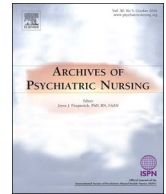




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## A Comparison of Eating Attitudes Between Vegans/Vegetarians and Nonvegans/Nonvegetarians in Terms of Orthorexia Nervosa<sup>☆</sup>

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## ABSTRACT

This descriptive study was performed to compare signs of orthorexia nervosa and eating habits and attitudes of vegans/vegetarians and nonvegans/nonvegetarians. The study sample included 62 people, of whom 31 were vegan/vegetarian and 31 were nonvegan/nonvegetarian. Data were gathered with a personal characteristics form, Orthorexia Nervosa Evaluation Scale-11, Eating Attitudes Test-40 and Maudsley Obsessive Compulsive Inventory. There were not any significant differences between scores for Orthorexia Nervosa Evaluation Scale-11, Eating Attitudes Test-40 and Maudsley Obsessive Compulsive Inventory ( $p > 0,05$ ). As scores for Orthorexia Nervosa Evaluation Scale-11 decreased, predisposition to orthorexia nervosa increased. Therefore, although correlation coefficients were negative, they were considered positive. There was a significant, negative relation between Eating Habits Test-40 scores and Orthorexia Nervosa Evaluation Scale-11 scores ( $r = -0.290$ ,  $p = 0.002$ ) and between Maudsley Obsessive Compulsive Inventory scores and Orthorexia Nervosa Evaluation Scale-11 scores ( $r = -0.319$ ,  $p = 0.012$ ). As poor eating habits and obsessive symptoms increased, so did orthorectic symptoms. In light of obtained results, it seems that people become vegan/vegetarian mainly for ethical reasons and that veganism/vegetarianism is not associated with obsession of healthy eating.

## Introduction

The word orthorexia in orthorexia nervosa (ON) is made up of the words orthos (accurate, appropriate) and orexia (hunger or nutrition). These words define excessive preoccupation with selection of healthy, right food. Orthorexia, obsession with consumption of healthy food, was first defined by Steven Bratman in 1997 to reveal that it is a variant of anorexia nervosa (AN) (Gezer & Kabaran, 2013). The main characteristic of ON is willingness to consume healthy food. A change in this willingness into an excessive mental and behavioral action reminds obsessive compulsive disorder (Brytek-Matera, 2012; Özenoğlu & Dege, 2015). The criterion for selection of food in individuals with ON is to eat healthy food. They can prefer to be hungry to consume food which they regard as unnatural and harmful to their health (Arusoğlu, Kabakci, Köksal, & Merdol, 2008). They also feel anxious about material and methods used for food preparation and refuse to consume different types of food depending on their ingredients and methods of preparation (Zamora, Bonaechea, Sanchez, & Rial, 2005) (Tables 1–6).

An individual can be thought to have ON based on two criteria:

- Persistence of healthy nutrition habits for a long time (healthy

eating for a few weeks cannot be considered as a disorder unless it becomes an obsession) (Dunn & Bratman, 2016),

- Presence of significant negative effects on life (thinking about food to prevent stress, thinking about how food is prepared to prevent negative feelings and spending most of the day by thinking about food) (Dunn & Bratman, 2016).

Although ON is not included in *Diagnostic and Statistical Manual of Mental Disorders-V, 2013* (DSM-V 2013) by American Psychiatric Association (APA), researchers have focused their attention on it and wondered whether it can be considered as a disorder (Duran, 2016; Ergin, 2014).

Orthorectic individuals may depict obsessive tendencies. They may have intrusive thoughts about food and health, feel extremely anxious about dirt and contaminations and exhibit rituals like behavior while preparing and eating food. The most important difference between orthorexia and obsessive-compulsive disorder is that the content of obsessions in orthorexia is perceived as ego-syntonic rather than ego-dystonic (Koven & Abrey, 2015).

The groups at risk of ON reported in the literature are the ones with high awareness about healthy eating like medical students (Fidan,

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**Table 1**  
Socio-demographic features of the participants.

Features	Vegans/vegetarians		Nonvegans/ nonvegetarians		Total	
	N	%	N	%	N	%
Male	9	29.0	15	48.4	24	77.4
Female	22	<b>71.0</b>	16	<b>51.6</b>	38	122.6
Married	7	22.6	17	<b>54.8</b>	24	77.4
Single	24	<b>77.4</b>	14	45.2	38	122.6
High school graduate	2	6.5	–	–	2	6.5
University graduate	21	<b>67.7</b>	24	<b>77.4</b>	45	145.1
Master degree	8	25.8	7	22.6	15	48.4
Smoker	16	<b>51.6</b>	12	38.7	28	90.3
Nonsmoker	15	48.4	19	<b>61.3</b>	34	109.7
Taking alcohol regularly	26	<b>83.9</b>	7	22.6	33	106.5
Not taking alcohol	5	16.1	24	<b>77.4</b>	29	93.5
Doing exercise regularly	12	38.7	6	19.4	18	58.1
Not doing exercise	19	<b>61.3</b>	25	<b>80.6</b>	44	141.9
BMI of lower than 18,5 kg/m <sup>2</sup> (thin)	5	16.1	3	9.7	8	25.8
BMI of 18,5–24,9 kg/m <sup>2</sup> (normal weight)	18	<b>58.1</b>	13	<b>41.9</b>	31	100.0
BMI of over 25–29,9 kg/m <sup>2</sup> (overweight)	7	22.6	12	38.7	19	61.3
BMI of 30–34,9 (First degree obese)	1	3.2	3	9.7	4	12.9
Total	31	100.0	31	100.0	62	100.0

**Table 2**  
The distribution of vegan/vegetarian features of the participants.

Features	N	%
Type of vegetarians	15	48.4
Vegan	16	<b>51.6</b>
Vegetarian	5	16.1
Duration of veganism/ vegetarianism	17	<b>51.6</b>
1–5 years	6	19.4
5–10 years	4	12.9
> 10 years	4	12.9
Reasons for becoming a vegan/vegetarian <sup>a</sup>	25	<b>54.3</b>
Ethical reasons	5	10.9
Being against exploitation of animals	4	8.7
Political reasons	5	10.9
Disgust	7	15.2
Other reasons (ecological, conscientious, religious and being against sexism)	7	15.2

<sup>a</sup> The participants had more than one response. Percentages are based on the number of responses.

**Table 3**  
The distribution of the scores for ORTO-11, EAT-40 and MOCI.

Scales	Features	N	X ± S	Min	Max
MOCI	Vegan/vegetarian	31	10.8 ± 5.3	4	32
	Nonvegan/nonvegetarian	31	12.1 ± 6.5	2	24
EAT-40	Vegan/vegetarian	31	18.8 ± 8.3	7	43
	Nonvegan/nonvegetarian	31	15.3 ± 7.4	4	36
ORTO-11	Vegan/vegetarian	31	27.7 ± 2.8	24	34
	Vegan/vegetarian	31	27.1 ± 3.4	19	35

Ertekin, Işıkay, & Kırkpınar, 2010), doctors (Bağcı Bosi, Çamur, & Güler, 2007; Fidan et al., 2010) and dieticians (Asil & Sürücüoğlu, 2015; Gezer & Kabaran, 2013) and those placing great importance on body image like performance actors (Aksoydan & Çamcı, 2009; Dalmaz & Tekdemir Yurtdaş, 2015). The individuals adopting veganism/vegetarianism thought to have high awareness about healthy nutrition have

**Table 4**  
The distribution of MOCI, EAT-40 and ORTO-11 scores of the vegans/vegetarians and the nonvegans/nonvegetarians according to results of Mann-Whitney U test.

Scales	Features	N	Mean rank	Sum of ranks	U	p
MOCI	Vegan/vegetarian	31	29.69	920.50	424.5	0.429
	Nonvegan/ nonvegetarian	31	<b>33.31</b>	1032.50		
EAT-40	Vegan/vegetarian	31	<b>35.19</b>	1091.00	366.0	0.106
	Nonvegan/ nonvegetarian	31	27.81	862.00		
ORTO-11	Vegan/vegetarian	31	33.32	1033.00	424.0	0.423
	Nonvegan/ nonvegetarian	31	<b>29.68</b>	920.00		

**Table 5**  
The distribution of MOCI, EAT-40 and ORTO-11 scores by gender according to results of Mann-Whitney U test.

Scales	Features	N	Mean rank	Sum of ranks	U	P	
Vegan/ vegetarian	MOCI	Male	9	11.67	105	60.0	0.094
		Female	22	17.77	391		
	EAT-40	Male	9	<b>23.72</b>	213.5	29.5	<b>0.001</b>
		Female	22	12.84	282.5		
Nonvegan/ nonvege- tarian	ORTO-11	Male	9	14.67	132	87.0	0.623
		Female	22	16.55	364		
	MOCI	Male	15	14.50	217.5	97.5	0.379
		Female	16	17.41	278.5		
EAT-40	EAT-40	Male	15	<b>20.50</b>	307.5	52.5	<b>0.006</b>
		Female	16	11.78	188.5		
	ORTO-11	Male	15	16.87	253	107.0	0.626
		Female	16	15.19	243		

**Table 6**  
Correlations between MOCI, EAT-40 and ORTO-11 scores.

Scales	Correlation	MOCI	EAT-40	ORTO-11
MOCI	R	1	0.078	– 319*
	p	–	0.547	0.012
	n	62	62	62
EAT-40	R	0.078	1	– 0.290*
	p	0.547	–	0.022
	n	62	62	62
ORTO-11	R	– 0.319*	– 0.290*	1
	p	0.012	0.022	–
	n	62	62	62

strict rules about eating. In this respect, vegans/vegetarians can be thought to be at risk of ON. However, there have not been any studies about the issue in the literature.

### Veganism/vegetarianism

The word vegetarian stems from the Latin word vegetus, which means lively, healthy and alive (Vegetarian Club, 2015). International Vegetarians Union (IVU) defined vegetarianism in 2011 as “consumption of food derived from plants only with or without animal products like dairy products, eggs and honey” (Vegan and Vegetarian Association of Turkey, 2016). Vegetarians eat grains, legumes, fruit, vegetables and seeds. They do not eat meat from any animals, including red meat, chicken and sea food (e.g. fish, lobster, crab and shrimps etc.) (Vegetarian Society, 2016).

Vegans are against the use of products tested on animals (cosmetics, detergents and toothpaste etc.). They do not consume soap containing animal fat and chocolate, cake and pasta containing milk. They do not go to circuses since animals are used there and do not watch films in

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