



Research Article/Özgün Araştırma

The effect of death anxiety on orthorexia nervosa tendencies in type 2 diabetes patients

Tip 2 diyabet hastalarında ölüm kayısının ortoreksiya nervoza eğilimleri üzerine etkisi

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Abstract

Aim: This study was conducted to investigate the effect of death anxiety on orthorexia nervosa tendencies in patients with Type 2 diabetes.

Materials and Methods: This study was conducted with 200 Type 2 diabetes patients who referred to internal medicine outpatient clinics of a university hospital in Elazığ, a city in the east of Turkey. The data were collected by using “Descriptive Information Form”, “Death Anxiety Scale (DAS)” and “Orthorexia-11 Scale (ORTO-11)”.

Results: The mean DAS score of the patients was 11.41±2.09, while their mean ORTO-11 score was found as 23.69±6.09. It was found that DAS total score was a significant and negative predictor ($\beta = -.540$, $p < 0.001$) and explained 29 % of ORTO-11 total score.

Conclusion: Patients with Type 2 diabetes were found to have high level of death anxiety and moderate level of orthorexia nervosa tendency. It was found that orthorexia nervosa tendency increased as death anxiety increased.

Keywords: Diabetes mellitus; Death; Feeding and Eating Disorders; Nursing.

Öz

Amaç: Bu çalışma Tip 2 diyabetli hastalarında ölüm kaygısının ortoreksiya nervoza eğilimleri üzerine etkisini incelemek amacıyla yapıldı.

Gereç ve Yöntem: Bu çalışma, Türkiye'nin doğusunda yer alan Elazığ ilinde bir üniversite hastanesinin dahiliye polikliniğine başvuran 200 Tip 2 diyabet hastası ile gerçekleştirildi. Veriler “Tanımlayıcı Bilgi Formu”, “Ölüm Kaygısı Ölçeği (DAÖ)” ve “Ortoreksiya-11 Ölçeği (ORTO-11)” kullanılarak toplandı.

Bulgular: Hastaların DAS puanı ortalaması 11,41±2,09, ORTO-11 puanı ortalaması ise 23,69±6,09 olarak belirlendi. DAS toplam puanının anlamlı ve negatif bir yordayıcı olduğu ($\beta = -.540$, $p < 0,001$) ve ORTO-11 toplam puanının % 29'unu açıkladığı belirlendi.

Sonuç: Tip 2 diyabetli hastaların yüksek düzeyde ölüm kaygısı ve orta düzeyde ortoreksiya nervoza eğilimine sahip oldukları belirlendi. Ölüm kaygısı arttıkça ortoreksiya nervoza eğiliminin arttığı belirlendi.

Anahtar Kelimeler: Diabetes Mellitus; Ölüm; Beslenme ve Yeme Bozuklukları; Hemşirelik.

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Introduction

Diabetes Mellitus is a metabolic disease which affects all systems of the body and which is characterized by an increase in blood glucose level as a result of the inability to secrete insulin hormone or a decrease in the effect of insulin.^{1,2} The disease has two types as Type 1 and Type 2 diabetes. Type 1 diabetes is usually seen among young people and accounts for 5-10% of diabetes patients. Type 2 diabetes is usually seen among adults and accounts for 90-95% of diabetes cases.² According to World Health Organization (WHO) data, it has been reported that there are approximately 422 million diabetes patients in the world today, the prevalence of type 2 diabetes has increased dramatically in the last three decades and diabetes is among the leading causes of death in the world.³

Due to the prevalence of the disease and its effects that may result in death, patients with diabetes may experience death anxiety.^{4,6} Death anxiety includes anticipating death and being afraid of the process of dying.⁷ The death anxiety experienced by diabetes patients can hinder the adoption of necessary behaviors for managing diabetes and increase the risk of complications arising from the disease.^{5,6,8,9} Doğan et al. reported that high level of death anxiety in patients hospitalized for diabetes triggered depression.⁵ Death anxiety can lead to complications in diabetes patients, such as cardiovascular diseases, nephropathy, neuropathy, and retinopathy, making it essential to prevent it and minimize its effects.^{5,8,9} Regarding the importance of this concept in providing healthcare to patients, death anxiety is accepted as a nursing diagnosis by North American Nursing Diagnosis Association (NANDA).¹⁰ For this reason, it is thought that nursing care is important in determining death anxiety and related factors and implementing interventions to decrease anxiety in patients with diabetes.^{5,6}

In order to cope with the death anxiety they experience, patients may turn to healthy eating behaviors that are effective in symptom control and prevention of complications in diabetes.¹¹ Healthy diet, which is important in diabetes management, is an effective method to keep glycemic, lipid and blood pressure at normal

levels.¹² For this reason, adherence to a healthy diet is an indispensable part of effective self-management of the disease process for patients with diabetes mellitus.^{11,12} Since adherence to a healthy diet is essential in the disease, it is reported that patients with diabetes are often overly occupied with their diets.¹³⁻¹⁵ This situation can turn healthy eating behaviors into an obsession in patients with diabetes. These obsessive behaviors may cause Orthorexia Nervosa, which is an eating disorder that is not commonly known in literature, in individuals.¹⁴⁻¹⁶

Orthorexia nervosa refers to the desire for healthy eating. Unlike patients with anorexia and bulimia who are concerned about the quantity of food, patients with orthorexia nervosa are concerned about the quality of food.^{15,16} As in patients with obsessive compulsive disorder, occupational and social functionality may be impaired in patients with orthorexia nervosa as a result of spending a large part of the time with strict rules.¹⁷ Orthorexia nervosa is currently not an official psychiatric diagnosis and it is not included in DSM-5 as an eating disorder. Research is helping to develop a new definition and to define diagnostic criteria for advanced versions of DSM.¹⁸ Therefore, researches on orthorexia nervosa are important.¹³

There are limited numbers of studies examining orthorexia nervosa in patients with diabetes and there is not enough information on the effects of this disorder in patients with diabetes.^{13,14} There are no research data on the prevalence of orthorexia nervosa in patients with diabetes in many countries.¹³⁻¹⁵ According to the results of the limited numbers of studies conducted, it is emphasized that there is a concern that the rate of individuals with orthorexia nervosa tendencies will increase in the near future.^{13,19} For these reasons, it is thought that there is a need for studies to be conducted in this field.

Patients with type 2 diabetes need to keep their blood sugar levels under control throughout their lives in order to maintain a healthy lifestyle. Therefore, these patients generally have to plan their meals, pay attention to portion sizes, and monitor their carbohydrate intake.^{11,15,16} Consequently, it is

believed that the fear of death may influence eating behaviors, which are an important aspect of diabetes management. Due to this fear, patients might focus on consuming only healthy foods and avoid unhealthy ones.¹¹ It is thought that the desire to cope with the fear of death and the wish to sustain life may increase the likelihood of type 2 diabetes patients developing tendencies toward orthorexia nervosa. As a result, it is thought that death anxiety and thoughts of avoiding death may trigger orthorexia nervosa in patients with diabetes. When the literature was reviewed, no studies were found in which the components of death anxiety and healthy eating obsession were discussed together in diabetes patients.

This study was conducted to investigate the effect of death anxiety on orthorexia nervosa tendencies in patients with Type 2 diabetes. The data from the current study is expected to contribute to a better understanding of the concepts of fear of death in diabetes and orthorexia, which are not well known, and to demonstrate the relationship between these concepts. Additionally, since the research team did not encounter similar studies in the literature, this study is considered one of the pioneers in the field.

Research questions

- What is the level of death anxiety and orthorexia nervosa tendencies in type 2 diabetes patients?
- Is there a relationship between descriptive characteristics death anxiety, orthorexia nervosa tendencies in type 2 diabetes patients?
- Is there a relationship between death anxiety and orthorexia nervosa tendencies in type 2 diabetes patients?

Materials and Methods

Type of research

The study has a cross-sectional and correlational design.

Population and sample of the study

Population of the study consisted of patients with Type 2 diabetes who referred to internal medicine outpatient clinics of a university hospital in Elazığ, which is on the east of

Turkey, between January 2022-January 2023. The convenience sampling method was used in the study. Sample of the study was calculated by considering the mean score of country variable in Özdemir et al. (2021)'s study (for the t test to compare two groups). As a result of prior power analysis in G*Power 3.1.9.2 program, effect size was calculated as 0.520 (high effect size), with 0.05 level of significance and 0.95 power.¹⁶ Thus, the minimum number of patients to be included in the study was found as 168. The study was completed with 200 patients who met the inclusion criteria and who agreed to participate in the study between the aforementioned dates.

Inclusion criteria

- Having been diagnosed with Type 2 diabetes at least 6 months ago
- Being ≥ 18 years of age
- Having no history of psychiatric disease
- Having no impairments (such as sight, speech and hearing) that will prevent the patient from communicating

Data collection tools

Study data were collected in 10-15 minutes through face-to-face interviews with the patients. Research data were collected in a waiting room at the institution where the research was conducted. "Descriptive Information Form", "Death Anxiety Scale" and "Orthorexia-11 Scale" were used to collect data.

Descriptive information form

This form prepared by the researchers includes a total of 10 questions on the patients' age, marital status, gender, educational status, income status, employment status, diagnosis time, the state of having information about the disease, the state of having complications and the presence of another chronic disease.

Death anxiety scale (DAS)

The scale was developed by Templer to evaluate individuals' anxiety and fears about their death and the risk of death.²⁰ Turkish validity and reliability study of the scale was conducted by Akça and Köse.²¹ The scale is a 15-item scale that can be responded as right-wrong. Each "yes" response is scored as "1",

while each “no” response is scored as “0” in the first 9 items; in the remaining 6 items, each “no” response is scored as “1”, while each “yes” response is scored as “0”. Total score shows the death anxiety score. Higher score is interpreted as higher death anxiety. While the minimum possible score from the scale is “0”, the maximum possible score is 15. A score between 0 and 4 is evaluated as “mild level” death anxiety, a score between 5 and 9 is evaluated as “moderate level” death anxiety, a score between 10 and 14 is evaluated as “severe level” death anxiety, and a score of 15 is evaluated as “panic level” death anxiety.²¹ Cronbach’s alpha value was 0.75 in the Turkish validity and reliability study.²¹ Cronbach’s alpha was found to be 0.87 in the present study.

Orthorexia-11 scale (ORTO-11)

It was developed by Donini et al. to evaluate orthorexia nervosa tendency.¹⁹ Turkish validity and reliability study was conducted by Arusoğlu et al. The scale is a 4-Likert type scale with 11 items.¹⁷ The responses that are distinguishing for orthorexia are scored as “1”, the responses that are distinguishing for normal eating behavior tendency are scored as “4”; minimum possible score is 11, while the maximum possible score is 55. Low scores indicate orthorectic tendency. The higher the scores get, eating behavior approaches from oversensitivity to normal.^{17,19} Cronbach’s alpha value was 0.62 in the Turkish validity and reliability study.¹⁷ Cronbach’s alpha was found to be 0.79 in the present study.

Data analysis

SPSS version 22.00 program was used for the analysis of data in the study. Percentage, mean and standard deviation were used in descriptive statistics. Kurtosis and Skewness coefficients were used to analyse the normality distribution of the data. Multiple linear regression analysis was used in data analysis. In multiple linear regression analysis, the 'ENTER' method was used to include the variables in the model. Multicollinearity and independence of residuals were tested in the regression model. The independence of factors was determined (none of the correlation coefficients between variables that influenced

DAS and ORTO-11 was above 0.45). After verifying the error term's basic assumptions, the Durbin-Watson test statistic showed no autocorrelation. The tolerance limit of multicollinearities was ≥ 0.1 , The variance inflation factor (VIF) was < 10 . The conditions for the error terms' normality and homoscedasticity were satisfied. Simple linear regression analysis was performed to investigate the effects of patients' DAS scores on ORTO-11 scores. Significance level was considered as $p < 0.05$.

Ethics committee approval

Before starting the study, approval was taken from the Non-interventional Research Ethics Committee (29.09.2021 dated and E-97132852-050.01.04-90384 numbered) of a university and permission was taken from the institution where the study was conducted. The patients included in the study were provided with the required explanations about the purpose and method of the study and their verbal consent was taken. The study was carried out in line with the ethical standards of the Declaration of Helsinki. Individuals who volunteered to participate were included in the study and their personal identity information was kept confidential.

Results

Mean age of the patients was found as 52.59 ± 17.84 years. It was found that 50.5% of the patients were female, 77% were married, 40% were illiterate, 71% had an income equal to expense, 78% were not working, 40% had a diagnosis year of 6 years and longer, 58.5% did not have sufficient information, 59% had a diabetes complication and 55.5% had another chronic disease (Table 1).

Mean DAS total score of the patients was found as 11.41 ± 2.09 , while their mean ORTO-11 total score was found as 23.69 ± 6.09 (Table 2).

Multiple regression analysis was conducted to make estimations about the variables of age, gender, presence of another chronic disease, the state of having diabetes complications, diagnosis year, marital status, the state of having information about the disease, income status, employment status and educational

status and mean DAS and ORTO-11 total scores. When the analysis result for mean DAS total score was examined, the created model was found to be statistically significant $F(15,184): 9.136, p<0.001$. It was found that of the variables included in the model, age, having diabetes complication (yes), gender (female) were statistically significant and positive predictors of death anxiety ($\beta= .260$; $\beta= .206$; $\beta= .213, p<0.05$), while educational status (postgraduate) was a statistically

significant and negative predictor of death anxiety ($\beta=-.237, p<0.05$). When the analysis result for mean ORTO-11 total score was examined, the created model was found to be statistically significant $F(15,184): 4.458, p<0.001$. It was found that of the variables included in the model, the state of having diabetes complication was a statistically significant and negative predictor of orthorexia nervosa tendency ($\beta= -.239, p=.015$) (Table 3).

Table 1. Descriptive characteristics of the patients.

| Characteristics | n (n=200) | % |
|----------------------------------------------------------|-------------------|------|
| Gender | | |
| Female | 101 | 50.5 |
| Male | 99 | 49.5 |
| Marital status | | |
| Married | 154 | 77 |
| Single | 46 | 23 |
| Educational status | | |
| Illiterate | 80 | 40 |
| Literate | 23 | 11.5 |
| Primary education | 46 | 23 |
| High school | 40 | 20 |
| Undergraduate and higher | 11 | 5.5 |
| Income status | | |
| Income<expense | 48 | 24 |
| Income=expense | 142 | 71 |
| Income>expense | 10 | 5 |
| Employment status | | |
| Employed | 44 | 22 |
| Unemployed | 156 | 78 |
| Diagnosis year | | |
| 0-2 years | 62 | 31 |
| 2-6 years | 58 | 29 |
| ≥ 6 years | 80 | 40 |
| The state of having information about the disease | | |
| Adequately | 83 | 41.5 |
| Inadequate | 117 | 58.5 |
| The state of having diabetes complications | | |
| Yes | 118 | 59 |
| No | 82 | 41 |
| Presence of another chronic disease | | |
| Yes | 111 | 55.5 |
| No | 89 | 44.5 |
| | Mean \pm SD | |
| Age | 52.59 \pm 17.84 | |

Table 2. Mean DAS and ORTO-11 scores of the patients.

| | Mean \pm SD | Min. | Max. | Skewness | Kurtosis |
|----------------------|------------------|-------|-------|----------|----------|
| DAS Total | 11.41 \pm 2.09 | 7.00 | 14.00 | -.37 | -.91 |
| ORTO-11 Total | 23.69 \pm 6.09 | 11.00 | 40.00 | .47 | -.17 |

DAS: Death Anxiety Scale, ORTO-11: Orthorexia 11 Scale

Table 3. Regression analysis results in terms of descriptive characteristics.

| Dependent variables | Model | Independent variables | B | S.E | Standard (Beta) | t | p | 95% Confidence interval | | | |
|---------------------|-------|---------------------------------------|--------|-------|---------------------|-------|--------|-------------------------|--------|--|--|
| | | | | | | | | Lower | Upper | | |
| DAS | 1 | Constant | 8.977 | .904 | | 9.936 | .000* | 7.195 | 10.760 | | |
| | | Age | .030 | .013 | .260 | 2.356 | .020** | .005 | .056 | | |
| | | Diabetes Complication (Yes) | .874 | .366 | .206 | 2.392 | .018** | .153 | 1.596 | | |
| | | Gender (Female) | .890 | .260 | .213 | 3.421 | .001** | .377 | 1.403 | | |
| | | Education (Postgraduate) | -2.170 | .710 | -.237 | - | .003** | -3.571 | -.770 | | |
| | | R=.657, R ² =.442 | | | Durbin Watson:0.667 | | | | | | |
| | | F _(15,184) =9.136, p=.000* | | | | | | | | | |
| | | F _(15,184) =9.136, p=.000* | | | | | | | | | |
| ORTO-11 | 2 | Constant | 25.322 | 2.989 | | 8.472 | .000* | 19.425 | 31.220 | | |
| | | Complication (Yes) | -2.958 | 1.209 | -.239 | - | .015** | -5.344 | -.572 | | |
| | | R=.516, R ² =.267 | | | Durbin Watson:1.690 | | | | | | |
| | | F _(15,184) =4.458, p=.000* | | | | | | | | | |
| | | F _(15,184) =4.458, p=.000* | | | | | | | | | |

*p<0.001. **p<0.05 DAS: Death Anxiety Scale, ORTO-11: Orthorexia 11 Scale

As a result of the multiple regression analysis, the created model was found to be statistically significant (F(1.198)=29.130, p<0.001). It was found that independent

variable DAS total score was a significant and negative predictor (β= -.540, p<0.001) and explained 29% of dependent variable ORTO-11 total score (Table 4).

Table 4. Regression analysis results.

| Dependent variables | Model | Variables | B | S. Error | β | t | p | 95% Confidence interval | |
|--------------------------------------|-------|------------------------------|--------|----------|---------------------|--------|-------|-------------------------|--------|
| | | | | | | | | Lower | Upper |
| ORTO-11 | 1 | Constant | 15.805 | .503 | | 31.453 | .000* | 14.814 | 16.796 |
| | | DAS | -.186 | .021 | -.540 | -9.030 | .000* | -.226 | -.145 |
| | | R=.540, R ² =.292 | | | Durbin Watson:1.606 | | | | |
| F _(1,198) =81.541 p=.000* | | | | | | | | | |

*p<0.000, DAS: Death Anxiety Scale, ORTO-11: Orthorexia 11 Scale

Discussion

In the present study, it was found that patients with Type 2 diabetes mellitus had high levels of death anxiety. Although there are studies examining anxiety in patients with Type 2 diabetes in literature, there are limited numbers of studies examining death anxiety.^{4,6} In the study they conducted in Turkey, Doğan et al. found that patients with diabetes experienced high levels of death anxiety.⁵ An increase has been reported in the frequency and intensity of death-related thoughts in chronic diseases such as diabetes.^{22,23} In this context, a large number of individuals with chronic diseases are actually not ready to die while they are facing with the truth that “death is inevitable”.²³ Patients with diabetes may experience death anxiety more intensely due to the fact that diabetes does not have a definitive treatment and due to its serious complications.⁶ It can be thought that after the COVID-19 epidemic, thoughts that individuals with

chronic diseases have a higher risk of death in epidemics trigger death anxiety.²⁴

In the present study, death anxiety was found to increase with advancing age. Different results can be seen in studies examining age and death anxiety in literature. Anxiety and death anxiety are expected to increase with age.^{25,26} However, there are also studies reporting that death anxiety decreases with age.^{4,27} The reason for this can be the fact that a large number of variables such as the patients’ living conditions, psychosocial and cultural factors and individual differences affect death anxiety.

In the present study, diabetes complications were found to be a factor increasing death anxiety. Anxiety is traditionally associated with increased medical complications in individuals with Type 2 diabetes, Masmoudi et al. emphasized that diabetes patients who experienced complications had high levels of

anxiety.^{8,9} However, Edwards and Mezuk found that complications were not associated with anxiety in Type 2 diabetes.²⁸ It can be thought that the severity of complications and the differences in coping skills of individuals might have caused this difference.

In the present study, death anxiety was found to be high in female patients. Women were found to have higher anxiety levels in studies conducted with Type 2 diabetes patients.^{26,28} Russac et al. reported that women experienced death anxiety more frequently than men.²⁷ Missler et al. reported that women experienced more fear than men about their death and the death of their loved ones.²⁵ Traditional gender roles can influence how women experience and express their fear of death. In Eastern countries, both women and men are expected to suppress their health concerns and feelings about death. In our country, however, unlike in Western and Middle Eastern countries, it is considered normal for women to express their health concerns, fears of death, and thoughts related to death, while men are expected to be stronger.^{29,30} Additionally, the caregiving responsibilities that come with traditional female identity can lead women to worry more about the futures of their loved ones and experience greater fear of death. Another factor is that women are generally more active than men in forming social support networks. This can provide women with more opportunities to share and express their fears of death.²⁹⁻³¹ All these gender-based factors are thought to contribute to women experiencing a greater fear of death.

In the present study, it was found that having postgraduate degree decreased death anxiety. Bjelland et al. reported that high level of education had a protective effect against anxiety that built throughout life.³² Ganasegeran et al. found that Type 2 diabetes patients with high level of education experienced less anxiety.³³ Education enables individuals to understand the process and complications of disease correctly and makes it easier for them to manage the disease process.

In the present study, patients with Type 2 diabetes mellitus were found to have moderate

level of orthorexia nervosa tendencies. In a systematic review they conducted, Grammatikopoulou et al.¹³ pointed out that there were limited numbers of studies examining orthorexia nervosa tendencies in patients with diabetes.¹³ There are studies in the literature investigating the relationship between eating disorders and diabetes.³⁴⁻³⁷ Although these studies emphasize that eating disorders are a common problem in diabetic patients, the information about the relationship between diabetes and orthorexia nervosa is limited.^{14-16,38,39} Barbanti et al. showed that 65.5% of the patients had orthorexic features in their study with 887 individuals with type 2 diabetes.³⁹ Despite this high rate of orthorexia nervosa in diabetic patients, the factors affecting it and its effects on the disease are not yet fully known.^{38,39} The obsession to control food can put patients with diabetes at risk for orthorexia nervosa. In the present study, experiencing diabetes complications was found to increase orthorexia nervosa tendencies. Experiencing diabetes related complications may have a negative effect on individuals' life quality and mental health.^{8,9} It can be said that this situation causes diabetes patients to tend to consume healthier foods to protect their health and healthy eating behaviors become an unhealthy obsession.

In the present study, death anxiety and orthorexia nervosa were found to be associated and patients' orthorexia nervosa tendencies were found to increase as their death anxiety levels increased. It has been emphasized in the literature that death anxiety can affect eating disorders.⁴⁰⁻⁴² Studies involving diabetic patients indicate that as anxiety levels increase, the prevalence of eating disorders also rises.^{43,44} Swinbourne et al.⁴⁵ reported a high comorbidity rate of 65% for eating and anxiety disorders. However, there is a lack of literature examining the co-occurrence of death anxiety and tendencies toward orthorexia nervosa in diabetic patients. It has been reported that the foundation of orthorexia nervosa lies in perfectionistic and obsessive-compulsive attitudes towards nutrition.^{15,16,40} Le Marne and Harris noted that death anxiety and general anxiety are associated with perfectionism and obsessive-compulsive disorder, which can

influence healthy eating obsessions.⁴⁰ Fitzsimmons et al.⁴⁶ found that as individuals' anxiety levels increase, their dieting behaviors also tend to rise, potentially triggering perfectionistic eating behaviors. Diabetic patients may engage in perfectionistic dieting as a way to cope with their anxiety related to disease management.^{47,48} Menzies has indicated that death anxiety is linked to obsessive thoughts and behaviors.⁴⁹ The orthorexia nervosa examined in this study is thought to arise from perfectionistic and compulsive behaviors related to nutrition, suggesting that it may emerge as a coping mechanism for dealing with death anxiety. Another factor that may influence this finding is the health-related anxieties prompted by orthorexia nervosa.^{50,51} Abramowitz et al.⁵⁰ emphasized that health-related anxieties and hypochondriasis are associated with anxiety. Maner et al.⁵¹ reported that anxiety can lead to avoidance of risky health behaviors. In patients with Type 2 diabetes, anxiety can shape disease management behaviors and health-related quality of life.⁵²⁻⁵⁴ Since the anxiety experienced by diabetic patients can influence their health behaviors, it is believed that death anxiety may lead to the development of orthorexia nervosa.

Study limitations

This study has several limitations. First, the data were collected using self-report scales, which raises the possibility of common method biases. Second, the study was conducted at a single center with a limited number of patients. Third, a limitation of the study is that it could not be determined which complications of diabetes are associated with fear of death. The fourth limitation is that probability sampling methods were not used in this study. Another significant limitation is the absence of research examining the relationship between orthorexia nervosa and death anxiety in patients with Type 2 diabetes. Additionally, the lack of studies investigating orthorexia nervosa and death anxiety in different groups has restricted our discussion. These challenges have made it difficult to interpret our findings comprehensively. However, this aspect of our research adds originality to it.

Conclusion

As a result of the study, patients with Type 2 diabetes were found to have high level of death anxiety and moderate level of orthorexia nervosa tendency. Orthorexia nervosa tendencies of patients were found to increase as their death anxiety levels increased. As a result of this study, it is recommended to examine death anxiety levels of diabetes patients periodically and to implement interventions on those who have high levels. It is recommended for healthcare professionals working with diabetes patients to train patients about healthy eating, to be aware of obsessive eating behaviors and to implement interventions to patients who show these tendencies. In addition, in line with the results of the present study, it is thought that conducting nursing interventions to decrease death anxiety of diabetes patients will be effective in decreasing their orthorexia nervosa tendencies. Methodological studies are needed to find out the factors that may affect death anxiety and orthorexia nervosa tendencies in diabetic patients and to establish a causal relationship.

Ethics Committee Approval

Before starting the study, approval was taken from the Non-interventional Research Ethics Committee (29.09.2021 dated and E-97132852-050.01.04-90384 numbered) of a university and permission was taken from the institution where the study was conducted. The patients included in the study were provided with the required explanations about the purpose and method of the study and their verbal consent was taken. The study was carried out in line with the ethical standards of the Declaration of Helsinki. Individuals who volunteered to participate were included in the study and their personal identity information was kept confidential.

Informed Consent

Informed consent was obtained from the individuals participating in the study.

Authors Contributions

All of the authors contributed at every stage of the study.

Conflict of Interests

There is no conflict of interest to declare.

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Peer-review

Externally peer-reviewed.

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