



Original Article

Evaluation of dietary habits and related parameters in a group of inpatients with mental disorders

✉ Mahinur Betül Çalışkan,¹ ✉ Duygu Özer,² ✉ Gül Dikeç,³ ✉ Elvan Emine Ata⁴

¹Istanbul Provincial Health Directorate, İstanbul, Türkiye

²Division of Psychiatric Nursing, Department of Nursing, Bartın University Faculty of Health Sciences, Bartın, Türkiye

³Department of Nursing, Fenerbahçe University Faculty of Health Sciences, İstanbul, Türkiye

⁴Department of Psychiatric Nursing, University of Health Sciences, Hamidiye Faculty of Nursing, İstanbul, Türkiye

Abstract

Objectives: This study aimed to examine the dietary habits and related parameters of individuals with mental disorders.

Methods: This study was descriptive and cross-sectional. The sample consisted of 94 individuals hospitalized in the psychiatric clinic of a hospital between June and December 2021. Data were collected using an information form created by the researchers.

Results: Of the participants, 83% were male, and 25.5% had a chronic physical illness. The patients had a diagnosis of mental disorder for an average of 6.07 years. The most common side effect was an increase in appetite (36.4%). Additionally, 76.6% ate within 15 minutes, 93.6% consumed fish once a week or never, and 56.4% never exercised. Individuals who consumed home-cooked meals had lower BMI averages than those who consumed fast food. A weakly significant positive correlation was found between BMI and waist circumference averages and the duration of medication use. Individuals with anxiety disorders had lower waist circumference, glucose, and LDL values compared to those with mood disorders. In contrast, individuals with psychotic disorders had significantly lower LDL levels than those diagnosed with mood disorders.

Conclusion: Individuals with mental disorders were found to have inadequate and unbalanced nutrition, consuming diets rich in carbohydrates and low in protein, which negatively affected their parameters. Psychiatric nurses should evaluate the dietary habits of patients and provide counseling about healthy nutrition.

Keywords: Dietary habits; mental disorder; psychiatric nursing.

It is stated that individuals with mental disorders live 8–25 years less than the general population due to negative dietary habits, sedentary lifestyle, obesity, smoking, cardiovascular disorders, and poor living conditions.^[1–4] Psychotropic medications used in the treatment of patients negatively affect their physical health by increasing the risk of weight gain, metabolic syndrome, and diabetes, thereby elevating cardiovascular risk.^[4–7] In addition to these circumstances, psychosocial difficulties also affect individuals' physical and

mental health. Stigmatization, social isolation, low motivation, and limited access to social support further exacerbate lifestyle habits and reduce adherence to healthy behaviors.^[2,4,5] Furthermore, economic difficulties and structural inequalities limit the ability of individuals with mental disorders to make healthier dietary choices.^[3,8] These psychosocial difficulties not only aggravate unhealthy lifestyle patterns but also reduce treatment adherence, diminish motivation for behavioral change, and weaken the impact of preventive

Address for correspondence: Duygu Özer, Bartın Üniversitesi Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Psikiyatri Hemşireliği

Anabilim Dalı, Bartın, Türkiye

Phone: +90 506 129 19 78 **E-mail:** duyguozer2016@hotmail.com **ORCID:** 0000-0001-5800-5099

Submitted Date: March 17, 2025 **Revised Date:** August 26, 2025 **Accepted Date:** September 30, 2025 **Available Online Date:** October 07, 2025

Journal of Psychiatric Nursing - Available online at www.phdergi.org



interventions.^[2,3,5] Therefore, addressing stigma, isolation, and low motivation is as essential as managing biological risk factors in promoting healthier lifestyles among individuals with mental disorders.

Obesity, recognized as one of the most critical health problems of our time, is observed across all age groups and socioeconomic levels.^[1,2] Additionally, the dietary habits of individuals with mental disorders are adversely affected by many factors, such as continuous medication, the effect of medication on appetite, decreased physical activity, worsening living conditions, and decreased income level.^[3,5-7] Patients with schizophrenia, in particular, are known as a risk group in terms of obesity.^[6] In studies examining the dietary habits of patients with schizophrenia, it has been found that these patients have inadequate fiber intake and fruit consumption, high saturated fat consumption, and excessive sugar and carbohydrate intake in their diets.^[3,6-8] In these patients, a nutrient-poor and high-calorie diet causes insulin resistance, leading to an increased prevalence of obesity and metabolic syndrome.^[7] An increased risk of diabetes and cardiovascular disease accompanies these conditions.^[6,7] In addition to patients with schizophrenia, individuals with bipolar mood disorder also show different eating patterns: in manic episodes, inadequate food and calorie intake is common, while in depressive episodes, overeating or eating less or more than the body requires due to decreased appetite is observed.^[1,7] Moreover, the prevalence of metabolic syndrome is also reported to be high in patients with bipolar mood disorder.^[9]

Abdominal obesity, glucose intolerance, or diabetes mellitus constitute a set of risk factors that contribute to systemic disorders such as dyslipidemia, hypertension, and coronary artery disease.^[10] Therefore, early identification of dietary risk factors in individuals with mental disorders and the implementation of preventive strategies are essential not only to reduce healthcare costs but also to improve life expectancy and quality of life.^[3,10] Evaluating the dietary habits of individuals with different mental disorders and revealing the factors affecting this situation can also be used as a preventive intervention to protect these individuals from physical health problems.^[1] Despite their relevance, the dietary patterns of individuals with mental disorders—similar to other aspects of their physical health—are often overlooked and neglected in clinical practice.^[1,11]

In addition to the side effects of psychotropic agents, it is also crucial to assess patients' dietary habits in holistic nursing assessments. Psychiatric nurses can support patients in developing healthier habits by integrating the assessment of eating behaviors with lifestyle counseling and health promotion. In particular, changing unhealthy eating habits can reduce cardiovascular risk by controlling modifiable risk factors. Consid-

What is presently known on this subject?

- Mental disorders are associated with a higher risk of additional physical symptoms such as metabolic syndrome and diabetes. Unhealthy dietary habits and substance use observed in individuals with mental disorders also increase these risks. A limited number of studies have investigated the correlation between the dietary habits and metabolic values of individuals with mental disorders. This study aimed to examine the dietary habits and related parameters of individuals with mental disorders.

What does this article add to the existing knowledge?

- It has been determined that individuals with mental disorders do not have adequate and balanced nutrition, consume a diet rich in carbohydrates and low in protein, and consequently experience deterioration in related parameters.

What are the implications for practice?

- Psychiatric nurses should regularly screen individuals with mental disorders for the risk of metabolic syndrome and diabetes with a holistic perspective, evaluate their lifestyle and dietary habits, and implement educational and behavioral interventions to improve their health perception.

ering that patients often lose their lives due to cardiovascular causes, the effects of nursing-led interventions by psychiatric nurses to improve patients' dietary habits and increase their motivation in this regard may contribute to a reduction in patient mortality rates in the long term.

In our country, Türkiye, there are limited studies examining the dietary habits of individuals with different diagnoses of mental disorders.^[1,8] This study, therefore, aims to contribute necessary evidence to the literature by emphasizing the significance of physical health in psychiatric settings and highlighting the responsibility of psychiatric nurses to deliver holistic care that encompasses both mental and physical dimensions.

The Study Questions

1. What are the dietary habits of individuals with mental disorders?
2. Is there a significant difference between the dietary habits of individuals and BMI?
3. Is there a significant difference between the sociodemographic characteristics of individuals and BMI, WC, glucose, total cholesterol, HDL, LDL, and triglyceride values?
4. Is there a significant relationship between individual characteristics and laboratory results?

Materials and Method

Aim

This study aimed to examine the dietary habits of individuals diagnosed with mental disorders and to evaluate related parameters, including body mass index (BMI), laboratory values (e.g., glucose and lipid profile), and dietary patterns.

Type of Research

This study was descriptive and cross-sectional.

Place and Time of the Study

The study was conducted in the psychiatry clinic of a training and research hospital in Istanbul between June and December 2021. The hospital where the data were collected is a former military hospital. Although it is now affiliated with the Ministry of Health, a higher number of military personnel are still hospitalized there. Therefore, the sample consists of more male individuals. The psychiatry clinic is an open ward with 12 beds in the general hospital. Individuals diagnosed with psychotic disorders, anxiety, depression, and, to a lesser extent, substance use disorders are hospitalized in the clinic.

Population and Sample of the Study

The study population consisted of individuals who were followed up as inpatients in the psychiatry clinic between June and December 2021 in the training and research hospital where the study was conducted. In the study, no sample selection was made; all individuals hospitalized in the psychiatry clinic within the specified date range and who met the inclusion criteria were attempted to be reached. During this period, 246 admissions were made to the psychiatry clinic. Of these, 138 were repeated hospitalizations of the same individuals. Among the 108 people who were hospitalized, 12 refused to participate in the study, and 2 were excluded due to not speaking Turkish. The study was completed with 94 people (Fig. 1).

Sample size calculation was performed using G*Power software version 3.1.9.4. The minimum number of individuals included in the sample was determined as 85, with a 95% confidence interval and a 5% margin of error. Thus, the final sample size of 94 participants exceeded the minimum requirement of 85, thereby strengthening the statistical power and representativeness of the study.

Patients who were 18 years of age or older, diagnosed with a mental disorder according to DSM-5 diagnostic criteria, not in the acute phase of illness, without cognitive or communication problems that would prevent them from responding appropriately, and who agreed to participate in the study by themselves or with the approval of their legal guardians were included. Patients who were in the acute phase of illness, did not agree to participate, did not speak Turkish, or had cognitive and communication problems that limited their ability to understand and answer the questions were excluded.

When the mental disorders of the patients were analyzed, it was determined that they were followed up with the diagnoses of psychotic disorder, mood disorder, and anxiety disorder.

Data Collection

The data were collected by the researcher (DÖ) through face-to-face interviews with the participants. Interviews were conducted when the patients were well and before

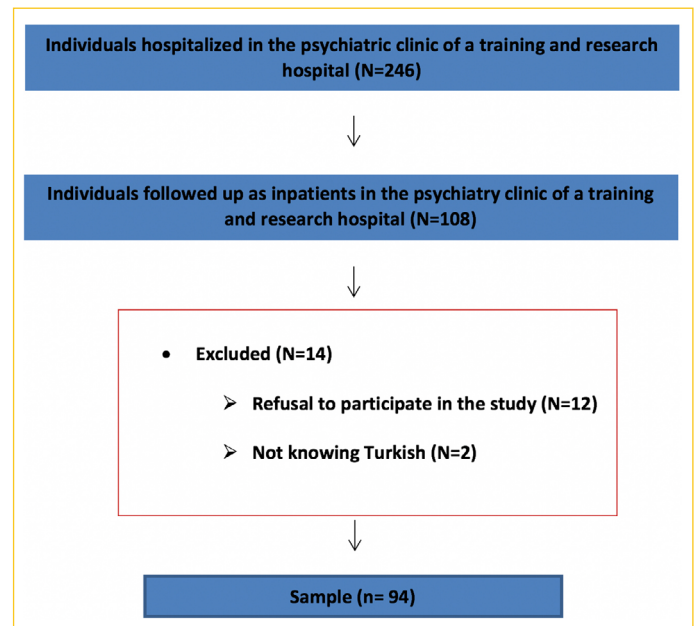


Figure 1. Flow diagram of the study.

discharge. The patients' weight and waist circumference were evaluated after the quarantine period, when the patients were first admitted to the clinic due to COVID-19 precautions, and when the primary doctor had decided on the discharge stage. The laboratory data for patients were based on the most recent blood test results obtained during their hospital stay. No additional blood samples were taken from patients for the study; routine blood test results were used. Participants were asked to answer by considering their dietary habits in the home environment. The interviews lasted for an average of 20 minutes. In this study, data were collected using the Information Form. No pilot study was conducted before starting the study.

Information Form

The form, created by the researchers based on a literature review, consists of five sections and 37 questions in total.^[11] These included questions on sociodemographic data (age, gender, marital status, economic status, etc.), data on mental disorders (diagnosis, year of diagnosis, number of hospitalizations, medications and side effects, etc.), data on dietary habits (number of main meals, snacks, eating times, types of food, etc.), data on physical assessment (height, weight, waist circumference, BMI), and blood serum levels (glucose, lipid levels).

Ethical Consideration

This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethics committee approval was obtained from the University of Health Sciences Hamidiye Non-interventional Clinical Research Ethics Committee (IRB: 19/83, dated: 08.11.2019), and institutional permission was

Table 1. Sociodemographic characteristics of individuals (n=94)

Characteristics	Psychotic disorder (n=28)		Mood disorder (n=22)		Anxiety disorder (n=44)		Total	
	Mean (SD) (min-max)		Mean (SD) (min-max)		Mean (SD) (min-max)		Mean (SD) (min-max)	
Age (years)	31.32 (11.48) (20–70)		37.73 (11.28) (20–56)		32.43 (11.10) (19–72)		33.34 (11.41) (19–72)	
	n	%	n	%	n	%	n	%
Gender								
Female	3	18.8	10	62.5	3	18.8	16	17.0
Male	25	32.1	12	15.4	41	52.6	78	83.0
Marital status								
Married	1	3.2	8	25.8	22	71.0	31	33.0
Unmarried	27	42.9	14	22.2	22	34.9	63	67.0
Economic status								
Income less than expenditure	14	35.0	12	30.0	14	35.0	40	42.6
Income and expenditure are in line	13	27.7	10	21.3	24	51.1	47	50.0
Income more than expenditure	1	14.3	–	–	6	85.7	7	7.4
Chronic psychical disease								
Yes	10	41.7	5	20.8	9	37.5	24	25.5
No	18	25.7	17	24.3	35	50.0	70	74.5
Chronic psychical disease (n=24)								
Diabetes mellitus (DM)	2	20.0	–	–	1	11.1	3	12.5
Hypertension (HT) +DM	3	30.0	1	20.0	2	22.2	6	25.0
HT+hipotiroidi	–	–	2	40.0	1	11.1	3	12.5
Arrhythmia+heart failure	2	20.0	1	20.0	2	22.2	5	20.8
Gastritis, ulcer etc.	2	20.0	1	20.0	2	22.2	5	20.8
Constipation	1	20.0	–	–	1	11.2	2	8.4

SD: Standard deviation

obtained from the hospital where the study was conducted. After research permits were revoked during the COVID-19 pandemic, the study was carried out with renewed ethics committee and institutional approval, in compliance with COVID-19 precautions. After verbal and written information about the study was provided, written informed consent was obtained from the participants.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 27.0. For the evaluation of normal distribution, skewness and kurtosis values of ± 2 were considered normal, as stated in the literature.^[12] It was determined that all variables, except 'How many times a week do you eat fish?', 'Do you eat more fish than meat in a week?', and 'Time spent eating', showed normal distribution. Descriptive data were analyzed using numbers, percentages, mean, and standard deviation. Mann-Whitney U test, Kruskal-Wallis test, Student t-test, and ANOVA were used for BMI

comparisons. Pearson correlation analysis was applied to evaluate the relationship between variables. In all analyses, $p \leq 0.05$ was interpreted as statistically significant.

Body Mass Index (BMI) was calculated by dividing body weight (kg) by height in square meters (m^2), in line with the WHO classification of obesity. For BMI classification, the following categories were used: average weight=18.5–24.9, overweight=25.0–29.9, grade I obesity=30.0–34.9, grade II obesity=35–39.9, and grade III obesity= ≥ 40 . In addition, waist circumference (WC) thresholds were defined as ≥ 102 cm for men and ≥ 88 cm for women.^[13] Laboratory reference ranges of the institution where the data were collected were as follows: fasting blood glucose (FBSG)=70–100 mg/dL, total cholesterol > 200 mg/dL, HDL (female) < 40 mg/dL, HDL (male) < 50 mg/dL, LDL > 130 mg/dL, triglycerides > 150 mg/dL.

Results

It was found that 83% of the individuals who participated in the study were male, 67% were single, 47.9% were universi-

Table 2. Characteristics of individuals regarding mental disorders and psychotropic drug Use (n=94)

Characteristics	Psychotic disorder (n=28)		Mood disorder (n=22)		Anxiety disorder (n=44)		Total	
	Mean (SD) (min-max)		Mean (SD) (min-max)		Mean (SD) (min-max)		Mean (SD) (min-max)	
Duration of mental disorder (years)	8.32 (7.72) (1–30)		7.55 (6.94) (1–25)		3.14 (2.43) (1–10)		5.71 (6.07) (1–30)	
Number of hospitalizations	2.18 (.98) (1–4)		2.18 (.90) (1–4)		1.61(.81) (1–4)		1.91(.92) (1–4)	
Duration of psychotropic medication use (years)	4.54 (5.61) (1–20)		5.32 (6.40) (1–25)		2.32 (2.18) (1–9)		3.68 (4.72) (1–25)	
	n	%	n	%	n	%	n	%
Psychotropic medications								
Antidepressant	4	50.0	1	12.5	3	37.5	8	8.5
Antipsychotic	3	30.0	–	–	7	70.0	10	10.6
Antidepressant+antipsychotic	12	27.3	5	11.4	27	61.4	44	46.8
Antidepressant+antipsychotic+mood stabilizers	2	15.4	11	84.6	–	–	13	13.8
Antidepressant+antipsychotic+ anxiolytics	5	62.5	–	–	3	37.5	8	8.5
Antidepressant+anxiolytics	–	–	–	–	3	100	3	3.2
Antidepressant+mood stabilizers	–	–	2	100	–	–	2	2.1
Antipsychotic+mood stabilizers	2	33.3	3	50.0	1	16.7	6	6.4
Side effects								
Yes	13	29.5	14	31.8	17	38.6	44	46.8
No	15	30.0	8	16.0	27	54.0	50	53.2
Smoking								
Yes	18	30.5	14	23.7	27	45.8	59	62.8
No	10	28.6	8	22.9	17	48.6	35	37.2
Alcohol use								
Yes	9	31.0	9	31.0	11	37.9	29	31.2
No	19	29.7	13	20.3	32	50.0	64	68.8
Substance use								
Yes	2	66.7	–	–	1	33.3	3	3.2
No	26	28.6	22	24.2	43	47.3	91	96.8

SD: Standard deviation

ty graduates, 25.5% had chronic physical diseases, and the most common diagnoses were hypertension and diabetes mellitus (25%) (Table 1).

It was determined that the individuals had been taking psychotropic medications for 3.68 (± 4.72) years, and 46.8% of them reported experiencing side effects. The most common side effect was increased appetite and weight gain (36.4%), followed by dry mouth (22.8%). In addition, 62.8% of the participants smoked, 31.2% consumed alcohol, and 3.2% used substances (Table 2).

When the dietary habits of the participants were evaluated, it was found that 62.8% had three main meals, 63.8% had no snacks, 59.6% ate home-cooked meals, 41.5% consumed 4–6 slices of bread daily, and 39.4% consumed more than three

servings of pasta/rice per week. It was also determined that 50% consumed fewer than two servings of dairy products per day, 26.6% consumed two or fewer eggs per week, 93.6% consumed fish once a week or never, 25.5% consumed 6–8 spoons of sugar per day, 38.3% drank more than 1.5 liters of water daily, and 56.4% did not exercise. Individuals who consumed home-cooked meals had lower BMI averages than those who consumed fast food; those who consumed more than three servings of pasta/rice per week had higher BMI averages than those who consumed two servings per week ($p < 0.05$) (Appendix 1).

The participants' mean BMI, WC, glucose, total cholesterol, HDL, LDL, and triglyceride levels are shown in Appendix 2. Glucose and triglyceride values were significantly higher in

Table 3. Correlations of individual characteristics and laboratory results

	BMI	WC	Glucose	Total cholesterol	HDL	LDL	Triglyceride
BMI	1						
WC	0.468**	1					
Glucose	0.168	0.396**	1				
Total cholesterol	0.073	0.148	-0.075	1			
HDL	-0.191	-0.146	0.042	-0.566**	1		
LDL	0.117	0.439**	0.419**	0.399**	-0.066	1	
Triglyceride	0.141	0.395**	0.272**	0.292**	0.006	0.483**	1
Age	0.181	0.448**	0.595**	0.232*	0.025	0.498**	0.493**
Duration of mental disorder (years)	0.177	0.253*	0.421**	0.040	-0.015	0.217*	0.194
Number of hospitalizations	-0.006	0.088	0.284**	0.050	0.005	0.150	0.080
Duration of psychotropic medication use (years)	0.266**	0.246*	0.339**	-0.041	0.027	0.188	0.184

*: Correlation is significant at the 0.05 level (2-tailed); **: Correlation is significant at the 0.01 level (2-tailed). BMI: Body mass index; WC: Waist circumference; HDL: High-density lipoprotein; LDL: Low-density lipoprotein

women than in men ($p < 0.05$). In addition, individuals with anxiety disorder had lower waist circumference, glucose, and LDL levels compared to individuals with mood disorders ($p < 0.05$). In contrast, individuals with psychotic disorders had significantly lower LDL levels than those with mood disorders. Furthermore, 37.5% of women were found to be obese and 73.1% had high waist circumference, while 35.9% of men were obese and 68.8% had low waist circumference. When the percentage distributions of BMI and waist circumference according to mental disorders were analyzed, the highest percentage of overweight or obese cases was observed in psychotic disorders (78.6%) (Appendix 2).

A positive, weakly significant correlation was found between BMI and mean waist circumference and duration of medication use ($p < 0.001$). There was also a positive, weakly significant correlation between waist circumference and glucose, LDL, triglycerides, age, and duration of medication use ($p < 0.001$). A positive, weakly significant correlation was found between glucose averages and LDL, triglycerides, duration of mental disorder, number of hospitalizations, and duration of psychotropic drug use; a positive, moderately significant correlation was found between glucose averages and age ($p < 0.001$). While a positive, weakly significant correlation was found between age and total cholesterol, LDL, and triglyceride levels, a positive, weakly significant correlation was also observed between LDL levels and duration of medication use ($p < 0.001$) (Table 3).

Discussion

In this study, which was conducted to examine the dietary habits and related parameters of inpatients with mental disorders, it was determined that one-fourth of the participants had chronic physical diseases. In previous studies,

it has been reported that hypertension, diabetes mellitus, respiratory system diseases, and chronic neurological diseases often accompany individuals with mental disorders.^[1,3,14] In this study, hypertension and diabetes mellitus were found to be the most common diagnoses in individuals with mental disorders. These findings are consistent with the literature and highlight how comorbid chronic diseases further complicate psychiatric care, underscoring the need for integrated treatment approaches. These comorbidities negatively affect the quality of life of individuals and may increase morbidity and mortality.^[3,14] Patients can manage their chronic diseases with modifiable and improvable behaviors such as nutrition and exercise.^[7] Therefore, psychiatric nurses should play an active role in guiding patients' dietary and exercise habits, using approaches such as motivational interviewing and patient education to enhance adherence and promote lifestyle change.

It is known that addictions such as smoking and alcohol use are high in individuals with mental disorders.^[15] Smoking and alcohol use also increase the risk of diseases such as respiratory and cardiovascular system diseases, as well as cancer.^[1] In a 42-year follow-up study conducted in Sweden, it was reported that substance use is frequently seen in individuals with mental disorders, and premature deaths are more common in this group.^[16] It was also found that the incidence of metabolic syndrome was higher in individuals with schizophrenia and bipolar disorders who had substance abuse.^[17] Substance use may have an impact on nutrient absorption and metabolism. More than half of the patients in this study smoked, and one-third consumed alcohol. While chronic mental disorders are considered risky for metabolic syndrome,^[2] psychiatric nurses should pay more attention to individuals with schizophrenia and bipo-

lar disorders with comorbid substance use. From a nursing perspective, incorporating substance cessation programs into treatment protocols and providing lifestyle support are essential preventive strategies.

Appetite is often affected by psychotropics used in the treatment of mental disorders, and increased appetite may develop due to medication use.^[1,2] In this study, it was determined that the most common side effects experienced by patients were increased appetite and weight gain. In addition to increased appetite caused by psychotropic agents, individuals' exercise and dietary habits also affect weight gain.^[1] This result suggests that medication-related side effects interact with lifestyle factors, reinforcing the need for nurses to support patients in adopting balanced dietary habits and regular physical activity.^[2]

The individuals who participated in this study frequently had three main meals and two snacks; however, it was observed that they consumed high amounts of carbohydrates and less protein. In this respect, the study findings are consistent with the literature. A review of the literature indicates that studies frequently conducted with patients with schizophrenia and other psychotic disorders show that patients have unhealthy nutritional habits, do not eat a balanced and healthy diet, prefer foods rich in carbohydrates, fat, and sugar, consume less fiber and protein, and particularly do not get enough vitamins.^[3,4,18–20] In addition, they tend to skip breakfast and eat more at night. Similarly, Karagöl et al.^[8] reported in a study conducted in Türkiye with patients with schizophrenia that dietary protein and vitamin intake and physical activity levels were lower than those of healthy controls.

In this study, the dietary habits of hospitalized individuals with mood, anxiety, and psychotic disorders were investigated. The findings show that the dietary habits of individuals with mood and anxiety disorders are as unhealthy as those of individuals with schizophrenia and other psychotic disorders. This result indicates that unhealthy dietary patterns are not limited to psychotic disorders but are also prevalent among mood and anxiety disorders, which broadens the scope of nursing interventions to a wider psychiatric population.

The study found that individuals consumed 6–8 spoons of sugar daily, frequently used sunflower oil, and drank 1.5 liters or more of water. In a meta-analysis, Teasdale et al.^[2] determined that individuals with mental disorders consumed more fast food, fewer fruits, vegetables, nuts, and vegetable oil, and more carbohydrates, fat, and sugary foods. In light of these results, patients do not have an adequate and balanced diet. At this point, it is thought that the economic status of individuals with mental disorders also affects their dietary habits. In the study of Fond et al.,^[21] it was reported that 80.7% of individuals with schizophrenia were poor. This result highlights a critical

factor that prevents individuals from receiving adequate nutrition and accessing health services. Given that most participants in this study were unemployed and had lower income levels than their expenses, it is clear that this factor significantly contributes to their malnutrition. Thus, socioeconomic disadvantage should be considered an essential determinant of dietary habits, and nurses can advocate for social initiatives and rehabilitation programs that strengthen patients' participation in work life and economic independence.

Studies have also shown that cognitive functions are negatively affected when sufficient vitamins and minerals are not consumed.^[3,6] At this point, patients' nutrition may also impact their mental state. Therefore, it is even more critical for patients to have a balanced diet. Future research should investigate the relationship between nutrition and cognitive functions, not only in psychiatric populations but also in healthy individuals, to better understand this association.

It was determined that more than half of the patients participating in the current study did not exercise, and almost all consumed fish once a week or not at all. The positive effects of exercise^[22] and fish consumption on mental and physical health^[23] have been reported in the literature. Recent studies have reported that fish consumption prevents depression.^[24] However, it is also reported that Turkish society does not exercise sufficiently^[25] and consumes little fish.^[26] Thus, the Turkish population may be at risk in terms of both physical and mental health. In addition, this result may be related to cultural characteristics, living environment, or the recent increase in meat prices. Considering these findings, psychiatric nurses should encourage patients to increase physical activity and adopt healthier dietary alternatives, including fish consumption, as part of lifestyle counseling.

In this study, it was also found that most participants devoured their meals. Eating quickly may cause the amount of food eaten to be underestimated. Moreover, rapid eating can lead to obesity.^[4] Slow eating is related to mindful eating, which involves awareness of the taste of food, decreased appetite, and increased satiety.^[27] Therefore, psychiatric patients should be reminded to chew food sufficiently and eat mindfully. On the other hand, this study determined that individuals who consumed home-cooked meals had lower BMI averages than those who consumed fast food. Thus, it is important to consider whether patients with mental disorders can cook at home by themselves as part of psychiatric treatment and rehabilitation. This result emphasizes the role of patient education and skill-based interventions, where nurses can train and motivate patients to prepare healthier meals and adopt mindful eating practices.

It has been reported that the risk of obesity is higher in individuals with psychotic disorders compared to the general

population.^[11] According to the World Health Organization,^[28] the incidence of obesity in individuals with psychotic disorders is higher than in the general population. In the literature, long-term use of antipsychotic medications has been associated with impaired glucose metabolism, weight gain, increased waist circumference, and metabolic syndrome.^[29] In this study as well, a significant positive correlation was found between BMI, mean waist circumference, and duration of medication use. Glucose levels were significantly correlated with age, duration of mental disorder, number of hospitalizations, and duration of psychotropic agent use. In addition to medication use, lack of motivation, disability, dietary habits, and lifestyle changes in patients may also affect this relationship.

The present study also determined that female patients' mean glucose and triglyceride levels were higher than those of male patients. Especially in long-term drug use, women were found to be at a higher risk than men of developing obesity.^[6,29] It has been reported that metabolic syndrome is 2.5 times more common in women with schizophrenia and 1.5 times more common in men compared to the general population.^[6] Bakola et al.^[20] evaluated nutrition in individuals diagnosed with psychosis and found that the BMI of women was higher than that of men. In this direction, the study findings support the literature.

BMI and glucose levels were significantly higher in patients with mood disorders than in patients with anxiety disorders, and LDL levels were significantly higher in patients with anxiety disorders than in patients with schizophrenia and other psychotic disorders. In a meta-analysis, it was determined that individuals diagnosed with bipolar disorder consumed a high-energy and sodium-rich diet compared to healthy controls.^[2] It has been reported that the prevalence of metabolic syndrome is common in patients with bipolar disorder,^[9,30,31] and this situation has been associated with lithium use, impaired glucose metabolism, and impulsive overeating behavior, which is frequently observed in bipolar disorder, unlike other mental disorders.^[30,31] However, when the literature is examined, it is seen that studies are frequently conducted with individuals with schizophrenia and other psychotic disorders.^[18,19] Therefore, it may be recommended to conduct studies on metabolic syndrome and dietary habits in individuals diagnosed with mood disorders. Moreover, as this study was conducted during the COVID-19 period, pandemic-related restrictions may have influenced participants' lifestyle behaviors, physical activity, and eating habits, which should be taken into account when interpreting the findings.

Limitations

The data obtained from this study are limited to patients followed in a single center where the study was conducted.

The research findings are limited to the sample group only and cannot be generalized. The predominance of male participants in the sample may limit the generalizability of gender-related comparisons, which is acknowledged as a limitation. In addition, the year 2021, when the data were collected, was the period in which restrictions continued due to COVID-19 in Türkiye. Therefore, the small sample size can be considered a limitation of the study. Other limitations include the fact that the study was conducted only with hospitalized patients and that no selection could be made according to the severity of the symptoms experienced by the patients. While questioning the medications used by the individuals, antipsychotic drugs could have been examined in more detail as typical and atypical. When evaluating dietary habits, the distinction between good and bad carbohydrates, such as whole wheat pasta and brown rice, could also have been questioned. Considering all these points, it may be recommended to conduct larger-scale studies.

Conclusion

In this study of inpatients with mental disorders, it was found that more than half of the patients smoked, almost all did not exercise at all, and they frequently consumed their meals within 15 minutes. The most common side effect experienced by the patients was increased appetite. Most of them ate three main meals and two snacks a day at home, but their diet was rich in carbohydrates and low in protein. It was found that almost all the patients consumed fish once a week or not at all. In addition, women and individuals with mood disorders were more likely to have elevated blood sugar levels. As the duration of antipsychotic use and the number of medications increased, patients' blood sugar and lipid profiles worsened. These findings indicate that individuals with mental disorders are at high risk for physical health problems and emphasize the need for targeted nursing interventions.

This study also reveals that not only individuals diagnosed with schizophrenia but also those with bipolar and anxiety disorders are at significant risk for physical health problems. Therefore, psychiatric nurses should integrate physical health assessments into routine care and adopt a holistic approach. Specific nursing interventions include providing counseling on exercise, educating patients on healthy eating habits, and supporting patients in quitting smoking and adopting healthier dietary behaviors through psychosocial techniques such as motivational interviewing and cognitive-behavioral strategies. Developing nutrition and exercise recommendations tailored to patients' sociodemographic characteristics and collaborating with social institutions to improve economic conditions can further enhance outcomes.

Ethics Committee Approval: The study was approved by the University of Health Sciences Hamidiye Non-interventional Clinical Research Ethics Committee (no: 19/83, date: 08/11/2019).

Informed Consent: Before starting the study, the participants were informed about the purpose of the study, the content of the form and how the data obtained in the study would be used. They were informed in accordance with the Helsinki Declaration that there would be no risk in participating in this study, and their written and verbal consent was obtained and an informed consent form was signed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Use of AI for Writing Assistance: No AI technologies utilized.

Authorship Contributions: Concept – M.B.Ç., G.D., E.E.A.; Design – M.B.Ç., G.D., E.E.A.; Supervision – M.B.Ç., D.Ö., G.D., E.E.A.; Funding – M.B.Ç., D.Ö., G.D., E.E.A.; Materials – M.B.Ç., D.Ö.; Data collection and/or processing – D.Ö.; Data analysis and/or interpretation – D.Ö., G.D.; Literature search – M.B.Ç., G.D.; Writing – M.B.Ç., G.D.; Critical review – M.B.Ç., D.Ö., G.D., E.E.A.

Acknowledgments: The authors thank all patients who participated in the study.

Peer-review: Externally peer-reviewed.

References

- Küçük L, Kaya H, Çömez T, Kaçar S, Kutlu Y, Zülfikar H. Eating behaviors and related factors in psychiatric patients. *Arch Psychiatr Nurs* 2018;32:194–9.
- Teasdale SB, Ward PB, Samaras K, Firth J, Stubbs B, Tripodi E, et al. Dietary intake of people with severe mental illness: systematic review and meta-analysis. *Br J Psychiatry* 2019;214:251–9.
- Maciel JF, Maciel RF, Miranda PB, Siqueira TM, Fagundes A. Habits and eating behaviors of patients with mental disorders. *Brazilian J Nutrit* 2024;37:e220270.
- Zurrón Madera P, Casaprima Suárez S, García Álvarez L, García-Portilla González MP, Junquera Fernández R, Lluch Canut MT. Eating and nutritional habits in patients with schizophrenia. *Rev Psiquiatr Salud Ment (Engl Ed)* 2022;15:54–60.
- Üstün B, Gerçik E. Self-care power and healthy lifestyle behaviors in persons with severe mental illness. *Mediterr Nurs Midwifery* 2023;3:165–73.
- Adamowicz K, Kucharska-Mazur J. Dietary behaviors and metabolic syndrome in schizophrenia patients. *J Clin Med* 2020;9:537.
- Lee YY, Lau JH, Seet V, Whitton C, Asharani PV, Siva Kumar FD, et al. Dietary intake of persons with depressive and psychotic disorders in Singapore. *Ann Acad Med Singap* 2021;50:379–89.
- Karagöl G, Songur E, Rakıcıoğlu N. Evaluation of food consumption and physical activity status in patients with schizophrenia. *Cukurova Med J* 2023;48:409–18.
- Dolapoğlu N, Yürekli BPŞ, Eker MÇ, Elbi H. Relationship between serum agouti-related peptide levels and metabolic syndrome in euthymic bipolar patients. *Noro Psikiyatr Ars* 2020;58:16–20.
- Türkiye Endokrinoloji ve Metabolizma Derneği. Obezite tanı ve tedavi kılavuzu. 11. Baskı. Ankara; 2024. Available at: <https://file.temd.org.tr/Uploads/publications/guides/documents/obezitetanitedavikilavuzu-2024.pdf>. Accessed Oct 2, 2025. [In Turkish]
- Simonelli-Muñoz AJ, Fortea MI, Salorio P, Gallego-Gomez JJ, Sánchez-Bautista S, Balanza S. Dietary habits of patients with schizophrenia: a self-reported questionnaire survey. *Int J Ment Health Nurs* 2012;21:220–8.
- George D, Mallery M. SPSS for Windows step by step: A simple guide and reference, 17.0 update. 10th ed. Boston: Pearson; 2010.
- NHLBI. Classification of overweight and obesity by BMI, waist circumference, and associated disease risks. *Obesity* 2009;22(Suppl 3):S5–7.
- Yaşar H, Yıldız M. Assessment of mortality rate in 10 years and the associated risk factors in schizophrenia. *Turk J Psychiatr* 2021;32:185–92.
- Conway KP, Swendsen J, Husky MM, He JP, Merikangas KR. Association of lifetime mental disorders and subsequent alcohol and illicit drug use: results from the national comorbidity survey-adolescent supplement. *J Am Acad Child Adolesc Psychiatry* 2016;55:280–8.
- Fridell M, Bäckström M, Hesse M, Krantz P, Perrin S, Nyhlén A. Prediction of psychiatric comorbidity on premature death in a cohort of patients with substance use disorders: a 42-year follow-up. *BMC Psychiatry* 2019;19:150.
- Yıldırım YE, Aydın PÇ. The prevalence of metabolic syndrome and its predictors among male patients in a psychiatry unit. *Psychiatry Clin Psychopharmacol* 2019;29(Suppl 1).
- Aguiar-Bloemer AC, Agliussi RG, Pinho TMP, Furtado EF, Diez-Garcia RW. Eating behavior of schizophrenic patients. *Rev Nutr* 2018;31:13–24.
- Sorić T, Mavar M, Rumbak I. Metabolic syndrome and dietary habits in hospitalized patients with schizophrenia: A cross-sectional study. *Medicina (Kaunas)* 2021;57:255.
- Bakola M, Manthopoulou T, Bonotis K, Peritogiannis V. Dietary habits and obesity in patients with psychotic disorders in rural areas in northwestern Greece. *Psych* 2021;4:1–9.
- Fond GB, Yon DK, Tran B, Mallet J, Urbach M, Leignier S, et al. Poverty and inequality in real-world schizophrenia: a national study. *Front Public Health* 2023;11:1182441.
- Herbert C, Meixner F, Wiebking C, Gilg V. Regular physical activity, short-term exercise, mental health, and well-being among university students: the results of an online and a laboratory study. *Front Psychol* 2020;11:509.
- Tacon AGJ, Lemos D, Metian M. Fish for health: Improved nutritional quality of cultured fish for human consumption. *Rev Fish Sci Aquac* 2020;28:449–58.
- Yang Y, Kim Y, Je Y. Fish consumption and risk of depression: Epidemiological evidence from prospective studies. *Asia Pac Psychiatry* 2018;10:e12335.

25. Sağınç S, Demirci N, Karaca A. Energy expenditure according to physical activity intensity and domains, step count, and sitting time in housewives. *Hacettepe J Sport Sci* 2020;31:54–68.
26. Yucel Ş, Baki B, Küçükkoşker B. Fish consumption trends, the case of Sinop province. *Turkish J Agriculture - Food Sci Technol* 2020;8:1053–7. [Article in Turkish]
27. Bozkurt BK, Köksal E. Adaptation of the mindful eating intervention program for children and their families to Turkish culture. *J Nutrition Diet* 2021;49:84–92.
28. World Health Organization (WHO). Obesity and overweight. 2024. Available at: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight#:~:text=In%202022%2C%201%20in%208,million%20were%20living%20with%20obesity>. Accessed Sep 19, 2024.
29. Kwobah E, Koen N, Mwangi A, Atwoli L, Stein DJ. Prevalence and correlates of metabolic syndrome and its components in adults with psychotic disorders in Eldoret, Kenya. *PLoS One* 2021;16:e0245086.
30. Ozkan Demir N, Tuglu C. The relationship between metabolic syndrome and impulsivity in patients with bipolar disorder. *Alpha Psychiatry* 2020;21: 277–84.
31. Giménez-Palomo A, Gomes-da-Costa S, Dodd S, Pachiarotti I, Verdolini N, Vieta E, et al. Does metabolic syndrome or its component factors alter the course of bipolar disorder? A systematic review. *Neurosci Biobehav Rev* 2022;132:142–53.

Appendix 1. Comparison of dietary habits and BMI values of individuals

Variables	n	%	BMI mean (SD) (min-max)	Test/p
Number of main meals				
1	7	7.4	31.73 (8.87) (24.69–38.36)	F=0.864 p=0.425
2	28	29.8	29.35 (5.70) (18.71–41.36)	
3	59	62.8	28.86(5.36) (19.25–42.36)	
Number of snacks				
0	60	63.8	28.75 (5.49) (18.72–42.36)	F=0.486 p=0.623
1	11	11.7	30.52 (5.39) (23.26–38.36)	
2	21	22.3	29.70 (5.27) (21.67–41.36)	
3	2	2.1	31.20 (11.52) (23.05–39.36)	
Breakfast foods				
Two or more foods	69	73.4	28.94 (5.51) (19.16–42.36)	F=0.958 p=0.387
Only one food	10	10.6	31.49 (6.42) (20.75–40.36)	
No breakfast	15	16.0	28.99 (4.73) (18.72–38.36)	
Time spent eating				
15 min	72	76.6	29.29 (5.82) (18.72–42.36)	KW=4.114 p=0.128
30 min	20	21.3	28.10 (3.43) (21.67–33.08)	
1 hour	2	2.1	37.86 (.70) (37.36–38.36)	
Where do you usually eat?				
Outside- fast food ¹	18	19.1	30.70 (5.53) (24.82–40.36)	F=2.854 p=0.046 4<1
At work- homemade food ²	5	5.3	30.33 (4.56)	
In a restaurant or canteen- homemade food ³	15	16.0	29.66 (5.53) (19.26–42.36)	
At home- homemade food ⁴	56	59.6	26.31 (4.89) (18.72–37.36)	
How many times a day do you eat fruit and vegetables?				
More than three times	23	24.5	29.28 (5.80) (19.26–41.36)	F=0.094 p=0.921
One time	47	50.0	29.40 (4.94) (21.67–41.36)	
None	24	25.5	28.80 (6.38)	
How many times a day do you eat legumes?				
More than two times	24	25.5	28.18 (4.37) (20.75–40.36)	F=0.408 p=0.716
Two times	31	33.0	29.35 (5.80) (18.72–41.36)	
Less than two times	25	26.6	29.77(5.68) (19.16–42.36)	
None	14	14.9	29.72 (6.47)	

Appendix 1. Cont.

Variables	n	%	BMI mean (SD) (min-max)	Test/p
How many slices of bread do you eat a day?				
More than six slices	22	23.4	31.17 (5.34) (20.75–41.36)	F=2.265 p=0.082
4 to 6 slices	39	41.5	29.59 (5.58) (18.72–42.36)	
Less than four slices	29	30.9	27.67 (5.20) (19.26–39.36)	
None	4	4.3	26.09 (4.67) (19.16–29.36)	
How many times a week do you eat rice and pasta?				
More than three servings ¹	37	39.4	31.79 (5.65) (23.26–42.36)	F=4.592 p=0.002 2<1
Two servings ²	32	34.0	27.38 (4.89) (18.72–39.36)	
Less than two servings ³	22	23.4	29.05 (4.76) (21.67–38.36)	
None ⁴	3	3.2	25.73 (7.15) (19.16–33.36)	
How much milk or containing milk food do you eat a day?				
Four or more	11	11.7	31.38 (5.91) (23.55–39.36)	F=1.614 p=0.186
Four times	20	21.3	27.22 (3.71) (18.72–33.36)	
Two or less	47	50.0	29.21 (5.40) (19.26–41.36)	
None	16	17.0	30.24 (6.87) (19.16–42.36)	
How many times a week do you eat fish?				
2 or 3 times	6	6.4	26.06 (3.09) (22.64–30.49)	U=165.000 p=0.127
One time or never	88	93.6	29.43 (5.56) (18.72–42.36)	
Do you eat more fish than meat in a week?				
Yes	5	5.3	30.27 (2.66) (26.84–33.36)	KW=1.104 p=0.603
Equal	7	7.4	28.83 (7.14) (20.75–41.36)	
No	82	87.2	29.19 (5.51) (18.72–42.36)	
How many eggs do you eat a week?				
More than five pieces	22	23.4	28.22 (4.05) (19.26–36.36)	F=0.714 p=0.526
4 to 5 pieces	12	12.8	28.50 (6.19) (20.75–41.36)	
Three pieces	23	24.5	30.63 (5.40) (22.64–41.36)	
Two pieces or less	25	26.6	30.03 (6.71) (22.89–40.36)	
None	12	12.8	30.12 (6.51) (22.89–40.36)	

Appendix 1. Cont.

Variables	n	%	BMI mean (SD) (min-max)	Test/p
Which oil do you usually consume?				
Olive	27	28.7	29.43 (5.55) (19.26–40.36)	F=0.379 p=0.714
Sunflower	54	57.4	29.45 (5.67) (18.72–42.36)	
Butter	9	9.6	28.26 (5.76) (20.75–37.36)	
Margarine	4	4.3	26.83 (.46) (26.36–27.47)	
How many spoonfuls of sugar do you consume a day?				
More than eight spoons	13	13.8	28.88 (5.27) (20.75–37.36)	F=0.239 p=0.915
-8 spoons	24	25.5	29.28 (4.86) (21.67–40.36)	
4 or 5 spoons	17	18.1	30.33 (6.61) (23.26–42.36)	
Less than four spoons	17	18.1	28.65 (4.91) (19.16–40.36)	
None	23	24.5	28.94 (6.08) (18.72–41.36)	
How much water do you drink a day?				
More than 1.5 L	36	38.3	28.51 (5.31) (18.72–40.36)	F=2.216 p=0.108
1–1.5 L	35	37.2	28.57 (4.66) (21.67–39.36)	
Less than 1 L	23	24.5	31.32 (6.55) (19.16–42.36)	

Groups sharing the same superscript differ significantly based on post hoc test results. BMI: Body mass index; SD: Standard deviation; F: ANOVA; KW: Kruskal Wallis test; U: Mann-Whitney U test

Appendix 2. Comparison of individuals' characteristics and laboratory results

[illegible]