upon as resources in maintaining their vegetarian diets.

This in-depth qualitative study identified the importance of the interconnected aspects of social networks, personal factors and environmental resources in maintaining vegetarian diets. The depth of contact and the understanding of respondent perspectives made possible by the use of an interpretive approach was successful in obtaining an abundance of information about the psychosocial and environmental influences affecting the maintenance of a vegetarian diet and increased our understanding of how dietary change is maintained. These methods were effective in studying vegetarians who are often a small and frequently "invisible" group in society.

It should be noted that the 19 study respondents were a non-random sample of which the majority were middle to upper-middle class women in a metropolitan area in Western New York State. Although a diverse sample was recruited, due to the nature of snowball sampling, the respondents were interconnected. These respondents were also highly connected to vegetarian groups or other community groups that supported a vegetarian lifestyle. These characteristics of the participants suggest that the findings may not be generalized to all vegetarians, for example, those who are vegetarian for religious reasons or those who are not well connected to community groups.

CONCLUSIONS AND RECOMMENDATIONS

As society becomes more accepting of vegetarianism (12,42), dietitians will see an increase in the number of people following vegetarian diets. In order to help people maintain healthful vegetarian diets, dietitians need to be aware of influential social and environmental factors. Dietitians can benefit from recognizing the role that various groups provide in maintaining dietary change. To assist in maintaining a vegetarian diet, people may benefit from being encouraged to join vegetarian-related groups that accept a wide range of dietary practices. Groups may be designed to offer instrumental support, such as cooking techniques and strategies for eating at social events, as well as expressive support, such as sharing problems and struggles. Dietitians should be aware that many people may face discouragement from family members after adopting a vegetarian diet. Providing clients with strategies and support to deal with unsupportive family members can help people maintain vegetarian diets.

The use of an interpretivist approach and qualitative methods was useful in determining crucial maintenance factors for a vegetarian diet. Information from this study can assist dietitians in developing strategies to help people successfully maintain healthful vegetarian diets. Further research is needed to determine if instrumental or expressive support is more important in helping people maintain a vegetarian diet. In addition, the role of groups in maintaining dietary changes other than vegetarianism needs to be further investigated.

Acknowledgements

The authors would like to thank Dr. Deborah Trumbull for her methodological advice on this project.

1 Partial support for this research was provided by the Division of Nutritional Sciences, Cornell University.

References

1. Health and Welfare Canada. Canada's food guide to healthy eating. Ottawa: Ministry of Supply and Services Canada; 1992. 2. Food pyramid guide. Washington, DC: US Dept of Agriculture's

Human Nutrition Information Service; 1992:1-28.

3. Action towards healthy eating. . . Canada's guidelines for healthy eating. Ottawa: Ministry of National Health and Welfare; 1990. Cat. No.; H39-166/1990E.

4. Healthy people 2000: National health promotion and disease prevention objectives. Washington, DC: US Dept of Health and Human Services, Public Health Service; 1990. DHHS (PHS) publication 9150212. 5. Heimendinger J, VanDuyn MAS. Dietary behavior change: The challenge of recasting the role of fruits and vegetables in the American diet. *Am J Clin Nutr.* 1995; 61 (suppl.):1397S-4001S. 6. American Dietetic Association. Position of the American Dietetic Association: Vegetarian diets. *J Am Diet Assoc.* 1997; 97:1317-1321. 7. Dietitians of Canada. Celebrating the pleasure of vegetarian eating. Dietitians of Canada Web site

http://www.dietitians.ca/eatwell/english/factsheets/e1995_02.html accessed Feb 16/1998.

8. Snowdon DA, Phillips RL, Fraser GE. Meat consumption and fatal

ischemic heart disease. *Prev Med* 1984; 13: 490-500. 9. Phillips RL, Garfinkle L, Kuzma JW, et al. Mortality among California Seventh-Day Adventists. *J Nat Cancer Inst.* 1980; 65:1097-1107. 10. Campbell TC, Chen J. Diet and chronic degenerative diseases:

perspectives from China. *Am J Clin Nutr.* 1994; 59:1153S-1161S. 11. Omish D, Brown SE, Scher vitz LW, et al. Can lifestyle changes reverse coronary heart disease: *Lancet.* 1990; 336: 129-133. 12. National Restaurant Association. Interest in eating vegetarian foods at restaurants: A Gallup Poll. Washington, DC: Research Department: National Restaurant Association, June 1991.

13. Scott B. The Vegetarian Resource Group 1991 survey results. *Vegetarian Journal* 1991; 10(6):14-7.

14. Jabs J, Devine CM, Sobal J. A model of the process of adopting vegetarian diets: Health Vegetarians and Ethical Vegetarians. *J Nutr Educ.* 1998; 30 in press.

15. Fischler C. Food habits, social change and the nature/culture dilemma. *Soc Sci Information*. 1980;19:937-53.
16. Levenstein H. *Paradox of plenty*. New York: Oxford University Press, 1993.
17. Gvion-Rosenberg L. Why do vegetarian restaurants serve hamburgers? Toward an understanding of cuisine. *Semiotic*. 1990; 80:1-2, 61-79.
18. ABI/Inform [Bibliographic database], [on-line]. (1985-). Ann Arbor, MI: University Microfilms International. (1997, January 9).
19. Beardsworth AD, Keil ET. Health-related beliefs and dietary practices among vegetarians and vegans: A qualitative study. *Health Educ J*. 1991; 50:38-42.
20. Dwyer JT, Kandel RF, Mayer LD, et al. The "new" vegetarians. *J Am Diet Assoc*. 1974; 64:376-82.
21. Lustgarden S. Persuasive examples. *Vegetarian times*. 1993; Oct (194):18.
22. Prochaska JO, DiClemente CC, Norcross JC. In search of how people change: applications to addictive behavior. *Am Psych*. 1992; 47: 1102-1114.
23. Bandura A. *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall, 1986.
24. McIntosh WA, Shifflett PA, Picou JS. *Social support, stressful events, strain, dietary intake and the elderly*. *Medical Care* 1989;27:140-153.
25. Jabs J. *Vegetarianism: A qualitative investigation of adoption, maintenance, self-identity, and interpersonal interactions*. Ithaca, NY: Cornell University; 1997. Unpublished Thesis.
26. Achterberg CL, Shepherd SKI. The components and use of qualitative research. In: Monsen ER, ed. *Research: Successful Approaches*. American Dietetic Association; 1992:82-99.
27. Lincoln YS, Guba EG. *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications, 1985.
28. Patton MQ. *Qualitative Evaluation Methods*. Beverly Hills, CA: Sage Publications, 1990.
29. Beardsworth AD, Keil ET. Vegetarianism, veganism and meat avoidance: Recent trends and findings. *Brit Food J*. 1991; 93(4):19-24.
30. Beardsworth AD, Keil ET. Foodways in flux: From gastro-anomy to menu pluralism? *Brit Food J*. 1992; 94(7):20-5.
31. Beardsworth AD, Keil ET. The vegetarian option: Varieties, conversions, motives and careers. *Sociol Rev*. 1992; 40:253-93.
32. Beardsworth A, Keil T. *Sociology on the menu: An invitation to the study of food and society*. New York: Routledge, 1997.
33. Maurer D. *Becoming a vegetarian: Learning a food practice and philosophy*. Johnson City, TN: East Tennessee State University; 1989. Unpublished Thesis.
34. Coleman JS. Relational analysis: The study of social organizations with survey methods. In: Denzin NK, ed. *Sociological methods: A sourcebook*. London: Butterworths, 1970:115-26.
35. Spradley JP. *The ethnographic interview*. New York: Holt, Rinehart & Winston, 1979.
36. Glaser BG, Strauss AL. *The discovery of grounded theory*. New York: Aldine Publishing, 1967.
37. Lofland J, Lofland L. *Analyzing social settings: A guide to qualitative observation and analysis*. Belmont, CA: Wadsworth Publishing, 1984.
38. Shepherd S., Achterberg CL. Qualitative research methodology: Data collection, analysis, interpretation, and verification. In: Monsen ER, ed. *Research: Successful approaches*. American Dietetic Association; 1992:82-99.

39. Guba EG, Lincoln YS. Fourth generation evaluation. Newborn Park, CA: Sage Publications, 1989.

40. Parham ES. Enhancing social support in weight loss management

groups. J Am Diet Assoc. 1993; 93:1152-6. 41. Freeland-Graves JH, Greninger SA, Young RK. A demographic and social profile of age and sex matched vegetarians and non-vegetarians. J Am Diet Assoc. 1986; 86:907-12.

42. Belasco WJ. Appetite for change. Ithaca, NY: Cornell University Press, 1993.

43. Stahler C. How many vegetarians are there? Vegetarian Journal. 1994; 13(4):6-9.30.

44. Furst T, Connors M, Bisogni CA, et al. Food choice: A conceptual model of the process. Appetite. 1996; 26:247-66.

JENNIFER JABS, MS, CAROL M. DEVINE, PhD, RD, JEFFERY SOBAL, PhD., MPH, Division of Nutritional Sciences, Cornell University, Ithaca, New York, US

Copyright Dietitians of Canada Winter 1998

Provided by ProQuest Information and Learning Company. All rights Reserved