Appetite 65 (2013) 139–144

Contents lists available at SciVerse ScienceDirect

Appetite

journal homepage: www.elsevier.com/locate/appet

Research report

Differences between health and ethical vegetarians. Strength of conviction, nutrition knowledge, dietary restriction, and duration of adherence ☆

Sarah R. Hoffman [a,*], Sarah F. Stallings [a], Raymond C. Bessinger [a], Gary T. Brooks [b]

[a] Department of Human Nutrition, Winthrop University, 302 Dalton Hall, Rock Hill, SC 29733, USA
[b] Department of Mathematics, Winthrop University, 142 Bancroft Hall, Rock Hill, SC 29733, USA

ARTICLE INFO

Article history:
Received 25 October 2012
Received in revised form 1 February 2013
Accepted 7 February 2013
Available online 15 February 2013

Keywords:
Conviction
Dietary restriction
Ethical vegetarian
Health vegetarian
Motivation
Nutrition knowledge
Veganism
Vegetarianism

ABSTRACT

Little research has been published concerning the differences between health oriented and ethically oriented vegetarians. The present study compared differences in conviction, nutrition knowledge, dietary restriction, and duration of adherence to vegetarianism between the two groups. Subjects completed an online survey and were grouped by original reason for becoming vegetarian ($n = 292$, 58 health, 234 ethical), and current reason for remaining vegetarian ($n = 281$, 49 health, 232 ethical). Whether grouped by current or original motivation, ethical vegetarians scored higher on the conviction instrument than health vegetarians and exhibited somewhat greater dietary restriction (significant when grouped by current motivation) and had been vegetarian for longer (significant when grouped by original motivation). Nutrition knowledge did not differ between the two groups. The results suggest that ethical vegetarians could experience stronger feelings of conviction and consume fewer animal products than health vegetarians, and may remain vegetarian longer. More research is necessary to understand how vegetarians' eating behaviors are influenced by their motivational profiles.

Introduction

Vegetarians define themselves by what they do not consume, differentiating themselves by rejecting a widespread social norm (Back & Glasgow, 1981). The practice of vegetarianism shares themes with religion and may be described as "quasi-religious" (Hamilton, 2000). It is estimated that 6–8 million (3%) US adults follow a vegetarian diet and that one-quarter to one-third of vegetarians are vegan (The Vegetarian Resource Group, 2009; Vegetarian Times, 2008). Most US vegetarians are young, female, concerned with animal welfare and/or health, and have been vegetarian for more than 10 years (Vegetarian Times, 2008).

For the present study, subjects who abstained from meat, poultry, and fish/seafood were considered "vegetarian." Participants who also abstained from eggs, dairy, and honey were considered "vegan." Those who abstained from all but honey were considered "vegan except for honey." All vegans are vegetarians but not all vegetarians are vegan. "Vegetarian(s)" is used collectively throughout this study and includes vegans.

A typical finding of qualitative studies on vegetarianism is that there are two primary motivations for the diet: ethical concerns and health considerations (Fox & Ward, 2008; Jabs, Devine, & Sobal, 1998; Janda & Trocchia, 2001; Rozin, Markwith, & Stoess, 1997). The purpose of this study was to examine the differences between health and ethical vegetarians by comparing conviction, nutrition knowledge, dietary restriction, and years as vegetarian between the two groups. Since ethical motivations have been found to be more effective than health motivations for implementing dietary change (Ogden, Karim, Choudry, & Brown, 2007), and previous literature suggests that ethical vegetarians show greater dietary restriction than health vegetarians (Rozin et al., 1997; Ruby, 2012), it was hypothesized that ethical vegetarians would score higher on all areas of the questionnaire.

Methods

Recruitment

Online social media marketing and paid advertising were used to recruit subjects. Unique advertisements were created for Face-

☆ *Acknowledgments*: Primary investigator is an ethical vegetarian. Appreciation is extended to The Vegetarian Resource Group for their assistance during the survey development process.

* Corresponding author.
E-mail addresses: srhoffma@live.unc.edu, hoffmans2@winthrop.edu (S.R. Hoffman).

0195-6663/$ - see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.appet.2013.02.009

book and Google, and links were published to online communities concerning vegetarianism.

The Facebook advertisement (ad) targeted English speaking users who lived in the United States, were at least 18 years old, whose Facebook "Likes and Interests" included "vegetarian," "vegetarianism," "vegan," or "veganism." The estimated reach was 211,000 people. The ad received 370,105 impressions and 553 clicks, a Click-Through Rate (CTR) of 0.149%, with an average cost per click (CPC) of $0.27. The Facebook ad ran from March 31, 2011 to May 1, 2011 and was responsible for 388 survey responses. In addition to paid advertising, a post was made to the Wall of a popular Facebook Community page for vegetarianism on Friday, April 1, 2011. The page had approximately 130,000 international followers and has since been taken down. Six survey responses were gathered through the posted link.

A Google AdWords campaign was created, targeting English speaking computer and tablet users in the United States. The ad ran from April 1 to May 1, 2011, appearing above search results for keywords related to vegetarianism, and was also placed on websites thought to be relevant to the target population. Search results accounted for 13,908 impressions and 25 clicks (0.18% CTR, $0.43 Average CPC), Managed Placements accounted for 719 impressions and zero clicks. The Google ad was responsible for six survey responses.

VeggieBoards (VB) is an online community for vegetarians with over 48,000 members and 2.8 million posts (at time of study;

Table 1
Characteristics by initial (original) reason for becoming vegetarian.

	Ethical		Health		Other		All	
	n	%	*n*	%	*n*	%	*n*	%
Age								
18–19	35	15.0	6	10.3	8	40.0	49	15.7
20–29	99	42.3	28	48.3	7	35.0	134	42.9
30–39	34	14.5	9	15.5	2	10.0	45	14.4
40–49	41	17.5	7	12.1	1	5.0	49	15.7
50–59	21	9.0	4	6.9	1	5.0	26	8.3
60–69	4	1.7	4	6.9	1	5.0	9	2.9
70 or older	0	0.0	0	0.0	0	0.0	0	0.0
	234	100	58	100	20	100	312	100
Sex/gender								
Male	34	14.5	11	19.0	3	15.0	48	15.4
Female	200	85.5	47	81.0	17	85.0	264	84.6
Mean years vegetarian	10.0		5.9		11.7		9.3	
Education								
<High school	2	0.9	2	3.4	0	0.0	4	1.3
High school or equivalent	23	9.8	5	8.6	2	10.0	30	9.6
Some college	79	33.8	20	34.5	10	50.0	109	34.9
Associate's	22	9.4	9	15.5	2	10.0	33	10.6
Bachelor's	54	23.1	12	20.7	5	25.0	71	22.8
Graduate study	23	9.8	5	8.6	0	0.0	28	9.0
Graduate degree	31	13.2	5	8.6	1	5.0	37	11.9
	234	100	58	100	20	100	312	100
Race/ethnicity								
African American	3	1.3	2	3.4	0	0.0	5	1.6
Native American	3	1.3	1	1.7	0	0.0	4	1.3
Asian/Pacific Islander	3	1.3	1	1.7	1	5.0	5	1.6
Hispanic	7	3.0	5	8.6	1	5.0	13	4.2
White/Caucasian	206	88.0	47	81.0	17	85.0	270	86.5
Other/decline to answer	12	5.1	2	3.4	1	5.0	15	4.8
	234	100	58	100	20	100	312	100
Household gross annual income								
<$25,000	66	28.2	12	20.7	9	45.0	87	27.9
$25,000–$49,999	66	28.2	22	37.9	2	10.0	90	28.8
$50,000–$74,999	46	19.7	6	10.3	6	30.0	58	18.6
$75,000–$99,999	24	10.3	9	15.5	1	5.0	34	10.9
$100,000 or more	32	13.7	9	15.5	2	10.0	43	13.8
	234	100	58	100	20	100	312	100
Diet								
Vegetarian	109	46.6	29	50.0	16	80.0	154	49.4
Vegan (Total)	125	53.4	29	50.0	4	20.0	158	50.6
Vegan (never consume honey)	*93*	*39.7*	*16*	*27.6*	*2*	*10.0*	*111*	*35.6*
Vegan (may consume honey)	*32*	*13.7*	*13*	*22.4*	*2*	*10.0*	*47*	*15.1*

Italicized cells indicate values for vegan subtypes.

www.veggieboards.com). Permission was obtained from the forum administrator prior to posting the survey link on April 5, 2011. The thread gathered 567 views, 17 replies, and 60 survey responses.

A "Share with Friends" link was featured on the final page of the instrument along with a Facebook "Recommend" button. The "Recommend" button was clicked 47 times. Sharing and recommending were responsible for 14 responses.

Instrumentation/protocols

A questionnaire was created in SurveyMonkey (SurveyMonkey.com, LLC, Palo Alto, California, USA) and included three sections: conviction, nutrition knowledge, and demographics.

A sub-questionnaire was developed by the current researcher to measure conviction in vegetarians by exploring the three components of religiosity that influence development of religious identity: cognition, affect, and behavior (Cornwall, Albrecht, Cunningham, & Pitcher, 1986). While religiosity is perhaps the more appropriate term for the variable being measured by this instrument, it was assumed that "conviction" carries fewer connotations while still adequately conveying the desired concepts. Conviction is defined as "the quality of showing that one is firmly convinced of what one believes or says" (Oxford Dictionaries., 2011). The content of the questionnaire was extrapolated from the Dimensions of Religiosity Scale, initially developed and found to be reliable for research involving Mormon subjects (Cornwall et al., 1986). The original instrument contained 31 items and three different answer scales, including two five-point Likert scales, exploring cognition, affect, and behavior for two modes of religious involvement: personal mode and institutional mode. For the sake of brevity, the instrument for this study was 10 items long, employing a single, seven-point Likert scale throughout (1 = Strongly Disagree, 2 = Disagree, 3 = Disagree Slightly, 4 = Neither Agree nor Disagree, 5 = Agree Slightly, 6 = Agree, and 7 = Strongly Agree). The questionnaire excluded items exploring the institutional mode of religious involvement since this may not be relevant to vegetarianism, especially for health vegetarianism. Two questions assessed knowing (cognition), three questions assessed feeling (affect), and five questions assessed doing (behavior). Individual scores were determined by calculating the average for the entire instrument (min = 1, max = 7).

Six items were adapted from the previously validated General Nutrition Knowledge Questionnaire for Adults (Parmenter & Wardle, 1999) to create four items (resulting in a total of 22 individual questions) assessing awareness of basic nutrition concepts relating to micro- and macro-nutrients and energy. Completion of the questionnaire involved placing food items into appropriate categories (e.g., "Please select the most appropriate category for each food item: Carbohydrate, Fat, Protein, Unsure") and ranking food items (e.g., "Which of the following has the MOST calories (energy) per gram (unit of weight)? Choose one.") Non-vegan foods were eliminated and/or replaced with nutritionally similar vegan options. An 8-itemed section dedicated to vegetarian nutrition was also developed. Questions for this section were based on educational material written by Registered Dietitians, publicly available on the Vegetarian Resource Group (VRG) website (www.vrg.org). Such information is widely available through other popular vegetarian organization websites. The complete nutrition section consisted of 30 unique items (22 general, 8 vegetarian). Scoring was completed by calculating the percentage correct for the entire instrument ($[n/30] * 100$). Subjects were asked to provide information on all health or nutrition related credentials they possessed at the start of the questionnaire.

Dietary restriction was measured by asking subjects to select all the foods that they "never" eat (dairy products, eggs, and/or honey). One point was given for each item beyond meat, poultry, fish/seafood (min = 0, max = 3).

Length of time respondents had been vegetarian was assessed by asking "For how long have you been a vegetarian (excluded all meat, poultry, fish/seafood from your diet)? If you are unsure of months, please round up to the nearest year." Responses for this item were collected via numerical textbox for years and months.

In order to place subjects into categories (i.e., health, ethical, or other), two multiple choice items were created: "The main reason I became a vegetarian was because of (check only one)," "The main reason I am (still) a vegetarian is because of (check only one)." Fourteen options were given in addition to the option "other" which included a mandatory textbox. Fox and Ward (2008) found that health vegetarians tend to be internally focused (i.e., "I eat this way for myself") while ethical vegetarians are externally focused (i.e., "I eat this way for the animals") and concerned with the spiritual and philosophical implications of eating. Given this and similar findings in other studies (Ruby, 2012), it was determined that the following selections could be designated as ethical for their external focuses: "Animal rights," "Ethics," "The environment," "My religion," "My spiritual beliefs," or "World hunger". Although religion and spirituality may not be externally focused, it was assumed that respondents selecting "My religion" and "My spiritual beliefs" followed a vegetarian diet due to their spiritual/religious perspectives on the *ethics* of meat consumption and were therefore ethical vegetarians.

Subjects were considered health vegetarians if they selected "Health" or "Weight loss." "I have never been a vegetarian" resulted in exclusion from the analysis. If subjects checked "other" and stated only one reason, they were placed into the most appropriate category for their response. Subjects who entered reasons from both categories into the textbox were excluded from the analysis.

Participants were informed of their rights and confidentiality, as well as the general purpose of the study (without revealing that health and ethical vegetarians were being compared). The study was approved by the University's Institutional Review Board (IRB).

Analysis

All statistical tests were conducted using SAS 9.2 (SAS Institute, Cary, NC, USA). All distributions were tested for normality via skewness, kurtosis, Kolmogorov–Smirnov test (K–S test), histograms, and *Q*–*Q* plots. Cronbach's alpha was calculated for the Conviction and Nutrition Knowledge instruments. Correlation procedures (Pearson's r and Spearman's rho) were carried out to explore relationships between dependent variables. Parametric (t-test) and nonparametric (Wilcoxon–Mann–Whitney) tests were performed to compare health and ethical vegetarians. Results for Wilcoxon–Mann–Whitney and Spearman's rho were similar to results under parametric assumptions. Significance was defined as $\alpha = .05$ for all tests.

Results

Collection took place from Friday, April 1, 2011 through Thursday, May 5, 2011. There were 474 initiated surveys. Incomplete surveys accounted for 96 exclusions. Of the 378 completed surveys, 66 were excluded for stating more than one reason for becoming vegetarian, responding from an IP address outside of the US without giving a legitimate US zip code to demonstrate residency, or failure to select all three flesh foods (i.e., meat, poultry, fish/seafood) when asked what they "never" eat. One participant was excluded for choosing "ethics" as their primary reason for becoming vegetarian while selecting "I was born and/or raised vegetarian" as their current reason. The present analysis included 312 surveys. Sample characteristics are presented in Table 1.

A majority of the respondents expressed ethical reasons for becoming vegetarian (see Table 2). Reason retention was greater among ethical vegetarians than health vegetarians (see Table 3), with ethical vegetarians maintaining their ethical orientation more often than health vegetarians retaining their health orientation.

Mean scores by current and original reasons for becoming/remaining vegetarian are presented alongside *t*-test results in Table 4. Because the alternative hypotheses set at the beginning of the present study were directional in nature, one-tailed *p*-values must be used to reject or accept the hypotheses. The probabilities reported in Table 4 are for two-sided tests and can be converted to one-tailed values by dividing each value by two.

Conviction: The conviction instrument showed high reliability (Cronbach's alpha = .82, $n = 312$). Ethical vegetarians scored significantly higher on the conviction instrument than health vegetarians whether categorized by original reason (6.15 vs 5.81, p(one-tailed) = .0009) or current motivation (6.18 vs 5.71, p(one-tailed) = .0005) for becoming vegetarian. Mean conviction scores by question are presented in Table 5.

Nutrition knowledge: The nutrition knowledge instrument showed acceptable reliability (Cronbach's alpha = .74, $n = 312$). There were no differences in overall nutrition knowledge scores between ethical and health vegetarians whether grouped by original or current reason/motivation. Ethical and health vegetarians scored similarly on the vegetarian-specific section whether grouped by original (.67 vs .64) or current (.67 vs .64) motivation; these differences were not statistically significant.

Dietary restriction: Dietary restriction was not significantly greater in vegetarians who originally became vegetarian for ethical reasons. However, dietary restriction was significantly greater in ethical vegetarians when categorized by current motivation (1.66 vs 1.31, p(one-tailed) = .04495).

Duration (*years vegetarian*): Subjects who originally became vegetarian for ethical reasons had been vegetarian for significantly longer than subjects who became vegetarian for health related reasons (9.97 vs 5.9 mean years, p(one-tailed) = .00115). Those who selected ethical reasons as their current motivation for remaining vegetarian had not been vegetarian for significantly longer than those citing health related reasons as their current motivation.

Correlation: Conviction was significantly correlated with dietary restriction ($r = .26$, $r^2 = .0676$, $p < .0001$) and years vegetarian ($r = .15$, $r^2 = .0225$, $p = .0087$). A significant relationship was also found between nutrition knowledge and dietary restriction ($r = .32$, $r^2 = .1024$, $p < .0001$). While these relationships were significant, the coefficients of determination (r^2) were small.

Discussion

Enhanced understanding of the implications of health and ethical motivations for vegetarianism is an avenue towards appreciation for the diversity within the vegetarian community, and may enable dietitians to provide more individualized service and food marketers to tap more powerfully into a growing market. This study is unique for its relatively large sample size, specific attention to the differences between health and ethical vegetarians, and its use of an instrument to assess conviction/religiosity. It was found that ethical vegetarians demonstrated stronger feelings of conviction and consumed fewer animal products than health vegetarians, and had been vegetarian for longer despite an observed lack of dissimilarity in nutrition knowledge.

The current research also demonstrates that a large number of vegans and vegetarians, especially young, ethical vegetarians, can be quickly and effectively reached using the Internet, particularly in a social networking context. This is noteworthy considering that vegetarians only compose 3% of the adult population, and vegans less than 1% (The Vegetarian Resource Group, 2009; Vegetarian Times, 2008).

The Facebook ad was the most effective form of recruitment, accounting for majority of the surveys included in the analysis. The ad featured a photo of a kiwi with the headline "Make a Difference" followed by "Vegetarian? Vegan? Don't eat meat? Participate in a research study: Anonymous, 20 questions, about 10 min". No compensation was offered. The content of our ad and the lack of incentive could be the cause of the high number of responses from ethically oriented vegetarians.

In the present study, 16 of 58 subjects who became vegetarian for health reasons listed ethical reasons as their current motivation while 12 of 234 ethical vegetarians became health vegetarians. It is possible that subjects who started out as health vegetarians recruited moral/ethical reasons for their vegetarianism over time as they learned more about vegetarianism through literature (e.g., magazines, cookbooks) and interactions with other vegetarians.

While ethical vegetarians were found to have higher scores on the conviction instrument, and this difference was statistically significant, the difference may be summarized as "*slightly more than Agree* versus *slightly less than Agree but still more than Agree Slightly*". This similarity of conviction scores between ethical and health vegetarians may be explained by the possibility that vegetarians willing to complete the survey without compensation may have stronger conviction than vegetarians unwilling to complete the survey, regardless of health/ethical orientation. It remains unknown whether ethical vegetarians truly experience stronger feelings of conviction, and whether it is of any practical significance if they do.

While ethical vegetarians showed greater dietary restriction and this difference was statistically significant when subjects were grouped by current motivation, the difference is of little practical significance given that the difference is not at least 1 and our scale is for number of animal products never consumed. Also, when grouped by original motivation, health and ethical vegetarians are composed of similar proportions of vegans and vegetarians (see Table 1). Conviction was associated with dietary restriction in both health and ethical vegetarians in the present study (data for individual groups are not shown) and this may account for the higher than usual prevalence of veganism in both groups.

Stahler (2010) found that ethical vegetarians are not more likely than health vegetarians to remain vegetarian over a three year

Table 2
Frequency of initial (original) reasons for becoming vegetarian.

Ethical	
Animal rights	123
Ethics	87
Religion/spiritual beliefs	11
The environment	10
Other – ethical	3
Total	234
Health	
Health	45
Weight loss	11
Other – health	2
Total	58
Other	
Taste	8
Family/friends	7
Born and/or raised vegetarian	3
Politics	1
Saving money	1
Total	20

Table 3
Reason retention in vegetarians. Bold indicates original reason/motivation.

Original reason	Current reason	*n*	Retention
Ethical *n* = 234	**Ethical**	**216**	92.3%
	Health	12	
	Other	6	
Health *n* = 58	Ethical	16	63.8%
	Health	**37**	
	Other	5	
Other *n* = 20	Ethical	11	25.0%
	Health	4	
	Other	**5**	

period. In the present study, ethical vegetarians had been vegetarian for longer when grouped by original reason for becoming vegetarian. Since vegetarians were not followed prospectively, it cannot be determined whether subjects/participants quit being vegetarian for a short time and chose to ignore that period when reporting how long they had been vegetarian. Conviction was significantly correlated with years vegetarian and thus subjects may have been attracted who had strong conviction and, therefore, a long duration of vegetarianism or vice versa.

The present study was cross-sectional and dependent on self-reported data and may be vulnerable to response biases. Respondents were predominantly young, Caucasian, and female, limiting the generalizability of the findings. Location threat is a known issue with online surveys since there is no way to control respondents' surroundings/environment. This threat must be accepted if a large number of vegetarians across a wide geographical area is to be inexpensively and efficiently reached.

This study utilized crude classification of respondents (health vs ethical vegetarians). It is recognized that the assumptions underlying certain placements may be faulty, and that it may not be possible to entirely separate health from ethics. Some health vegetarians may choose to take care of their bodies for the sake of dependents and are thus externally focused, requiring placement in the ethical category. Similarly, environmentally concerned vegetarians may perceive themselves as connected to the environment in such a way that they choose to take care of the environment for their own benefit and are actually internally focused/health vegetarians.

Given its uniqueness and limitations, it is necessary to replicate this study on a more diverse group of respondents to confirm/strengthen these findings. While a small difference in dietary restriction was observed, it remains open to investigation whether dietary quality differs between the two groups. It also remains unknown whether orientation (health or ethical) has any influence on consumer behavior (e.g., whether ethical vegetarians purchase and consume fewer faux meat products than health vegetarians). Another point of concern is whether the two groups differ in history or likelihood of experiencing an eating disorder. In order to address these questions meaningfully it will be necessary to refine our definitions of "health vegetarian" and "ethical vegetarian" and further explore the relationship between dietary consumption and identity in vegetarians. This might be achieved in part by development and validation of an instrument that measures conviction in this population, using the instrument developed for this study as a starting point.

Table 4
t-Test results for the differences between ethical and health vegetarians.

	Ethical *n* = 234				Health *n* = 58				*t*	*p*	*r*	r^2	DF
	Mean	95% CL		SD	Mean	95% CL		SD					
Original reason													
Conviction	6.15	6.06	6.25	0.74	5.81	5.61	6.02	0.78	3.15	0.002	0.18	0.03	290
Nutrition Knowledge	0.76	0.74	0.78	0.13	0.75	0.71	0.78	0.13	0.73	0.468	0.04	0.00	
Restriction	1.59	1.41	1.76	1.33	1.47	1.15	1.79	1.22	0.62	0.534	0.04	0.00	
Years	9.97	8.79	11.16	9.23	5.90	3.78	8.02	8.07	3.08	0.002	0.18	0.03	
	Ethical *n* = 232				Health *n* = 49				*t*	*p*	*r*	r^2	DF
	Mean	95% CL		SD	Mean	95% CL		SD					
Current reason													
Conviction	6.18	6.09	6.28	0.70	5.71	5.46	5.97	0.89	3.47	0.001	0.41	0.16	61
Nutrition knowledge	0.76	0.74	0.78	0.14	0.75	0.72	0.79	0.12	0.33	0.741	0.02	0.00	279
Restriction	1.66	1.48	1.83	1.34	1.31	0.98	1.63	1.14	1.70	0.090	0.10	0.01	
Years	9.68	8.49	10.87	9.22	7.44	4.75	10.12	9.35	1.54	0.124	0.09	0.01	

Table 5
Mean conviction scores by question for subjects as grouped by original reason for becoming vegetarian.

MEAN conviction scores (1 = Strongly Disagree; 4 = Neutral; 7 = Strongly Agree)	Original reason		
	Ethical	Health	Absolute difference
I am openly vegetarian/vegan; I do not hide my vegetarianism from anyone	6.72	6.81	0.09
My vegetarianism is an important aspect of my personality/character	6.47	6.05	0.41
My vegetarianism/veganism is an important part of my life	6.68	6.48	0.19
I have no doubts that vegetarianism/veganism is right for me	6.74	6.67	0.06
I have no doubts that vegetarianism/veganism is right for everyone	5.25	4.71	0.55
I am willing to sacrifice anything to remain vegetarian and/or vegan	5.41	4.66	0.76
I encourage others to become vegetarian and/or vegan	5.79	5.33	0.47
I consider my vegetarianism/veganism when making important decisions in my life	6.18	5.74	0.43
I try to carry my vegetarianism/veganism into all my other dealings in life	5.74	5.40	0.34
I live a vegetarian and/or vegan life	6.58	6.26	0.32
	n = 234	*n* = 58	

References

Back, K., & Glasgow, M. (1981). Social networks and psychological conditions in diet preferences. Gourmets and vegetarians. *Basic and Applied Social Psychology, 2*(1), 1–9.

Cornwall, M., Albrecht, S. L., Cunningham, P. H., & Pitcher, B. L. (1986). The dimensions of religiosity. A conceptual model with an empirical test. *Review of Religious Research, 27*(3), 226–244.

Fox, N., & Ward, K. (2008). Health, ethics and environment. A qualitative study of vegetarian motivations. *Appetite, 50*(2–3), 422–429.

Hamilton, M. (2000). Eating ethically. "Spiritual" and "Quasi-religious" aspects of vegetarianism. *Journal of Contemporary Religion, 15*(1), 65–83.

Jabs, J., Devine, C. M., & Sobal, J. (1998). Model of the process of adopting vegetarian diets. Health vegetarians and ethical vegetarians. *Journal of Nutrition Education, 30*(4), 196–202.

Janda, S., & Trocchia, P. J. (2001). Vegetarianism. Toward a greater understanding. *Psychology and Marketing, 18*(12), 1205–1240.

Ogden, J., Karim, L., Choudry, A., & Brown, K. (2007). Understanding successful behaviour change. The role of intentions, attitudes to the target and motivations and the example of diet. *Health Education Research, 22*(3), 397–405.

Oxford Dictionaries. (2011). Conviction. <http://oxforddictionaries.com/definition/conviction> Retrieved 28.09.11.

Parmenter, K., & Wardle, J. (1999). Development of a general nutrition knowledge questionnaire for adults. *European Journal of Clinical Nutrition, 53*, 298–308.

Rozin, P., Markwith, M., & Stoess, C. (1997). Moralization and becoming a vegetarian. The transformation of preferences into values and the recruitment of disgust. *Psychological Science, 8*(2), 339–342.

Ruby, M. B. (2012). Vegetarianism. A blossoming field of study. *Appetite, 58*, 141–150.

Stahler, C. (2010). Do vegetarians and vegans stay vegetarian? The 2006–2009 vegetarian resource group survey. *Vegetarian Journal, 29*(4), 10–12. <http://www.vrg.org/journal/vj2010issue4/2010_issue4_retention_survey.php>.

The Vegetarian Resource Group (2009). How many vegetarians are there? *Vegetarian Journal*. <http://www.vrg.org/press/2009poll.htm> Retrieved 19.01.11.

Vegetarian Times (2008). Vegetarianism in America. *Vegetarian Times*. <http://www.vegetariantimes.com/features/archive_of_editorial/667> Retrieved 19.01.11.