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How empathic are vegan medical professionals compared to others? Leads from a paper–pencil-survey

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Abstract
The aim of this survey was to examine differences in personality profiles among 198 vegan ($n = 64$; 32.3%), vegetarian ($n = 78$; 39.4%) and omnivore ($n = 55$; 27.8%) medical professionals. Outcomes were motives for the nutritional approaches, WHO QoL-BREF, Big Five SOEP Inventory, Portraits Value Questionnaire, and Empathizing Scale. Regarding motives for particular diets, omnivores rated influence of guardians ($p < 0.001$), physical health ($p = 0.017$) and food taste ($p = 0.001$) as more and love of animals as less important ($p < 0.001$) than vegans and vegetarians. Vegans and vegetarians consumed less coffee ($p = 0.007$) and alcohol compared to omnivores ($p = 0.017$). The duration of adhering to a specific diet was significantly shorter in vegans. Data suggest that vegan medical professionals do not differ from vegetarians or omnivores regarding empathy, values or personality traits. Differences to a related internet sample were observed for a number of outcomes. Given the small sample size and potential selection bias through the specific subpopulation attending a plant-based nutrition conference, further studies are warranted to confirm these results. Particularly, potential reciprocities between empathy and individual nutritional choices deserve further attention.

Introduction

Motivations for adopting vegetarianism are manifold and often based on health, ethical, moral and cultural considerations [1–3]. Those for adopting veganism tend to be ethical–moral values along with ecological concerns [2–5].

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Previous studies report vegetarians as having higher empathy levels than omnivores [1, 6]. For medical professionals empathic behavior is shown to have positive influences on patients' coping abilities. Patients who feel understood by their health care providers are likely to be more satisfied than patients who don't; empathy can have a positive influence on healing in health conditions [7]. The absence of the aforementioned factors (besides stress, time pressure, prejudice towards the patient) negatively influence empathy in medical professionals [7]. However, it is unknown whether medical professionals' lifestyle choices are associated with their ability to be empathic (and/or vice versa). This study aimed to investigate differences in empathy among medical professionals who are vegans, vegetarians and omnivores.

Materials and methods

Survey participants

A paper–pencil questionnaire was handed out to all the 230 participants of the "VegMed 2013" conference on plant-based nutrition for medical professionals in Berlin,

Germany (NCT0205567a7). The same questionnaire was used in an anonymous online survey in 2014 [5].

Study measures/questionnaires

- Socioeconomic: gender, age, BMI, marital status, education.
- Eating habits, i.e. consumption of meat, fish, eggs, and/or dairy products.
- WHO Quality of Life-BREF (WHOQOL-BREF).
- Big Five SOEP Inventory.
- Portraits Value Questionnaire (21 Item-Version).
- Empathizing Scale (Short Form).
- 7-point Likert Scales for initial motives for nutritional choices.
- Luxury foods/drinks consumption; use of drugs; eating habits.

Data analysis and statistics

Survey-participants were categorized as vegans, vegetarians or omnivores on the basis of their self-reported eating habits. Socio-demographic characteristics were compared using univariate analyses of variance (ANOVAs) or Chi^2 tests. Univariate analyses of covariance (ANCOVAs) were used for analyzing group differences for all other outcomes. p values below 0.05 were regarded as significant; where analyses yielded significant group differences, Bonferroni-adjusted post-hoc tests were conducted to compare each group with the other two groups separately. All statistical analyses were performed using SPSS (release 20.0, IBM, Armonk, NY, USA). To compare outcomes of medical professionals with a reference group, the findings from this survey were compared to the results of the aforementioned online-survey by univariate ANCOVAs.

Results

Of the 198 (86.1% of $n = 230$) individuals who completed the survey, $n = 64$ (32.3%) classified themselves as vegans, $n = 78$ (39.4%) as vegetarians and $n = 55$ as omnivores (27.8%). Socioeconomic characteristics are shown in Table 1. Consumption of coffee and alcohol among omnivores was significantly higher compared to vegetarians or vegans. Vegans had started their diet more recently than vegetarians or omnivores (Table 1).

With regard to the initial motives for participants´ nutritional approaches, omnivores rated influence by their guardians ($p < 0.001$), physical health ($p = 0.017$) and food taste ($p = 0.001$) as more important, whereas 'love of animals' as less important ($p < 0.001$) than did vegans and vegetarians (Fig. 1). No other between-groups differences of statistical significance were observed (Appendix Table 1).

Compared to the internet sample [5], medical professionals had higher psychological and social quality of life. Medical professionals also scored higher on extraversion, compatibility, power/might, achievement, stimulation, tradition and benevolence. No differences between samples were observed in empathy (Appendix Table 2).

Discussion

This study is the first to examine differences in empathy between vegan and non-vegan medical professionals. Data show that there were no statistically significant differences in empathy between vegans, vegetarians and omnivore medical professionals. Notably, vegans here had started their diet more recently than vegetarians or omnivores, in line with earlier data. [5]

As for medical professionals, the data from this survey does not support the hypotheses that individuals adhering to a vegan diet have more compatible and open personalities, or more universalistic and less traditional values. Also, this data does not support the hypothesis that vegan medical professionals have a higher self-reported quality of life in comparison to omnivore or vegetarian medical professionals [8, 9].

Among medical professionals the results from this survey do not support any of the prevalent clichés/stereotypes on personality profiles of people adhering to specific forms of nutrition [10]. On the contrary, results suggest that among all three analyzed groups there is not much difference for almost all analyzed outcomes.

A notable difference between both omnivores and vegetarians on the one hand and vegans on the other hand seems to be the length of time that individuals have been following their forms of nutrition. This could be due to a number of reasons; for instance this might be because vegan/plant-based nutrition is a newer trend, or because it might be more difficult to implement than others, or it might simply be an artifact of this convenience sample. Moreover, some of the vegan survey participants are much likely former vegetarians who might have become more restrictive on animal-based foods recently and the other way round. Considering the fluidity of the analyzed categories, future studies in the field should try to further assess the initial motives for adopting vegetarian sub-diets.

Differences between groups regarding participants´ initial motives for the choice of nutritional approaches are in line with what one would expect, based on the societal fact, that in Western countries omnivore nutrition still reflects majoritarian, "traditional" nutrition more, and omnivores

Table 1 Socioeconomic characteristics of vegetarians, vegans, and omnivores (including pescetarians)

	Vegans ($n = 64$)	Vegetarians ($n = 78$)	Omnivores ($n = 55$)	p
Gender *N* (%)				0.832
Female	49 (76.6%)	59 (75.6%)	44 (80.0%)	
Male	15 (23.4%)	19 (24.4%)	11 (20.0%)	
Age (years; mean ± standard deviation)	37.3 ± 13.4	38.3 ± 14.0	42.8 ± 15.3	0.087
BMI (mean ± standard deviation)	21.9 ± 3.2	21.5 ± 2.3	22.5 ± 2.3	0.116
Marital Status *N* (%)				0.912
Living alone	29 (45.3%)	24 (30.8%)	19 (34.5%)	
Married	20 (31.3%)	30 (38.5%)	18 (32.7%)	
Living with partner	12 (18.8%)	18 (23.1%)	13 (23.6%)	
Separated	1 (1.6%)	2 (2.6%)	1 (1.8%)	
Divorced	1 (1.6%)	3 (3.8%)	3 (5.5%)	
Widowed	1 (1.6%)	1 (1.3%)	1 (1.8%)	
Graduation Level *N* (%)				0.230
Secondary school (lowest)HP	3 (4.7%)	0.0%	0.0%	
Secondary school (medium)Re	3 (4.7%)	5 (6.4%)	2 (3.6%)	
Secondary school (highest)Ab	57 (89.1%)	72 (92.3%)	53 (96.4%)	
Other graduation	0 (0.0%)	1 (1.3%)	0 (0.0%)	
Educational Level *N* (%)				0.473
Apprenticeship	4 (6.3%)	5 (6.4%)	0 (0.0%)	
Training school, commercial school	1 (1.6%)	3 (3.8%)	1 (1.8%)	
School providing vocational education	3 (4.7%)	3 (3.8%)	2 (3.6%)	
Technical college, school of engineering	1 (1.6%)	3 (3.8%)	4 (7.3%)	
University	39 (60.9%)	44 (56.4%)	38 (69.1%)	
Other	2 (3.1%)	0 (0.0%)	0 (0.0%)	
No completed vocational education	0 (0.0%)	1 (1.3%)	0 (0.0%)	
Still in vocational education	13 (20.3%)	19 (24.4%)	9 (16.4%)	
Occupation *N* (%)				0.570
Other	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Self-employed/freelance	14 (21.9%)	22 (28.2%)	18 (32.7%)	
Salaried employee	27 (42.2%)	24 (30.8%)	21 (38.2%)	
Laborer	1 (1.7%)	0 (0.0%)	0 (0.0%)	
Public official	1 (1.7%)	2 (2.6%)	0 (0.0%)	
Retired	1 (1.7%)	2 (2.6%)	3 (5.5%)	
In apprenticeship	20 (31.3%)	27 (34.6%)	12 (21.8%)	
Non-remunerative employment	0 (0.0%)	1 (1.3%)	1 (1.8%)	
Unemployed	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Luxury food and drug consumption at least 3 times a week *N* (%)				
Coffee	34 (53.1%)	46 (59.0%)	44 (80.0%)	**0.007**
Alcohol	8 (12.5%)	19 (24.4%)	19 (34.5%)	**0.017**
Nicotine	4 (6.3%)	4 (5.1%)	5 (9.1%)	0.657
Cannabis	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Other	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Following this diet for *N* (%)				**<0.001**
<2 years	46 (73.0%)	21 (26.9%)	8 (14.5%)	
2–5 Years	9 (14.3%)	10 (12.8%)	5 (9.1%)	
5–10 Years	3 (4.8%)	18 (23.1%)	4 (7.3%)	
10–20 Years	4 (6.3%)	13 (16.7%)	5 (9.1%)	
>20 Years	1 (1.6%)	16 (20.5%)	33 (60.0%)	

Bold values indicate statistically significant values.

thus rated influence of their guardians, physical health and food taste as significantly more important as vegetarians/vegans, also in accordance with tendencies towards significance for the tradition- and hedonism-items.

Several limitations apply. Since data are based on a convenience sample of medical professionals attending a conference on plant-based nutrition, preliminary conclusions can only be drawn for medical professionals. All

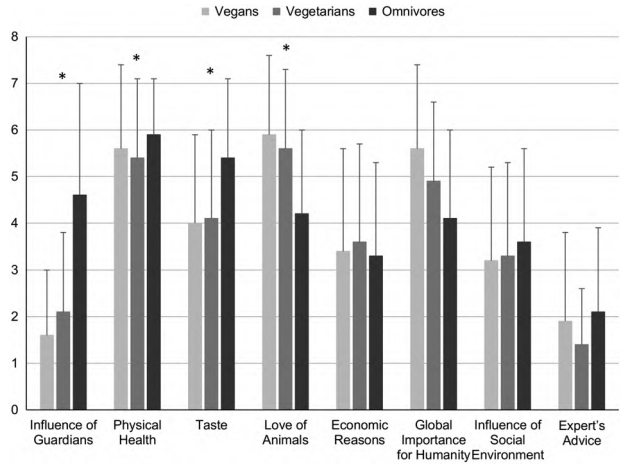

Fig. 1 Initial motives for the choice of the nutritional approach, of vegetarians, vegans, and omnivores (including pescetarians). Values are shown as means±standard deviations. Asterisks indicate significant group differences between omnivores and vegans/vegetarians

study participants were obviously interested in plant-based nutrition, which might have introduced selection bias. Interestingly, medical professionals scored higher on significant number of psychosocial outcomes when compared to the internet sample from a previously published online survey [5]; however, no difference was observed in empathy in this context. Another potential bias is the plenary setting on a conference on plant-based nutrition which might have led to "socially desired" answers.

One of the key points for further studies could be a potential reciprocal relation between degrees of empathy and individual nutritional choices.

Conclusions

This survey suggests that vegan medical professionals do not show greater empathic, open and/or compatible personality traits than vegetarian or omnivorous medical professionals. Given the sample size and the specific subpopulation, further studies with larger sample sizes and mixed methods research are warranted; particularly, studies on potential reciprocities between empathy and individual nutritional choices.

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Author contributions CK and HC conceptualized the research project, developed the methodology and the trial protocol. CK and SH conducted the investigation process and coordinated the research activity planning and execution. CK and HC wrote the initial draft of the manuscript. SH, VM and AM took part in editing the manuscript. HC performed the formal statistical analysis and performed data entry and data curation.

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Transparency declaration CK and HC had full access to all of the data in the study and take full responsibility for theintegrity of the data and the accuracy of the data analysis. They affirm that the manuscript isan honest, accurate, and transparent account of the study being reported; that no importantaspects of the study have been omitted; and that any discrepancies from the study as planned have been explained.

Data sharing Statistical code: Available from Dr. Holger Cramer (e-mail: h.cramer@kliniken-essenmitte.de). Data set: Certain portions of the analytic data set are available to approved individuals through written agreements with the authors.

Compliance with ethical standards

Conflict of interest The authors declare that they have no competing interests.

Ethical approval The study was approved by the Charité Medical University ethics committee before beginning its implementation (approval number: EA1/282/13).

Informed consent Participants were informed about the study and voluntariness of participation and gave consent to participate.

Registration and ethics The study was registered at clinicaltrials.gov under NCT02055677 (initial release 10/31/2013).

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