

Orthorexia tendency and social media addiction among candidate doctors and nurses

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Abstract

Purpose: To determine orthorexia tendency and social media addiction among candidate doctors and nurses.

Design and Methods: This was a cross-sectional study conducted in 2019 with 969 candidate doctors and nurses training in a peripheral public university. Data were collected via ORTO-15 and Social Media addiction scales and analyzed by using percentage, mean, χ^2 test, and binary logistic regression.

Findings: Of the study population, 78.8% were social media addicts and 62.2% had orthorexic tendencies. The ratio of orthorexic tendency was 31.0% among high/very high addicts ($p < 0.05$).

Practice Implications: In preclinical years, both groups should be screened for early detection of orthorexia tendency and social media addiction. A combination of therapy and nutrition education should be used and social media literacy should be promoted to raise awareness of orthorexia.

KEYWORDS

addiction, doctors, eating disorder, media, nurses, social

1 | INTRODUCTION

In recent years, the “clean” eating style has been seen as an increasingly popular diet tendency in societies.^{1,2} It refers to eating behaviors that focus on clean eating, restrictive eating habits, strictly avoiding unhealthy or impure foods.³ In excess, adherence to such clean diets may result in “orthorexia nervosa” (ON).⁴ ON is a new eating disorder used to describe a healthy or “clean” eating and pathological obsession.¹ Orthorexic individuals often restrict their diets to a limited number of foods that they believe to be “pure” and “clean,” like raw vegetables. Overly restrictive eating behaviors can increase over time and are accompanied by intensified “cleansing” which are often considered “purifying.”⁴ In some cases, harmful health consequences are produced by self-administered dietary rules aimed at improving health. ON has a growing interest, but currently, there is no universally shared definition of ON. Diagnostic criteria are being discussed and psychometric tools used in the literature have revealed some flaws.⁵

Maintaining healthy nutrition is a challenge for young adults (ages 18–35).⁶ Reports about young adults show dietary patterns characterized by low fruit and vegetable^{7,8} and high sugar-sweetened beverage consumption.⁹ In recent years, access to nutritional information has increasingly relied on computing and information technologies, particularly mobile platforms and social media.^{10,11} Young adults appear to find social media platforms as an acceptable and desirable way of sourcing information via,⁶ however, excessive and addictive use of social media is a new form of behavioral addiction.¹² Many prior studies have explored the relationship between excessive use of social media and mental health problems (e.g. depression, anxiety, stress, and low self-esteem) among various age groups of people.^{13–16} Social media is an important source of information about healthy eating (e.g., Facebook and Instagram are used to guide nutrition-related decision-making).¹⁷ Today, the relationship between ON and social media addiction is still uncertain, although there are reported links between Instagram use and increased symptoms of orthorexia.¹⁸

Turkey is still a young populated country of 83 million, with one-third of social media users in the 25–34 age group.^{19,20} In Turkey, ON prevalence is high (approximately 50%) among candidate doctors and nurses,^{21,22} which is the best proof of the high risk of ON in those providing direct healthcare. The use of social media in healthcare settings is increasing daily as it pertains to community engagement, promotion of health, patient education, outreach, and various other factors.²³

Overuse of social media may trigger ON tendency among candidate doctors and nurses due to university life, which is oriented towards becoming independent and self-sufficient. University life is a period that can force changed eating habits for young people. Many candidate doctors and nurses have to live away from family and have to take responsibility for their eating behaviors as they embark on a quest in nutrition-related social media platforms. The fact that both groups have received medical and healthy nutrition training may lead to nutritional obsession. So far, no studies have reported the relationship between orthorexia tendency and social media addiction among future doctors and nurses.

The aim of this study was to determine the relationship between orthorexia tendency and social media addiction among candidate doctor and nurse populations.

2 | METHODS

2.1 | Study design

This cross-sectional study was conducted between October and December 2019.

2.2 | Population

The population of the study consisted of 1,004 medical and nursing students in a public university which is located in a peripheral region of Turkey.

2.3 | Selection criteria

On the basis of the knowledge that the prevalence of ON was 45% in our country,²¹ the minimum sample size was found to be 283 with 80% power and 95% confidence intervals. Twenty-two participants who stated that they did not use social media were excluded from the study at this stage. Also, participants with diagnosed diet-related diseases (diabetes mellitus type I and II, Crohn's disease, celiac disease, gastritis) were excluded (13 participants). The study was completed with the participation of 969 students.

2.4 | Data collection

Data were collected via a 72-item questionnaire. On obtaining written and verbal informed consent forms from the participants, the

questionnaire forms were distributed to the participants in their classrooms and completed under observation. The response time for a questionnaire was 20–30 min on average. In the first stage of the two-stage questionnaire, the sociodemographic characteristics, health-disease status, some health behaviors, body mass index (according to self-reported height and weight) as well as information about the use of social media were included. In the second stage, the ORTO-15 scale and Social Media addiction scale took place.

2.5 | Social media use

First, participants were asked “Do you use social media?” with answers “yes” or “no.” Those who answered “yes” then completed the scales of ON and Social Media Addiction.

2.6 | Orthorexia nervosa (ORTO-15 Scale)

The ORTO-15 is a 15-item questionnaire measuring ON. The questionnaire is a self-report and contains items such as seeking to address the selection, preparation, consumption, and effect of, and attitude towards presumed healthy foods. Participants rated their response on a 4-point Likert Scale (1 = *always*, 2 = *often*, 3 = *sometimes*, 4 = *never*). In total, a minimum of 15 and a maximum of 60 points could be scored on the scale. Responses that indicated orthorexic behaviors were given a score of “1” whereas “healthier” responses were designated a score of “4.”²⁴ The cut-off point of the scale was considered to be 40 in predicting orthorexic behavior and tendency. Those with ORTO-15 scale score below 40 orthorexic and those with score of 40 or above were evaluated as without ON tendency.²⁴ Adaptation of the scale into Turkish was conducted by Arusoglu et al.²⁵

2.7 | Social media addiction scale

A five-point Likert scale developed by²⁶ to measure the social media addiction of university students consisted of a total of 41 items. Items in the scale were rated as “1” *never*, “2” *rarely*, “3” *sometimes*, “4” *frequently*, and “5” *always*. The lowest 41 and the highest 205 points could be obtained from the scale. According to the scores obtained from the scale, social media addiction levels were classified as follows²⁶: Scores of 41–73: Nonaddictive, 74–106: Little addictive, 107–139: Middle addictive, 140–172: High addictive, 173–205: Very high addictive.

In this study, social media addiction levels were also categorized at two levels as “nonaddictive” and “addictive” for the total prevalence and logistic regression analysis.

2.8 | Data analysis and processing

Statistical analysis was performed using SPSS software (version 22). Continuous data were presented as mean and standard

deviation (SD). In categorical data χ^2 test was used to compare groups. Also, binary logistic regression analyses were used. To predict significant factors for ON tendency. Odds ratio (OR) and 95% confidence interval (CI) were calculated. Significance levels were set at the 5% level.

2.9 | Ethical aspects

The research was planned in accordance with Helsinki Principles. Before undertaking the investigation ethical clearance was obtained from a local university ethics committee (2019/208).

3 | RESULTS

In this study, 63.9% of the participants were 21 years of age or younger with a mean age of 21.4 ± 3.2 years, 63.9% were women, 58.3% were training in nursing. The rate of those whose family monthly income above the minimum wage was 77.4%. There was no chronic disease in 91.1% of the participants. Overall, the rate of those who evaluated their health as good was 57.4%. Body weight was determined to be normal in 70.8% of the participants. The sociodemographic characteristics of the participants were given in Table 1.

Table 2 showed the prevalence of social media addiction among candidate doctors and nurses. Participants obtained a total of 93.2 ± 31.5 mean scores from the scale. It was determined that in general, 78.8% of the participants were social media addicts. Prevalence was significantly higher among candidate nurses than candidate doctors ($p < 0.05$).

Orthorexia tendency according to some characteristics of the participants is shown in Table 3. As seen in Tables 3, 62.2% of the participants were determined to have an orthorexia tendency. The ratio of orthorexia tendency was 63.8% among those aged 21 years or younger and 59.4% among those aged 22 years or older. There was no significant difference between age groups in terms of orthorexia tendency ($p > 0.05$). The rate of orthorexia tendency among females was 66%, whereas it was 60.1% among males. There was no significant difference in terms of orthorexia tendency according to gender ($p > 0.05$). Among the participants, the ratio of orthorexia tendency was 54.5% among candidate nurses, whereas it was 73.0% among candidate doctors ($p < 0.05$). Among the participants, the ratio of orthorexia tendency was 68.5% for those with a family income of 1,000 USD or above and was significantly higher than other income groups ($p < 0.05$).

Orthorexia tendency was not significantly different in terms of chronic problems, health perception, physical activity, weight satisfaction, and BMI ($p > 0.05$). In the study group, 84.2% stated that they did not receive any vitamin supplements, and the ratio of orthorexia tendency among these was 65.1%. The tendency towards orthorexia varied significantly in terms of taking vitamin supplements ($p < 0.05$). In the group, 88.3% stated that they did not follow any diet program and the ratio of orthoretics among these was 64.6% ($p < 0.05$).

In Table 4, the ratio of orthorexia tendency was 31.0% among high/very high addicts. Addiction levels were significantly higher than nonaddicted ones ($p < 0.05$).

Logistic regression analysis of effective variables on orthorexia tendency was given in Table 5. Orthorexia tendency was 1.68 times higher in those taking no vitamin supplements, 1.73 times higher in non-dieters, and 1.37 times higher in social media addicts ($p < 0.05$).

4 | DISCUSSION

ON is a recently proposed eating disorder and social media use is ever-increasing among young adults. Social media and the “clean eating” trend may push candidate doctors and nurses toward orthorexia. Until now, the connection between social media addiction and ON is still unclear. This is the first study which investigates two major problems among candidate doctors and nurses.

In the present study, the relationship between ON tendency and social media addiction was investigated. Nearly four out of five participants were social media addicts (Table 2). Similarly, in studies

TABLE 1 Sociodemographic characteristics of the participants

Characteristics (n = 969)	No.	%
Age groups (years)		
≤21	619	63.9
≥22	350	36.1
Gender		
Male	350	36.1
Female	619	63.9
Faculty		
Medical	404	41.7
Nursery	565	58.3
Family income (monthly) (USD)		
≥1,000	153	15.8
500–999	597	61.6
<500	219	22.6
Chronic problems		
Had	85	8.8
Had not	884	91.1
Health perception		
Good	556	57.4
Moderate	304	31.4
Bad	109	11.2
Body mass index		
Malnutrition	96	9.9
Normal	686	70.8
Overweight/obese	187	19.3

Candidate	Addictive (n = 764; 78.8%)		Nonaddictive (n = 205; 21.2%)		Total (n = 969; %)	χ^2/p Value
Doctors	301	74.5	103	25.5	404	41.7
Nurses	463	81.9	102	18.1	565	58.3

TABLE 2 Prevalence of social media addiction among candidate doctors and nurses

on social media addiction among university students, nine out of 10 Iranian university students¹² and half of the Saudi university students²⁷ were social media addicts. Social media use (Facebook, Instagram, Twitter, YouTube, etc.) has become an extremely popular tool for social interaction. Social media use is an important interactive tool for teens and young adults, and unlike traditional media, users play an active role in creating and shaping this experience.²⁸

Recent evidence suggests that 87.9% of healthcare providers use social media.²³ In this study, candidate nurses were more often addicts than candidate doctors (Table 2). With smartphone technologies, like any other segment of society, the trend has also been observed among nurses and doctors.^{12,29} Social media platforms provide an opportunity for health professionals to share medical information and disseminate knowledge for better decisionmaking.³⁰ Doctor–patient interaction on social media platforms strongly affects knowledge, efficacy, and perceived outcomes.³¹ Healthcare professionals are embracing social media as a fantastic tool to advance their careers. Healthcare practitioners use social media in their private life but using it in the workplace is affected by many factors that could facilitate or inhibit such behavior.³⁰ As an essential part of being health practitioners, nurses also use social media for either personal or vocational reasons.³² The overuse of social media has more destructive effects on life-saving jobs like nurses and doctors. Nurses increasingly waste their time and energy on social media instead of their duties. This has adversely affected their performance.²⁹ High addiction rates among candidate nurses were a challenging result in this study. Candidate nursing is an important opportunity to correctly determine and evaluate patient requirements in preclinic working periods. Social media addiction may create a serious barrier to access this opportunity. In the present study, almost two-thirds of participants were found to have an orthorexic tendency (Table 3). The results of the ON studies conducted in the university population differ from country to country. The prevalence of orthorexia was 17% in Spanish university students,³³ 32.7% in Italian university students,³⁴ and 75.0% in Polish university students.³⁵ On the contrary, a study conducted among Turkish university students, had reported that 45% of young people were orthorexic.²¹ The result obtained from this study confirmed previous findings that the high prevalence of ON among university youth in our country was compatible with the highest prevalence of the Italian study. Considering the variable results obtained from different countries, these differences may be explained by the cultural diversity and eating habits of each country. Also, the difference in the cut-off points of the scales may have an effect on the results.

Additionally, another important finding was that candidate doctors had a greater orthorexia tendency than candidate nurses (Table 3). Studies conducted in Turkish and Lebanese medical

students reported higher orthorexic prevalence, which was in line with this study.^{36,37} A study suggested that psychological stress is seen after students begin medical school especially in the initial 3 years and remain poor during the training years.³⁷ Medical and nursing students constitute one of the risk groups related to nutrition due to their education in the field of health. There are, however, other possible explanations. Medical and nursing students constitute one of the risk groups related to nutrition due to their education in the field of health. Considering how food is prepared or spending most of the day thinking about food, compound important risk factors that may cause eating disorders. For this reason, it is quite important to evaluate orthorexic tendencies among candidate doctors that are constantly experiencing high levels of stress.

Despite several reports showing that sociodemographic characteristics were effective on ON,^{33–35} the current study found an interesting result in which only family income level made a significant difference for ON. There was a clear increase between family income levels and orthorexic tendency (Table 3).

High levels of income may increase access to internet-based social media channels and purchasing power of healthy foods, leading to hypersensitivity to food consumption.

It was determined that those who did not take vitamin supplements and apply a diet program had a higher tendency towards orthorexia (Tables 3 and 5). Participants prefer to meet their vitamin needs naturally that this result supports healthy choices of orthorexia. Previous research has shown that individuals eating whole wheat cereals, as well as fruits and vegetables, were more frequently characterized as having a higher ON tendency.³⁸ These symptoms may integrate with organic nutrient-intensive and restricted eating behaviors, and people with orthorexia may find it unhealthy to take vitamin supplements or follow a diet program.

It was determined that the tendency towards orthorexia increased with the increasing level of addiction and this increase was prominently among high/very high social media addicts (Tables 4 and 5). However, a UK study reported that a high level of Instagram usage was associated with increased orthorexia tendency.¹⁸ On the contrary, another study about Facebook usage found an association with higher eating disorder risk.³⁹ Individuals can use social media to find tips on healthy eating or to commit to a fitness plan. But the quest for clean nutrition may turn into an unhealthy engagement and addiction.

4.1 | Study limitations

The present study has the following limitations: (1) The use of the ORTO-15 tool due to lack of a global measurement. (2) The population of the present study was from a peripheral university.

TABLE 3 Orthorexia tendency according to some characteristics of the participants

Characteristics	ON Tendency (n = 603, 62.2%)		Without ON tendency (n = 366, 37.8%)		Total (n = 969)		χ^2/p Value
	No.	%	No.	%	No.	%	
Age groups (years)							1.828/0.176
≤21	395	63.8	224	36.2	619	63.9	
≥22	208	59.4	142	40.6	350	36.1	
Gender							3.315/0.069
Male	372	60.1	249	39.9	619	63.9	
Female	231	66.0	119	34.0	350	36.1	
Candidate							34.320/0.000
Doctors	295	73.0	109	27.0	404	41.7	
Nurses	308	54.5	257	45.5	565	58.3	
Family income (monthly) (USD)							7.195/0.027
≥1,000	150	68.5	69	31.5	219	22.6	
500–999	369	61.8	228	38.2	597	61.6	
<500	84	54.9	69	45.1	153	15.8	
Chronic problems							2.608/0.106
Had	46	54.1	39	45.9	85	8.8	
Had not	557	63.0	327	34.0	884	91.2	
Health perception							3.588/0.166
Good	356	64.0	200	36.0	556	57.4	
Moderate	176	57.9	128	42.1	304	31.4	
Bad	71	65.1	38	34.9	109	11.2	
Vitamin supplement							17.789/0.000
Taken	72	47.1	81	52.9	153	15.8	
Not taken	531	65.1	285	34.9	816	84.2	
Use a diet program							17.596/0.000
Yes	50	44.2	63	55.8	113	11.7	
No	553	64.6	303	35.4	856	88.3	
Physical activity							1.145/0.564
None	110	61.5	69	38.5	179	18.5	
Sometimes	367	63.5	211	36.5	578	59.6	
Regular (30 min/day)	126	59.4	86	40.6	212	21.9	
Weight satisfaction							1.778/0.181
Satisfied	377	63.9	213	36.1	590	60.9	
Nonsatisfied	226	59.6	153	40.4	379	39.1	
BMI							5.020/0.081
Malnutrition	65	67.7	31	32.3	96	9.9	
Normal	434	63.3	252	36.7	686	70.8	
Overweight/obese	104	55.6	83	44.4	187	19.3	

Social media addiction levels	ON Tendency (n = 603, 62.2%)		Without ON tendency (n = 366, 37.8%)		Total (n = 969; %)		χ^2/p Value
	No.	%	No.	%	No.	%	
No addiction	111	18.4	94	25.7	205	21.2	8.371/ 0.039
Little addiction	151	25.0	87	23.8	238	24.6	
Moderate addiction	154	25.5	75	20.5	229	23.6	
High/very high addiction	187	31.0	110	30.1	297	30.7	

TABLE 4 Orthorexia nervosa tendency among participants according to social media addiction levels

TABLE 5 Logistic regression analysis of effective variables on orthorexia tendency

Variables	ON tendency		p Value
	OR	95% CI	
No vitamin supplement	1.68	1.125–2.526	0.011
Nondiet	1.73	1.093–2.742	0.019
Social media addiction	1.37	1.043–1.809	0.024

Abbreviations: 95% CI, 95% confidence interval; ON, orthorexia nervosa; OR, odds ratio.

5 | CONCLUSIONS

In summary, in this study, it was found that the prevalence of orthorexia tendency was high and social media addiction was common among candidate doctor and nurse populations. Social media addiction was found to be associated with orthorexia tendencies.

5.1 | Implications for psychiatric nursing practice

Candidate nurses and doctors are the heart and soul of healthcare systems and should be seen as a vulnerable group for eating behaviors and social media addiction. Due to societal stigma and lack of awareness, it is possible that orthorexia tendency and social media addiction among candidate doctors and nurses may go unrecognized and under-reported. Investigating preclinical years may be important to help early detection of orthorexia tendency and social media addiction for the two groups. A combination of therapy and nutrition education can help recover from orthorexia tendencies. Further research strongly recommended examining more closely the links between social media addiction and orthorexia among these populations. Also, there is a need to promote social media literacy, which was identified as the top source of information for “clean” eating.

DATA AVAILABILITY STATEMENT

The author confirms the absence of shared data.

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