





Identification of the sociodemographic and clinical characteristics of the patients who have undergone transcranial magnetic stimulation in a psychiatry clinic: A retrospective descriptive design

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Abstract

Purpose: The aim of this study, which is the first in this field in Turkey, is to determine the sociodemographic and clinical characteristics of patients who have undergone transcranial magnetic stimulation (TMS) in a psychiatry clinic.

Design and Methods: This study has a retrospective descriptive design. Data of 513 psychiatric patients who have undergone TMS between 2015 and 2018 in a university hospital were reviewed.

Findings: Significant differences were found between psychiatric diagnoses of the patients, based on their sex, marital status, and the number of courses of treatment with TMS ($p < 0.05$).

Practical Implications: It was suggested that nurses who would practice this procedure were required to be educated for TMS and nursing care to provide well and effective care.

KEYWORDS

chronic disease, mental disorders, nursing, retrospective descriptive design, transcranial magnetic stimulation

1 | INTRODUCTION

Psychiatric disorders are characterized by distinct emotions, thinking, or behavioral symptoms and abnormalities that are associated with brain function and structure. These symptoms may be alleviated by a number of behavioral and pharmacological interventions. In addition to pharmacological treatment, existing interventions such as psychotherapy and electroconvulsive therapy (ECT) partly alleviate the disease burden. Emotional thought or behavioral symptoms and abnormalities recur in most of the individuals following treatment. Therefore, new therapeutic approaches need to be tried such as transcranial

magnetic stimulation (TMS), which supports existing pharmacological and psychological treatments.^{1,2}

TMS is a procedure that relies on stimulating the cortex with a magnetic field created on the skull. The TMS intervention is a brain stimulation technique that is performed in a noninvasive way together with available behavioral and pharmacological treatments for some psychiatric disorders.^{2,3}

Magnetic stimulator is composed of two main structures. One of them is a ring and the other is an energy generator. Energy should be stored and reach the ring when necessary to have a warning from the stimulator ring. When the device is triggered, the stored energy is shifted from the capacitor towards the ring. The brain cortex is stimulated with

the magnetic field that is generated as a result of electric current passing through a metal ring held over the skull skin. Magnetic fields pass through the scalp and brain tissue without damaging and without causing a sense of pain and electrical resistance.^{4,5} A mild pain may occur during high-frequency applications. Depolarization occurs in the neurons in the area under the metal ring. Magnetic waves caused by TMS result in changes in the 5HT₂ and noradrenergic receptors of the neurons.^{2,6,7} It is uncertain which structures are stimulated by the stimulation of the scalp. It is considered that dendrites, presynaptic terminals, cell bodies, and efferent axons or all of these structures together might be stimulated.²

The significant parameters for the treatment effect created by TMS on the psychiatric patient are its application site, frequency, and severity. One of the most important factors in TMS applications is the brain region where it is applied. While 5–10 Hz was used in the first psychiatric TMS applications, a 20 Hz frequency was used later on.⁸ For instance, the dorsolateral prefrontal cortex was generally stimulated by up to 3000 stimuli at a frequency of 10–20 Hz for an average of 20 sessions during the treatment of depression.⁹

This noninterventive method has been reported to be effective in mental disorders.⁷ Depression is the clinical condition where it is used best, but TMS has attracted the attention of other groups who worked in other areas of psychiatry.¹⁰ Many studies were carried out to investigate the possibility of affecting several mental symptoms by increasing or decreasing the activity in specific regions of the brain using this method.^{8,10,11} Apart from depression, TMS has been used for other psychiatric diseases, including addiction, schizophrenia, obsessive–compulsive disorder, attention deficit disorder with hyperactivity, panic attacks, bulimia nervosa, mania, posttraumatic stress disorder, and catatonia.^{11–13}

In a study evaluating the effect of TMS on pregnant women who had a diagnosis of major depressive disorder, it was concluded that the TMS procedure had a low risk on pregnant women and was effective in decreasing depressive symptoms.¹⁴

The use of TMS has advantages, such as ease of use, rapid effects, and low risk of adverse effects. The TMS procedure does not have any known severe side effects and it provides the possibility to affect activity only in the desired brain regions.¹²

TMS is applied by the nurses, and their responsibilities are very important in this field. Although the standards in nursing care in ECT management in psychiatric nursing have been determined, their roles in TMS are less defined.¹⁵ Moreover, no before–after TMS application patient preparation program has been integrated into the regular treatment routine in Turkey. This study is thought to be a significant source of data for the nurses who will perform this application more commonly in Turkey.

This study may be an important source of data for the nurses who will perform this application in Turkey in terms of making the preparations before TMS, knowing the indications of TMS, and observing the effects of TMS. Sociodemographic and clinical characteristics of the patients will be recognized; patients' needs will be determined and nursing care procedures to meet these needs will be established with this study. The history of this method is short and no epidemiological data have been found regarding the use of this method in Turkey. In this respect, it may be a study that can make a significant contribution to the literature.

In addition, data obtained from this study and the participation of the nurses who will work in this field, in regular training programs such as courses and seminars considering these patient characteristics, will be quite important for psychiatric nursing.

2 | METHODS

2.1 | Aim

The aim of this study, the first in this field in Turkey, is to determine the sociodemographic and clinical characteristics of the patients who have undergone TMS in a psychiatry clinic. The research questions are as follows:

1. RQ1: What are the sociodemographic characteristics of patients who have undergone TMS?
2. RQ2: What are the clinical features of patients who have undergone TMS?

2.2 | Study design, setting, and participants

This study is a retrospective descriptive design. The study was carried out in a university hospital in the Aegean region of Turkey. It was conducted between July and August, 2018. The sample of the study was composed of 513 psychiatric patients who were undergoing TMS in inpatient and outpatient polyclinics of the psychiatry department of a university hospital in Denizli between 2015 and 2018. The Psychiatry Department is defined as a hospital in a separate building depending on the university hospital.

There were inpatient services (psychosis service, mood service, neurosis service, children and adult psychiatry service, and alcohol–substance addiction research therapy and training center), outpatient services, an ECT unit, and a TMS unit in the psychiatry hospital of the university hospital.

The TMS unit provided service between 8 a.m. and 4 p.m. every day. TMS, which was recommended by a doctor in the psychiatry department, was applied to both inpatient and outpatient individuals. A Neurosoft brand Neuro-MS/D magnetic stimulator device was used for TMS application. The software was used to identify application parameters and the coil was manipulated manually. In the first session of TMS application, the patient's motor threshold was first determined and then, the area corresponding to the dorsolateral prefrontal cortex on the cranium of the patient was found by “5 cm technique” (by moving from motor cortex towards rostral region). Since this area would be used in the following applications, it was marked on the white cap that the patient was wearing on his/her head. Each individual received a total of 20 sessions of TMS treatment, including one session a day. The individuals in the study have applied an average of 3000 stimuli at a frequency of 10–20 Hz and 120% motor threshold parameters.

Each session lasted for an average of 10 min. In Turkey, the patient to apply TMS is determined by a medical doctor. However,

this procedure was applied by a psychiatric nurse who was working in the TMS unit. The relationship between the nurse and the patient began following the recommendation of TMS as a treatment option by the doctor.

Before the TMS procedure, the nurse :

- Obtains the consent of the patients and their relatives.
- Provides information to the patients and their families about TMS.
- Gives instructions to the patients about possible side effects (pain in the head and face, dizziness, muscle pain, temporary deafness, cognitive changes, and seizure).
- Examines the patient's files and retrieves information regarding their diagnosis and treatment.
- Tells the patients the things that should be done before coming for treatment, such as the hair should be clean and no hair cream, gel, or spray should be used before coming for treatment.
- Tells the patients to remove their dentures, eyeglasses, and all jewelry, including hair clips and earrings.
- Offers to keep the valuable belongings of the patients safe.
- Tells the patients to wear a swimming cap.
- Tells the patients to empty their bladders.^{16,17}

When the procedure finishes, the nurse :

- Evaluates whether the patient has suffered any adverse effects (e.g., pain in the head and face, dizziness, muscle pains, temporary deafness, cognitive changes, seizure).
- Measures the patient's blood pressure and pulse rate and records them.
- Schedules an appointment for the next TMS treatment session.
- Reminds the patient to bring a swimming cap to each session (to prevent sliding of the palette on the scalp due to hairy skin).^{16,17}

2.3 | Data collection tools

The registration forms of psychiatric patients who had undergone TMS in a psychiatric hospital of a public university were used. These forms include patient sociodemographic data (age, sex, marital status, place of residency, psychiatric diagnosis and duration, comorbidity, suicidal ideation, special conditions such as pregnancy or postpartum period, ECT, and drug intake). In addition, this form contains data on the number of sessions of TMS completed so far. The files of these patients were retrospectively reviewed and data were recorded.

2.4 | Data analysis

For the identification of epidemiological characteristics, data were assessed in Statistical Package for the Social Sciences version 21.0 (IBM) by using descriptive analysis, including numbers, ratios (percentages), mean (arithmetic mean, mode, and median), and standard

deviation. The χ^2 test was used for the distribution of the TMS cure number based on sociodemographic characteristics of the individuals, the TMS cure number based on the clinical conditions of the individuals, the distribution of psychiatric diagnoses of the individuals based on their sociodemographic characteristics, and the distribution of psychiatric diagnoses based on the clinical conditions of the individuals. A correlation analysis test was used for the relation between the clinical conditions of the individuals and the duration of their psychiatric diagnoses. All data were assessed at a level of $p < 0.05$.

2.5 | Ethical considerations

The study was performed based on the principles of the Helsinki Declaration. Ethics approval was provided by the Non-interventional Research Ethics Committee of the university (date: October 7, 2018 and decision no: 60116787-020/47011). A written authorization was obtained from the Psychiatry Department of the university hospital where the study was conducted.

3 | RESULTS

Of the individuals who were included in the study based on age classification in the registration forms, 69.4% were aged 26–59 years old, 65.1% of the individuals ($n = 334$) were women, 67.3% were married and 76.8% were living in the city. Among the individuals who had undergone TMS, the diagnosis of the psychiatric disorder was depression in 58.1% of the cases, bipolar disorder in 16% (depressive seizure), a psychotic disorder in 6.4%, and various disorders in the remaining 19.5%, including attention deficit disorder with hyperactivity, obsessive–compulsive disorder, anxiety disorder, somatoform disorder, and alcohol/substance use disorder. It was found by studying the registration forms that 60.6% of the individuals did not have a physical disorder concomitant to the psychiatric diagnosis, 79.1% did not have suicide ideation, 2.7% were pregnant, and 2.7% were postpartum. It was also detected that 90.6% of the participants had not undergone ECT, 96.7% had taken pharmacotherapy, and 91.7% had undergone one course (20 sessions) and 8.6% had taken two courses (20 + 20 sessions) of TMS application (Table 1).

There were no statistically significant differences between their psychiatric diagnoses based on their age, place of residency, the duration of psychiatric diagnosis, concomitant medical diagnosis, suicide ideation, special condition, and pharmacotherapy ($p > 0.05$). Statistically significant differences were found between their psychiatric diagnoses based on their sex and marital status ($p < 0.05$). It was also determined that the majority of the married individuals had a diagnosis of depression ($\chi^2 = 36.645$, $p = 0.0001$) (Table 2).

Moreover, statistically significant differences were detected between the number of TMS courses based on psychiatric diagnoses of the patients ($p < 0.05$). Those who had undergone one course of TMS had a diagnosis of depression and bipolar disorder mostly, while

TABLE 1 Distribution of individuals according to their sociodemographic and clinical status

Sociodemographic characteristics and clinical conditions	Frequency (n)	Percent (%)
Age		
<18 years	6	1.2
18–25 years	41	8.0
26–59 years	356	69.4
>60	110	21.4
Sex		
Women	334	65.1
Men	179	34.9
Marital status		
Single	106	20.7
Married	345	67.3
Widowed/divorced	62	12.1
Place of residency		
City	394	76.8
Rural	119	23.2
Concomitant medical diagnosis		
No	311	60.6
Yes	202	39.4
Suicide ideation		
No	406	79.1
Yes	107	20.9
Special condition		
No	481	93.8
Pregnant	14	2.7
Postpartum	14	2.7
Other (vision and hearing loss)	4	.8
Pharmacotherapy		
No	17	3.3
Yes	496	96.7
TMS procedure		
1 Course	469	91.4
2 Course	44	8.6
Psychiatric diagnoses		
Depression	298	58.1
Psychotic disorder	33	6.4
Bipolar disorder	82	16.0
Other ^a	95	18.16

Abbreviation: TMS, transcranial magnetic stimulation.

^aOther: Attention deficit disorder with hyperactivity, obsessive–compulsive disorder, anxiety disorder, somatoform disorder, and alcohol/substance use disorder.

the ones who had taken two courses of TMS had depression and other diagnoses most frequently (Table 3).

There was no statistically significant correlation between the duration of psychiatric diagnoses and their suicide ideation and taking pharmacotherapy ($p > 0.05$). However, a significant and weak positive correlation was found between the duration of psychiatric diagnoses of patients and their states of undergoing TMS ($r = 0.090$; $p = 0.041$) (Table 4). In other words, the frequency of applying TMS increases as the duration of psychiatric disease increases.

4 | DISCUSSION

This study was carried out to determine the sociodemographic and clinical characteristics of the patients who were undergoing TMS application in a psychiatry clinic. Most of the individuals were found to be women and married. Besides, most of these women were found to be 26–59 years old and had a diagnosis of depression and bipolar disorder. A comparison showed our findings to be consistent with the results in the relevant literature.^{11,18–20} Being married and at reproductive age are among the risk factors of depression.²¹ In addition, the presence of neuroendocrine factors and subjective conditions such as menopause, frequent exposure of women to traumatic events, a male-dominated society, and a balance of power in favor of men make women more susceptible to mental diseases. Moreover, stressors are more common among women of reproductive age (pregnancy, motherhood, housewife, working life); and this makes women more prone to mental diseases including mood disorders.^{22,23} When the psychiatric diagnosis types of the individuals in the study were examined, the frequent diagnosis of depression supported the observation that the TMS application is applied mostly for the treatment of depression.^{6,11,12,14,19,24} It is thought that recognition of sociodemographic and clinical characteristics of the patients by the nurses, who apply TMS, is highly important for the therapeutic communication and therapeutic approach. These nurses will recognize the needs of the individuals since they know these characteristics and thus, they can perform effective nursing interventions.

Pregnant and postpartum women were also found in our study to be among the individuals who underwent TMS. Nearly 10% of the women get the diagnosis of major depression during pregnancy.²⁵ In the literature, it has been reported that TMS can be applied to pregnant individuals having a diagnosis of depression due to its antidepressant activity.^{14,26,27} Since TMS is an option that does not require the use of medications, it was indicated to be appropriate for psychiatric patients who cannot tolerate or prefer not to take medications or who should avoid medications.¹⁴ The results of our study are important for the nurses to know that there may be a special group of patients undergoing TMS (such as pregnant and postpartum women) who may have special needs. Besides, the results of this study are important for the nurse to make plans for nursing care in this respect.

Our study determined that the majority of the individuals undergoing TMS did not have suicide ideations. In our study, low suicidal ideation in patients undergoing TMS may be associated with the relative length of application time and the clinical

TABLE 2 The distribution of psychiatric diagnoses based on sociodemographic characteristics and clinical conditions

Sociodemographic characteristics and clinical conditions	Psychiatric diagnoses								χ^2	p Value
	Depression		Psychotic disorder		Bipolar disorder		Other ^a			
	n	%	n	%	n	%	n	%		
Age										
<18 years	2	33.3	1	16.7	1	16.7	2	33.3	10.798	0.126
18–25 years	18	45.0	2	5.0	9	22.5	11	27.5		
26–59 years	206	58.5	26	7.4	59	16.8	61	17.3		
>60 years	72	66.1	4	3.7	13	11.9	20	18.3		
Sex										
Women	207	62.0	10	3.0	56	16.8	61	18.2	20.536	0.0001 ^b
Men	91	52.6	23	13.3	26	15.0	33	19.1		
Marital status										
Single	44	42.7	19	18.4	20	19.4	20	19.4	36.645	0.0001 ^b
Married	220	64.1	12	3.5	51	14.9	60	17.5		
Widow/divorced	34	55.7	2	3.3	11	18.0	14	23.0		
Place of residency										
City	230	58.8	27	6.9	67	17.1	67	17.1	3.210	0.360
Rural	68	58.6	6	5.2	15	12.9	27	23.3		
The duration of psychiatric diagnosis										
1–5 years	162	62.3	14	5.4	39	15.0	45	17.3	5.072	0.828
6–10 years	69	54.3	10	7.9	24	18.9	24	18.9		
11–15 years	40	57.1	4	5.7	10	14.3	14	22.9		
16 years and more	27	54.0	5	10.0	9	18.0	9	18.0		
Concomitant medical diagnosis										
No	174	57.0	19	6.2	50	16.4	62	20.3	1.823	0.610
Yes	124	61.4	14	6.9	32	15.8	32	15.8		
Suicide ideation										
No	233	58.1	27	6.7	59	14.7	82	20.4	6.593	0.086
Yes	65	61.3	6	5.7	23	21.7	12	11.3		
Special condition										
No	276	58.1	32	6.7	80	16.8	87	18.3	11.183	0.513
Pregnant	10	71.4	0	0.0	0	0.0	4	18.3		
Postpartum	10	71.4	0	0.0	2	14.3	2	14.3		
Other (vision and hearing loss)	1	33.3	1	33.3	0	0.0	1	14.3		
Pharmacotherapy										
No	11	64.7	0	0.0	2	11.8	4	23.5	1.698	0.637
Yes	287	58.6	33	6.7	80	16.3	90	18.4		

Abbreviation: χ^2 , Chi-square; TMS, transcranial magnetic stimulation.

^aOther: Attention deficit disorder with hyperactivity, obsessive-compulsive disorder, anxiety disorder, somatoform disorder and alcohol/substance use disorder.

^bStatistically significant scores for p value ($p < 0.05$).

TABLE 3 The number of TMS courses based on sociodemographic characteristics of the individuals and the clinical conditions

Sociodemographic characteristics and clinical conditions	The number of TMS courses				χ^2	p Value
	1 Course		2 Courses			
	n	%	n	%		
Age						
<18 years	4	66.7	2	33.3	5.721	0.126
18–25 years	39	95.1	2	4.9		
26–59 years	324	91.0	32	9.0		
>60	102	92.7	8	7.3		
Sex						
Women	310	92.8	24	7.2	2.363	0.124
Men	159	88.8	20	11.2		
Marital status						
Single	97	91.5	9	8.5	1.729	0.421
Married	318	92.2	27	7.8		
Widowed/divorced	54	91.4	8	8.6		
Place of residency						
City	358	90.9	36	9.1	0.679	0.410
Rural	111	93.3	8	6.7		
Concomitant medical diagnosis						
No	281	90.4	30	9.6	1.152	0.283
Yes	188	93.1	14	6.9		
Suicide ideation						
No	371	91.4	35	8.6	0.005	0.945
Yes	98	91.6	9	8.4		
Special condition						
No	441	91.7	40	8.3	3.099	0.541
Pregnant	13	92.9	1	7.1		
Postpartum	12	85.7	2	14.3		
Other (vision and hearing loss)	1	66.7	0	33.3		
Pharmacotherapy						
No	16	94.1	1	5.9	0.163	0.687
Yes	453	91.3	43	8.7		
Psychiatric diagnoses						
Depression	275	59.4	23	52.3	12.023	0.007 ^a
Psychotic disorder	25	5.4	8	18.2		
Bipolar disorder	78	16.8	4	9.1		
Other ^b	85	18.4	9	20.5		

Abbreviation: χ^2 , Chi-square; TMS, transcranial magnetic stimulation.

^aStatistically significant scores for p value ($p < 0.05$).

^bOther: Attention deficit disorder with hyperactivity, obsessive-compulsive disorder, anxiety disorder, somatoform disorder, and alcohol/substance use disorder.

TABLE 4 The correlation between clinical conditions of the individuals and the duration of their psychiatric diagnoses

Clinical condition	The duration of psychiatric diagnosis	
	<i>r</i>	<i>p</i>
Suicide ideation	0.016	0.713
TMS procedure	0.090	0.041 ^a
Pharmacotherapy	0.086	0.052

Abbreviation: TMS, transcranial magnetic stimulation.

^aStatistically significant scores for *p* value (*p* < 0.05).

efficiency of TMS. Thus, it has been known that TMS treatment is applied for 20 sessions and its effect emerges after 2 weeks.^{16,17}

Another determination of our study was that most of the individuals undergoing TMS did not have any physical discomfort in addition to the psychiatric diagnosis. TMS is a reliable application due to its noninvasive nature.¹² But in some cases it is contraindicated. These are for the individuals who have local and generalized encephalopathy, epileptic patients who do not receive antiepileptic therapy and who were not previously treated, and individuals who have a history of epilepsy among their relatives, who are addicted to substances such as cocaine, who have severe cardiac disease, or who have an increase in intracranial pressure. Besides, TMS also should not be used for anyone with a pacemaker, cardiac defibrillator, or intracranial implants.¹⁶ For this reason, nurses who will perform TMS applications have to know very well any contraindicated conditions for this application.

No difference was found between the frequency of TMS courses based on the patients' states of taking medications. This situation showed that patients' states of taking medications did not affect the number of TMS courses. It was also found in the study that patients, except the individuals with a special condition such as pregnancy or being postpartum, took one course of TMS treatment in combination with medication therapy. In the literature, it has been reported that the TMS application may be added as a supplement in case of situations requiring medication treatment.¹ Moreover, it was seen that almost all of the individuals underwent one course of TMS (20 sessions) in our study. This shows that this application has not been very common in Turkey yet. TMS can only be performed in Turkey in the universities and it is only covered by social security when it is performed in the universities. The list of interventional procedures found in the notification of health practices by the Social Security Institution notes that TMS can be applied in a tertiary healthcare institution after having a report from a health board including three psychiatrists that shows a medical justification.²⁸ Again, this situation reminds us that the TMS application is still very new (just 3 years in place) in the hospital where the study was conducted due to the procedures during 2015–2018 when data were retrospectively included.

This study also found that demographic variables of the individuals undergoing TMS such as age, sex, marital status, and place

of residency were not predictors of the number of TMS courses. This situation shows that such sociodemographic variables do not affect whether the individual will undergo TMS application or not or how many courses he/she will have, and these variables cannot be taken into consideration.

Place of residency was not found to have a significant effect on the type of diagnosis (such as depression, psychotic disorder, or bipolar disorder). In a study investigating the distribution of diagnosis of psychiatric disorders in a rural region having a psychiatric service for the first time and the relationship between these diagnoses and sociodemographic characteristics, it was reported that there was no relationship between psychiatric diagnoses of the individuals and their places of residency.^{21,29} Our results support the relevant data in the literature. This situation shows that diagnostic groups can be observed in every society and region as a result of differentiation in nutrition styles, and living and environmental conditions with the rapid spread of globalization and technological developments, also in Turkey.

It was also found that the number of TMS courses increased as the duration of the psychiatric diagnoses of the individuals increased in our study. Since mental diseases are chronic, their treatment methods are applied for the long term. It can be stated that treatment methods are effective in dealing with these symptoms. However, these treatment methods do not show long-term effects on chronic mental diseases, and these treatment methods are applied again as disease recurs.²² In this context, an increase in the duration of psychiatric disease promotes the use of these applications. These are considered to be important data in terms of the recognition of patient's motivational needs for TMS treatment and the planning of nursing interventions by the psychiatric nurses in this regard. It was thought that data obtained for this procedure, which has been recently used for psychiatric patients in Turkey, might be important for future interventions of other nurses who would use this procedure.

4.1 | Limitations

This was a retrospective and descriptive study. Data about the patients were collected from the records during the study. Therefore, there are no records regarding the disease levels of the patients. Besides, there are also no records regarding selection, follow-up, and outcomes of the patients who underwent TMS. These are the limitations of the study.

5 | CONCLUSIONS

As this study was the first in this field in Turkey, it was concluded that the majority of the individuals who have undergone TMS treatment were women and had a diagnosis of depression; almost all of the individuals have taken pharmacotherapy together with TMS; a significant difference was found between psychiatric diagnoses of the patients based on the incidence of TMS application; and a

positive correlation was found between the duration of the psychiatric diagnosis and the number of TMS.

5.1 | Implications for nursing practice

This study was considered to provide important data regarding TMS use due to the lack of any similar study performed in Turkey. The results of this study seemed to contribute to the regulations for the identification of patients who would undergo TMS in the clinics. Besides, they are important in terms of the recognition of patient groups by the nurse who will perform TMS and the improvement of nursing approaches in this respect. In this context, we suggest conducting a review of the effects of TMS application with larger sample groups and to conduct further studies regarding this subject for psychiatric nursing.

Data obtained from this study and the participation of nurses who work in this field in regular training programs such as courses and seminars on these patients' characteristics are quite important for psychiatric nursing.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

All authors were involved in study planning and design, concept and design, collecting the data, analysis and interpretation of data, drafting the article, and final approval of the version to be published. All authors approved the final version for submission.

DATA AVAILABILITY STATEMENT

Data were available on request from the authors due to privacy/ethical restrictions. The data that support the findings of this study are available on request from the corresponding author.

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