

**STREET FOOD CONSUMPTION AND ITS RELATION WITH ORTHOREXIA  
NERVOSA AND HEALTHY ORTHOREXIA IN UNIVERSITY STUDENTS STREET  
FOOD HEALTHY ORTHOREXIA**

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**ABSTRACT**

**Introduction:** Street foods are ready-to-eat food and beverages prepared and/or sold by vendors on the streets and similar places. Street foods are generally preferred by a lot of people. Its popularity is increasing because of its low cost and offers a gastronomic experience. Healthy orthorexia is a healthy interest in diet, healthy behavior related to diet, and healthy eating as part of one's identity. Orthorexia Nervosa (ON), on the other hand, includes inflexible dietary rules for healthy eating, persistent and repetitive preoccupation with food, obsessive focus on dietary practices, medical or psychological complications, anxiety about eating unhealthy foods, and compulsive behaviors. **Method:** The research was carried out in two stages among university students between April and June 2022. In the first stage, a 14-question survey questioning the reasons and frequency of street food consumption was applied to 945 university students and Teruel orthorexia scale (TOS), Orthorexia Nervosa scales and questionnaires were applied to 175 university students. **Results:** From 945 students (66.5% women and 33.5% men) 85.9% of the participant ate street food, 22.3% ate street food that can be reached quickly, and 39.8% ate street food for breakfast. Participants who didn't eat street food have higher TOS and healthy TOS scores. **Conclusions:** Although there was a negative correlation with some street food consumption in terms of orthorexia slope in the TOS scale, no significant correlation was found between the frequency of street food consumption and ORTO-11. **Funding:** Supported by Baskent University Research Fund.

**KEYWORDS:** Street food, Orthorexia Nervosa, Healthy Orthorexia; TOS, ORTO-11.

**INTRODUCTION**

Street food is generally prepared on the street; are the foods that are sold and consumed in places such as streets and festivals. These foods are seen as an alternative to home cooking and are cheaper than those sold in restaurants.<sup>[1]</sup> Food and Agriculture Organization (Food and Agriculture FAO, FAO) defined street foods as ready-to-eat food and beverages prepared and/or sold by vendors on the streets and similar places in 1986. The same definition was defined in the same way by the World Health Organization (WHO) in 1996.<sup>[2,3]</sup> In a study in which many studies were evaluated, it was stated that 441 studies selected for the study were mostly conducted in Asia and Africa, 85.5% of them were on food hygiene, and it was revealed that accessibility and consumption frequency were less investigated. Although its popularity has increased in recent years, approximately 2.5 billion people eat street food.<sup>[4]</sup> Especially because of its low cost, it is preferred by

people with low and middle income. In addition, it is also possible to offer tourists an authentic gastronomic experience.<sup>[5-6]</sup>

In developing countries, with the progress of urbanization, the majority of the population migrated from rural areas to cities, and as a result, new eating habits began to emerge among the urban population.<sup>[7-9]</sup> Street foods are cultural, social and economic phenomena, many of which are specific to urbanized regions.<sup>[4]</sup>

Street food culture is also very common in Turkey. All over Turkey, many different foods and beverages are sold on the streets, and people experience local-scale street food in different geographies. As an example of our country's widely consumed street foods; kebab, liver, sirdan, mumbar, kokoreç, quince toast, raw meatballs, lahmacun, kumru, pickle juice, mussels, corn, boza,

chestnuts, karsanbaç, cotton candy, pastry desserts, candies, chickpea-rice varieties and ice cream. It is possible to count flavours such as.<sup>[9]</sup>

In a study conducted on high school and university students, it was determined that 23.3% of the participants consumed street food every day, and 40.1% 2-3 times a week. Although it is known that street food sellers do not pay enough attention to hygiene rules, it has been stated that it is preferred by consumers because it is cheap, tasty, diverse and served quickly.<sup>[10]</sup> In a study conducted in South Africa, people from different geographical regions and ethnic origins participated in the study. It has been determined that street foods are consumed at a high rate. It was concluded that soft drinks are consumed at a high rate and this may be related to obesity and non-communicable diseases.<sup>[11]</sup>

Eating disorders are accepted as medical diseases with diagnostic criteria based on psychological, behavioural and physiological characteristics.<sup>[12]</sup> Eating disorders are diseases in which people experience serious disturbances in their eating behaviour and related thoughts and feelings. People with eating disorders are often preoccupied with food and their body weight.<sup>[13]</sup> Recently, it has been emphasized that ON should be differentiated into healthy orthorexia (HO) and orthorexia nervosa. The core elements of HO are a healthy interest in diet, healthy behaviour related to diet, and healthy eating as part of one's identity. ON, on the other hand, includes inflexible dietary rules for healthy eating, persistent and repetitive preoccupation with food, obsessive focus on dietary practices, medical or psychological complications, anxiety about eating unhealthy foods, and compulsive behaviours.<sup>[15]</sup>

In a study, the relationship between ON tendency and obsessions of students studying in different departments at the university was examined and it was determined that orthorexic tendencies increased. It was determined that the orthorexic tendency of women was higher than that of men, students studying in the health department had a higher tendency to ON than students studying in the field of social sciences, and students who did not apply an existing diet for weight management.<sup>[16]</sup>

The healthy orthorexia sub-dimension evaluates the tendency to be interested in healthy foods and healthy eating, the orthorexia nervosa sub-dimension evaluates the negative social and emotional effects of trying to reach a pure/healthy way of eating.<sup>[18]</sup>

The aim of this study is to evaluate the street food consumption and its relation with orthorexia nervosa and healthy orthorexia in university students.

## METHODS

### Study design

The research was carried out in two stages among university students who agreed to participate in the study between April and June 2022.

### Participants

Participation in the study was voluntary. The sample size was determined as at least 354 students with 80% power and 5% error. Participants who gave missing and inconsistent data were excluded. In the first stage, a 14-question survey questioning the reasons and frequency of street food consumption was applied to 945 university students. Afterwards, ORTO-11 and TOS scales and questionnaires were applied to 175 university students.

### Questionnaire

While the frequency of consumption of street food was questioned, the food consumed daily was given one point, those consumed 3-4 times a week two, three points consumed 1-2 times a week, four points for those consumed once every two weeks, five points for those consumed once a month, and six points for those not consumed at all. Mean standard deviations of food consumption were taken. The increase in these scores indicates that the food is consumed less.

ORTO-15, which is accepted as a determining scale in the detection of Orthorexia Nervosa (ON), was prepared by Donini et al. in 2005. However, these scales are not used alone and are supported by scales that detect eating attitude, depression, and obsessive-compulsive behaviours.<sup>[13]</sup> In our country, the ORTO-11 scale, which was created by Arusoglu in 2006 after an adaptation study into Turkish, is used.<sup>[14]</sup>

The relationship between street food consumption points and ORTO-11, TOS, TOS health and TOS orthorexia tendency was investigated. Although the ORTO-11 score is low, it shows that the tendency to orthorexia is high, while the increase in TOS healthy and TOS Orthorexic points indicates that these tendencies increase. The cut-off point used for the evaluation of the ORTO-11 scale in the study was determined by the method of obtaining the cut-off point in Arusoglu's Turkish Adaptation Study.<sup>[15]</sup> Individuals participating in the study were divided into quartiles according to their ORTO-11 scores. The cut-off point of the study was determined as 24 points in the 25% quarter and below this value was evaluated as orthorexic tendency.

A new instrument was presented by Barrada and Roncero<sup>[17]</sup> in 2018, with the Teruel orthorexia scale (TOS), a scale developed in 2018. It was stated that the use of TOS would assist in the necessary task of better defining the structure of orthorexia and its relationship with other disorders and psychological dimensions. The Turkish validity and reliability study was conducted by Asarkaya and Arcan<sup>[18]</sup> is a self-report scale. Consisting

of 17 items in total, the scale has a two-factor structure. High scores from the healthy orthorexia sub-dimension indicate that the interest in healthy eating is not pathological, while high scores from the orthorexia nervosa sub-dimension indicate that the pathological interest in healthy eating and the tendency for orthorexia nervosa increase.

#### Statistical analyses

Quantitative variables obtained from the questionnaire were expressed as mean (X), standard deviation ( $\pm$ SD), qualitative variables were expressed as number (n) and percentage (%). The Mann-Whitney U test was performed for non-parametric data. The findings obtained from the research were evaluated at the 95% confidence interval and at the 5% significance level.

#### RESULTS

The study was carried out on 628 (66.5%) women and 317 men (33.5%) individuals. The mean age of the women participating in the study was  $21.2 \pm 2.33$  and  $21.7 \pm 2.38$  for the men. BMI averages were calculated as  $21.1 \pm 9.03 \text{ kg/m}^2$  and  $24.1 \pm 3.5 \text{ kg/m}^2$  for women and men, respectively. It was determined that 38.7% of the individuals participating in the study had BMI values between 21.0-24.9 and 33.1% were 1-3 semester students, 31.0% were 4-6 semester students. 63.3% of the participants live with their families. It was determined that 94.1% ate out, 28.9% of them ate out 1-2 times a week, and 85.9% of the participants ate street food.

**Table 1: Some demographic properties about university students.**

Properties	Women (n:628, %66.5)		Man (n:317, %33.5)		Total (n:945)	
	x	SS	x	SS	x	SS
Age (year)	21.2	2.33	21.7	2.38	21.4	2.36
Height (cm)	1.65	0.06	1.79	0.06	1.7	0.09
Weight (kg)	57.7	9.03	78.0	13.4	64.5	14.41
BMI (kg/m <sup>2</sup> )	21.1	3.05	24.1	3.5	22.1	3.52
	n	%	n	%	n	%
<b>BKI classification</b>						
14.5-18.5	116	18.5	10	3.2	126	13.3
18.6-20.9	231	36.8	39	12.3	270	28.6
21.0-24.9	213	33.9	153	48.3	366	38.7
25.0-29.9	57	9.1	98	30.9	155	16.4
30.0-34.9	11	1.8	14	4.4	25	2.6
35.0-50.0	-	-	1	0.9	1	0.3
<b>University term</b>						
1-3	209	33.3	104	32.8	313	33.1
4-6	189	30.1	104	32.8	293	31.0
7-8	181	28.8	72	22.7	253	26.8
$\geq 9$	49	7.8	37	11.7	86	9.1
<b>Live with</b>						
Family	434	69.1	164	51.7	598	63.3
Yurt	100	15.9	49	15.5	149	15.8
Alone	45	7.2	54	17.0	99	10.5
Friends	39	6.2	43	13.6	82	8.7
Other	10	1.6	7	2.2	17	1.8
<b>Eating outside</b>						
Positive	600	95.5	289	91.2	889	94.1
Negative	28	4.5	28	8.8	56	5.9
<b>Eating outside frequency</b>						
Everyday	81	12.9	63	19.9	144	15.2
5-6 times a week	82	13.1	60	18.9	142	15.0
3-4 times a week	145	23.1	79	24.9	224	23.7
1-2 times a week	199	31.7	74	23.3	273	28.9
once in two week	63	10.0	8	2.5	71	7.5
one a month	34	5.4	8	2.5	42	4.4
<b>Eating street food</b>						
Positive	495	82.0	268	84.5	763	85.9
Negative	109	18.0	25	7.9	134	14.1

In Table 2, it was shown that, 39.8% of the individuals participating in the study prefer street food for breakfast. 22.3% eat street food because they can find it quickly.

32.9% of those who do not eat street food do not find it hygienic, and 33.9% do not consume because they are not sure if it is healthy.

**Table 2: Evaluation of street food consumption time and reasons for eating/not eating.**

Street food	Women		Men		Total	
	n	%	n	%	n	%
<b>Eating time*</b>						
Breakfast	556	40.0	292	39.5	848	39.8
Before lunch	166	11.9	33	4.5	199	9.3
Lunch	245	17.6	113	15.3	358	16.8
After lunch	90	6.5	51	6.9	141	6.6
Dinner	242	17.4	155	20.9	397	18.6
Night	92	6.6	96	13.0	188	8.8
<b>Reasons for eating street food*</b>						
Suitable price	99	9.1	82	11.2	181	10.0
Friends	152	14.0	70	9.6	222	12.3
Easy to reach	256	23.7	148	20.3	404	22.3
Famous	62	5.7	43	5.9	105	5.8
Match entrance/exit	37	3.4	50	6.9	87	4.8
Concert, carnival entrance and exit	98	9.1	70	9.6	168	9.3
Exam period	164	15.2	90	12.3	254	14.0
Time limit fort cooking or preparing	143	13.2	86	11.8	229	12.6
Not knowing to cook	26	2.4	49	6.7	75	4.2
Tasty	31	2.9	29	4.0	40	2.2
After doing sports	10	0.9	9	1.2	39	2.1
Open late	1	0.1	1	0.1	2	0.1
Life request	2	0.2	2	0.3	4	0.2
To be at school	1	0.1	-	-	1	0.1
<b>Reasons for not eating street food*</b>						
Not hygienic	92	38.2	9	13.6	106	32.9
Not sure if it's healthy	80	33.2	24	36.4	104	33.9
Dislike the taste	49	20.3	12	18.2	61	19.9
Expensive	11	4.6	16	24.2	27	8.8
Prefer eating with family	8	3.3	3	4.5	11	3.6
Can prepare meal	1	0.4	1	1.5	2	0.7
Not satisfying	-	-	1	1.5	1	0.3

\*Multiple answers

It was determined that bagels, rolls and pastries were consumed at a rate of 41.2% every day and the most preferred beverage was tea with a daily consumption of

56.1%. Liver bread, kokoreç, stuffed mussels are consumed 3-4 times a week with 58.5%, 55.3% and 54.8% ratios, respectively.

**Table 3: Consumption frequency, mean, standard deviation and median of some street foods, snacks and street food drinks.**

Foods/snacks and drinks	Everyday		3-4 times a week		1-2 times a week		Once in a twice a week		Once a month		Never		X	SS	Median
	s	%	s	%	s	%	s	%	s	%	s	%			
Ayvalık toast/ dove	61	6.5	521	55.1	8	0.8	10	1.1	49	5.2	56	5.9	2.48	1.35	2
Fish and bread	50	5.3	532	56.3	7	0.7	4	0.4	47	5.0	65	6.9	2.52	1.38	2
Liver and Bread	27	2.9	553	58.5	3	0.3	7	0.7	32	3.4	82	8.7	2.59	1.41	2
Raw Meatballs	166	17.6	423	44.8	21	2.2	36	3.8	42	4.4	17	1.8	2.17	1.16	2
Doner	215	22.8	369	39.0	40	4.2	31	3.3	38	4.0	11	1.2	2.06	1.18	2
Wet hamburger	55	5.8	526	55.7	13	1.4	16	1.7	31	3.3	63	6.7	2.48	1.33	2
Kokorec	61	6.5	523	55.3	7	0.7	13	1.4	46	4.9	55	5.8	2.47	1.33	2
Meatballs Bread	118	12.5	466	49.3	24	2.5	31	3.3	41	4.3	24	2.5	2.27	1.17	2
Kumpir	58	6.1	522	55.2	7	0.7	22	2.3	53	5.6	41	4.3	2.45	1.27	2

Lahmacun	178	18.8	411	43.5	28	3.0	29	3.1	48	5.1	10	1.1	2.13	1.133	2
Stuffed mussels	62	6.6	518	54.8	10	1.1	11	1.2	44	4.7	59	6.2	2.48	1.35	2
Rice with chickpeas	109	11.5	484	51.2	19	2.0	21	2.2	30	3.2	42	4.4	2.30	1.24	2
Bagels / Rolls/ Pastries	389	41.2	230	24.3	38	4.0	20	2.1	13	1.4	15	1.6	1.70	1.06	1
Cold sandwich	262	27.7	338	35.8	34	3.6	12	1.3	19	2.0	39	4.1	2.01	1.27	2
Sausage Bread	87	9.2	501	53.0	20	2.1	16	1.7	40	4.2	40	4.2	2.35	1.24	2
Chicken rice	151	16.0	440	46.6	32	3.4	28	3.0	22	2.3	32	3.4	2.19	1.18	2
Ice cream	151	16.0	445	47.1	26	2.8	30	3.2	29	3.1	24	2.5	2.17	1.45	2
Waffles	58	6.1	523	55.3	8	0.8	24	2.5	57	6.0	35	3.7	2.44	1.25	2
Tea	530	56.1	132	14.0	9	1.0	7	0.7	12	1.3	20	2.1	1.45	1.49	1
Coffee	490	51.9	171	18.1	13	1.4	6	0.6	5	0.5	25	2.6	1.51	1.06	1
Ayran	441	43.8	219	23.2	39	4.1	12	1.3	16	1.7	10	1.1	1.63	0.99	1
Soda	337	39.9	256	27.3	29	3.1	13	1.4	14	1.5	19	2.0	1.71	1.08	1
Sode with our carbon	319	33.8	304	32.2	25	2.6	16	1.7	13	1.4	33	3.5	1.87	1.21	2
Salgam	76	8.0	519	54.9	11	1.2	10	1.1	18	1.9	74	7.8	2.43	1.37	2
Alcoholic beverage	112	12.9	471	49.8	15	1.6	12	1.3	25	2.6	63	6.7	2.34	1.37	2

In Table 4, anthropometric measurements, ORTO-11, TOS scores according to eating street food, gender and orthorexic tendency was evaluated. Participant who

didn't eat street food have higher TOS and healthy TOS scores ( $p < 0.05$ ). Men had higher Ortorectic TOS score than women ( $p < 0.05$ ).

**Table 4: Evaluation of participants' anthropometric measurements, ORTO-11, TOS scores according to eating street food, gender and orthorexic tendency.**

Some properties	Eating street food		Not eating street food		p
	$\bar{x}$	SS	$\bar{x}$	SS	
Age (year)	21.47	1.89	22.8	5.01	0.951
Height (cm)	1.72	0.08	1.69	0.09	
Weight (kg)	66.9	15.01	63.2	13.3	0.180
BMI (kg/m <sup>2</sup> )	22.3	3.66	21.9	3.31	0.646
ORTO-11	27.4	4.85	26.8	4.34	0.505
TOS	14.89	8.14	17.01	7.06	<b>0.032</b>
Healty TOS	10.60	5.23	12.4	4.76	<b>0.015</b>
Ortorectic TOS	4.2	4.1	4.6	3.45	0.259
Gender	Women		Men		p
	$\bar{x}$	SS	$\bar{x}$	SS	
Age (year)	22.0	3.6	21.68	2.03	0.561
Height (cm)	1.66	0.06	1.8	0.05	
Weight (kg)	57.9	7.6	79.8	13.69	
BMI (kg/m <sup>2</sup> )	20.9	2.6	24.5	3.86	
ORTO-11	27.07	4.3	27.47	5.31	0.615
TOS	14.55	6.45	17.22	9.5	0.055
Healty TOS	10.8	4.59	11.56	5.95	0.380
Ortorectic TOS	3.66	3.10	5.6	4.75	<b>0.011</b>
ORTO-11 quartile	<24 (n:41)		>24.1 (n:93)		p
	$\bar{X}$	SS	$\bar{X}$	SS	
Age (year)	22.80	4.5	21.77	2.39	0.325
Weight (kg)	64.17	12.84	64.13	13.83	0.726
BMI (kg/m <sup>2</sup> )	21.71	3.05	21.96	3.51	0.946
ORTO-11	21.95	2.29	29.18	3.20	<b>0.000</b>
TOS	20.68	7.80	13.65	6.5	<b>0.000</b>
Healthy TOS	14.21	4.69	10.04	4.79	<b>0.000</b>
Ortorectic TOS	6.45	4.45	3.27	3.04	<b>0.000</b>

P values were calculated using the Mann-Whitney U test. \* $P < 0.05$  between the frequency of street food consumption and ORTO-11

The correlation between street food consumption and ORTO-11 and TOS scores was shown in Table 5. There was a negative correlation with some street food

consumption in terms of orthorexia slope in the TOS scale, no significant correlation was found between the frequency of street food consumption and ORTO-11.

**Table 5: Correlation between street food consumption frequency and ORTO-11 and TOS scores.**

Food	ORTO-11	TOS	Healthy TOS	Orthorectic TOS
Ayvalik toast/ dove	0.086	-0.120	-0.027	-0.204*
Fish and bread	0.029	-0.052	-0.070	-0.012
Liver bread	0.098	-0.165	-0.058	-0.253**
Raw meatballs	0.032	0.115	0.222*	-0.062
Doner	-0.056	-0.046	0.042	-0.147
Wet hamburger	-0.022	-0.081	0.055	-0.233**
Kokorec	0.006	-0.165	-0.068	-0.239**
Meatballs bread	0.021	-0.029	0.034	-0.102
Kumpir	0.103	-0.031	0.047	-0.124
Lahmacun	-0.091	-0.028	0.102	-0.189*
Stuffed mussels	0.033	-0.095	0.013	-0.205*
Rice with chickpeas	0.044	-0.075	0.041	-0.203*
Bagels / rolls / pastries	0.119	0.053	0.112	-0.041
Cold sandwich	0.013	0.142	0.152	0.083
Sausage bread	0.017	-0.090	0.034	-0.224*
Chicken rice	0.062	-0.081	-0.026	-0.126
Ice cream	0.134	0.047	0.066	0.008
Lokma	0.034	0.066	0.153	-0.069
Chestnut	0.071	-0.203*	-0.194*	-0.149
Tea	-0.039	0.008	0.1	-0.116
Coffee	0.031	0.027	0.067	-0.035
Ayran	-0.097	-0.007	-0.007	-0.004
Soda	-0.164	0.116	0.245**	-0.09
Sode without carbon	-0.08	0.052	0.143	-0.084
Salgam	-0.052	-0.061	0.034	-0.168
Alcoholic beverage	-0.121	0.008	0.086	-0.098

\*P&lt;0.05

## DISCUSSION

Street food is clearly gaining economic, cultural and nutritional importance at the global level. In a study compiling the different socio-economic and health-related aspects of street food consumption and trade, it was determined that the articles were mostly related to street food safety (85.3%) and to a lesser extent the availability/consumption of street food (31.1%). Street food is becoming more and more important and is highly consumed, especially in urban areas where the population is increasing rapidly. Urbanization, along with industrial development, increased job opportunities in urban centers and less time to cook, increasing the demand for street food as a convenient and accessible food source. A street food tradition seems more developed in low- and middle-income countries, especially in Africa and Asia, where street food is a deeply rooted habit. Also, to date, most of the research approaches to street food are related to hygiene and food safety conditions, which are less of a concern in developed regions where education level and health literacy and awareness are higher, and there is more legislation and supervision. Street food is common in developed countries.<sup>[19]</sup>

In one study, street food was associated with higher BMI and hypertension prevalence rates than the restaurant food group.<sup>[20]</sup> In this study, there was no statistically

significant difference in BMI between those who did not eat street food and those who did not. This is thought to be due to the fact that the study group consisted of university students.

In a study, motivations affecting food choice in orthorexia and healthy orthorexia were examined. It has been observed that the motivations predicting food choice in orthorexia nervosa and healthy orthorexia are quite different. In orthorexia nervosa, it was determined that the main motive was weight control and it was also important in sensory attraction. It has been determined that the main motivation for healthy orthorexia is sensory appeal and price is also an important factor.<sup>[21]</sup> In this study, healthy orthorexia and orthorexia tendencies of individuals with orthorexic inclination according to ORTO-11 scale were statistically significantly higher than TOS scale. This shows that the two scales support each other. In the study, healthy orthorexia scores of individuals who did not eat street food were statistically significantly higher than those who ate. There is no significant difference between ORTO-11 and TOS scores according to gender. When street food consumption and ORTO-11 and TOS scores were compared, it was determined that there was a negative correlation between Orthorexic TOS and some street foods. It was determined that there was a negative correlation in dishes such as kokorec, stuffed mussels, wet hamburger, liver

bread. In a study In a review, it was said that studies on street food were mostly related to food safety (85.3%) and to a lesser extent consumption (31.1%). Among the main food safety topic (n = 376), microbiological contamination of street food was the most frequently addressed issue (61.2%), followed by vendors (29.5%) and personal hygiene (18.1%). Seven studies related to chronic diseases are mentioned.<sup>[20]</sup>

While street food is mainly handled in terms of hygiene, orthorexia is examined in terms of weight loss.<sup>[20,21]</sup> This is the first study to examine street food consumption and orthorexia and healthy orthorexia on university students.

## CONCLUSION

Although there was a negative correlation with some street food consumption in terms of orthorexia slope in the TOS scale, no significant correlation was found between the frequency of street food consumption and ORTO-11. It is thought that this may be due to the fact that street food consumption can only be filled by students consuming this food. In addition, it is thought that the questioning of many types of food under the heading of street food also affects the participants.

## AUTHORS' CONTRIBUTIONS

IOE and GE contributed to the creation and design of the study, designed the statistical plan, and interpreted the data. IOE conducted the literature search, and wrote the first draft, with the help of GE. IOE conducted performed the analyses. All authors critically reviewed this and previous versions of the paper.

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## CONFLICTS OF INTEREST

The authors state that there are no conflicts of interest in preparing the manuscript.

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