



Assessment of abuse and related factors in older patients with cancer

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Abstract

Background Older cancer patients are more likely to present with functional dependency, multiple comorbidities, polypharmacy, malnutrition, and cognitive dysfunction than their younger counterparts which increases the risk of elder abuse. Herein, in this single-institution observational study, we aimed to determine the frequency and risk factors of abuse in cancer patients aged 70 and above.

Methods A total of 217 cancer patients aged ≥ 70 years who applied to the medical oncology outpatient clinic between June 2020 and January 2021 were included in this study. Informed consent was obtained before data collection. The Hwalek-Sengstock Elder Abuse Screening Test (H-S/EAST) was used to evaluate elder abuse. Sociodemographic characteristics and clinical measurements were collected.

Results The mean age was 75.5, and 59.4% were male. The prevalence of abuse risk in older patients with cancer was 39.2%. In the multivariate logistic regression model, applying to the outpatient clinic for treatment (OR: 3.369, 95% CI: 1.455–7.802, $p = 0.005$), living in urban (OR: 5.787, 95% CI: 2.377–14.090, $p < 0.001$), history of falls (OR: 4.587, 95% CI: 1.789–11.762, $p = 0.002$), and being depressed according to the Geriatric Depression Scale-15 (GDS-15) score (OR: 10.788, 95% CI: 4.491–25.914, $p < 0.001$) were associated with an increased risk of elder abuse. Primary/junior education level and high school/university education level were protective against elder abuse risk compared to being illiterate (OR: 0.073, 95% CI: 0.025–0.210 and OR: 0.213, 95% CI: 0.056–0.806, respectively).

Conclusion Cancer patients aged ≥ 70 years had a high risk of elder abuse. Elder abuse should be screened in patients with cancer, and the effects of this phenomenon on cancer care should be investigated in larger studies.

Keywords Elder abuse · Cancer · Risk factors

Introduction

Elder abuse is one of the most hidden forms of domestic violence in the caregiver-older relationship and frequently damages older adults [1]. The WHO describes elder abuse as “a single or repeated act, or lack of appropriate action, occurring within a relationship where there is an expectation of trust which causes harm or distress to an older person” [2]. Several findings that are medically difficult to explain, such as recurrent wounds or injuries and unexplained weight loss, could denote elder abuse [3], although elder abuse is often unnoticed and underreported [4]. Both the concealed nature of the abuse between the victim and the perpetrator

and the relative lack of precise measurement tools are two of the most important reasons for the under-reporting.

The aging of the general population has resulted in a progressive increase in the number of older patients with cancer [5]. Regardless of age, a cancer diagnosis can cause physical and emotional stress; however, cancer patients' special conditions increase stress and anxiety. Older cancer patients are more likely to tend to present with functional dependency, comorbidity, polypharmacy, malnutrition, cognitive dysfunction, and depression than their younger counterparts. Unmet psychosocial issues can adversely affect older patients' ability to cope with their illness and limit their ability to access and receive necessary healthcare resource [6]. Elder abuse is a very important public health problem that affects older health physically, mentally, and socially; causes increases in morbidity and mortality rates; and requires urgent intervention [7]. Abusive behaviors may

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be subtle at the beginning of a relationship but tend to escalate over time and intensify during significant life events where reliance on an individual in a relationship increases. In this regard, the cancer diagnosis could be a particularly vulnerable time for the escalation of abuse due to the factors such as an increased reliance on a partner or family member for basic needs. In addition, increased emotional stress levels in caregivers of older patients with cancer may increase the likelihood of abuse.

Elder abuse can potentially adversely affect the follow-up and treatment process in cancer patients. To our best knowledge, there is no study in the published literature evaluating the frequency of elder abuse and predisposing factors in cancer patients. In the National Comprehensive Cancer Network (NCCN) Older Adult Oncology guideline, there is only one suggestion as to screen elder abuse: ask the patient, “Do you feel safe at home?” [8].

From these points, in this study, we aimed to determine the frequency and risk factors of abuse in patients with cancer aged 70 and over.

Methods

Participants

A total of 261 patients ≥ 70 years (no upper age limit) diagnosed with various cancer types applied to the medical oncology outpatient clinic of Erzincan Mengücek Gazi Research Hospital between June 15, 2020, and January

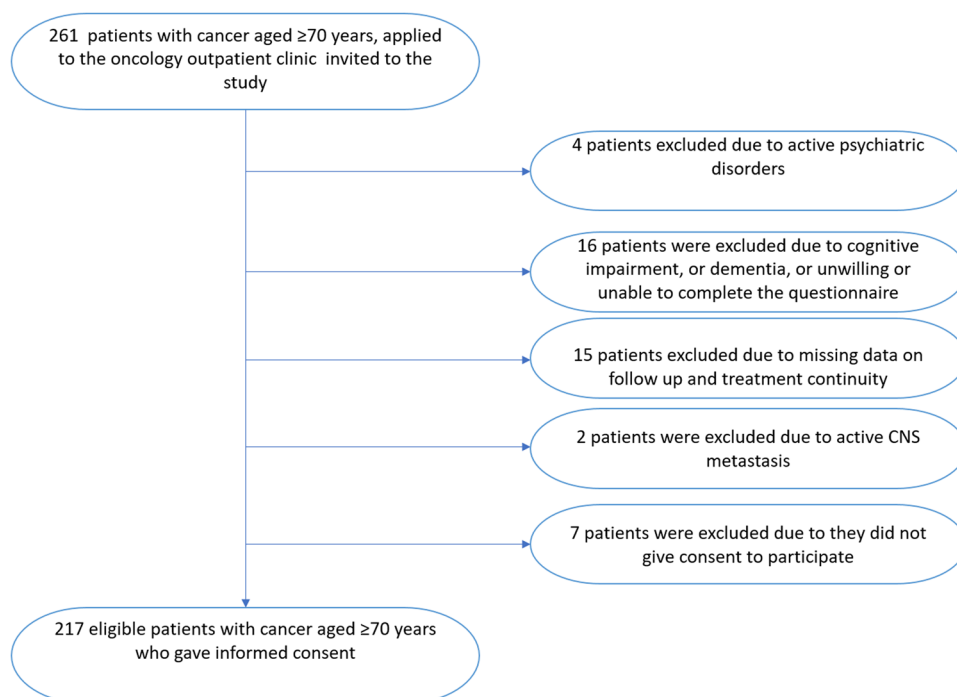
20, 2021, were invited to the present observational study. Patients with an active diagnosis of psychosis, patients who had cognitive impairment or dementia, or unwilling or unable to complete the questionnaire were excluded from the study. Patients with known central nervous system (CNS) metastasis were also excluded (Fig. 1).

Data collection

Data were collected using a standardized form for sociodemographic characteristics which was prepared for the study. The data collection forms were explained to the older patients with cancer by the researcher (medical oncologist) and their verbal and written permission was requested. For written permission, the participants signed an informed consent form prepared by the researcher. The data were collected in the outpatient oncology clinic area. The questions were read by the researchers (medical oncologist, internal medicine specialist) and the patients were asked to respond to the questions. Caregivers of the patients were not allowed into the room. The questions were asked while the patient was alone.

The demographic characteristics, educational status, economic dependency, tumor type, number of children, living style, the reason for applying to the outpatient clinic (treatment, follow-up), and place of residence (urban or rural) were recorded. According to the education system of our country, we divided the education status into primary, junior, high school, and university. Those who did not receive education were defined as illiterate. Economical independence

Fig. 1 Flowchart of the enrollment process



was defined as the monthly income equal to or more than expenses and not needing financial assistance. Economic dependency was defined as income less than expenses and needing financial assistance.

To evaluate treatment or follow-up compliance, we asked, “Have you ever missed your follow-up or treatment at the planned time since diagnosed with cancer?” At the same time, we examined the patients’ medical records of the oncology outpatient clinic and checked whether the patients delayed their follow-up or treatment. We also checked the follow-up and treatment schedule card with the patient and compared it with the electronic records. We defined patients who were “non-compliant” as patients who did not apply to the medical oncology outpatient clinic at the planned follow-up or treatment time. The follow-up group was defined as patients in remission and came to the outpatient oncology clinic for their routine follow-up visits. The treatment group was defined as patients applied to the medical oncology outpatient clinic for any form of anti-cancer therapy that requires regular visits (chemotherapy, chemoradiotherapy, immunotherapy, supportive care, hormone therapy, etc.).

Measures

The Hwalek-Sengstock Elder Abuse Screening Test (H-S/EAST) was used to evaluate elder abuse in the study population. The H-S/EAST elder abuse measure was developed as a short screening tool to identify older people at risk of abuse, neglect, or mistreatment [9]. It has a three-dimensional structure: direct abuse, characteristics of vulnerability, and potentially abusive situations. It is composed of 15 “Yes/No” items about vulnerability characteristics of the elderly (e.g., sadness/loneliness, self-inability in outdoors), potentially abusive situation (no privacy at home, alcoholic or addicted family members), and violation of personal rights or direct abuse (forced to do things that not want ...) (Supplementary Table 1). The H-S/EAST could correctly identify 75% of known elder abuse cases from matched controls [10]. The score ranges from 0 to 15, and if this score is greater than 3 out of at least 9 questions, it presented the risk of abuse, neglect, or exploitation [10]. The greater score in the H-S/EAST indicates a higher probability of abuse. In the present study, the cut-off point was set as 3, and the scores greater than 3 indicated the presence of abuse and neglect risk.

Activities of Daily Living (ADLs) of Barthel et al. [11] and Instrumental Activities of Daily Living (IADL) of Lawton et al. [12] scores that evaluated functional status were used. The Barthel score consists of 10 items: eating, bathing, self-care, dressing, bladder control, bowel control, toilet use, chair/bed transfer, mobility, and ladder use. Its scores range from 0 to 100. Patients with a score less than 90 were defined as dependent. The Lawton Scale includes eight items

(ability to use the telephone, shopping, cooking, housekeeping, doing laundry, the responsibility of own medication, mode of transportation, and ability to handle finances), with a score for each item of zero (low function, dependent, impairment) or one (high function, independent, no impairment). Because some of these items (cooking, housekeeping, and doing laundry) are mostly done by women, these three items were not assessed in males in the original form, so the total score ranged from zero to five for men and from zero to eight for women. Consequently, dependency in IADL is defined as a score of < 5 (male) or < 8 (female).

Comorbidity was evaluated by the Charlson Comorbidity Index (CCI) [13]. Cognitive status was measured by using the Mini-Mental State Examination (MMSE) (categorized 24–26: mild cognitive impairment vs ≥ 27 : no cognitive impairment) [14]; to obtain more reliable results on elder abuse, patients with a score of < 24 were excluded from the study. The psychological state was determined by the short version of the Geriatric Depression Scale-15 (GDS-15) (≥ 5 is depressed) [15]. The Mini Nutritional Assessment (MNA) [16] was used to evaluate the nutritional status of patients. The number of drugs was recorded, and use of ≥ 5 drugs was defined as polypharmacy. The Visual Analog Scale (VAS) was used to assess the level of pain (≥ 1 is abnormal) [17]. Eastern Cooperative Oncology Group-Performance Status (ECOG-PS) (categorized in 0–1 vs 2–4) scores were also recorded [18]. Fall history was evaluated by asking the number of falls and fall-related injuries in the past 12 months (presence of falls vs absence).

Statistical analysis

IBM SPSS 22 (Armonk, NY: IBM Corp.) package program was used for statistical analysis of the data. Age variable was presented as mean $\pm$ standard deviation, minimum–maximum value. Categorical variables were summarized as number (n) and percentage (%). The distribution of variables in risk groups determined according to the H-S/EAST score was examined with the chi-square test. Logistic regression analysis was applied to variables that were found to be significant as a result of univariate analysis. The forward LR test was used to create the final model in regression analysis. The model was adjusted for gender and age that variables with a p-value ≤ 0.1 were added in the final model. As a result of the regression analysis, odds ratio (OR) and confidence intervals (95% CI) were presented. Results with $p < 0.05$ in all tests were considered statistically significant.

Ethical approval

This study was performed following the approval of the Republic of Turkey Ministry of Health and the Clinical Research Ethics Committee of Prof Dr. Cemil Taşcıoğlu

State Hospital (48,670,771–514.10/423). All the procedures in the report have adopted the ethical principles of the Institutional Research Committee, the 1964 Helsinki declaration, and subsequent amendments.

Results

After exclusion of the 44 patients with conditions meeting exclusion criteria, 217 patients were included in the study. The mean age was 75.5 (range 70–90 years), and 59.4% ($n = 129$) were male. In the study, the prevalence of abuse risk in the older patients with cancer was 39.2% ($n = 85$).

The mean H-S/EAST score of the older individuals was 0.6 ± 0.9 for the sub-dimension of the characteristics of vulnerable elderly, 0.4 ± 0.6 for the sub-dimension of the violation of personal rights and direct abuse, and 1.0 ± 1.0 for the sub-dimension of potential abuse. The mean total H-S/EAST score was 2.0 ± 1.8 . The frequencies of answers to items of H-S/EAST are shown in Supplementary Table 2.

In univariate analysis of patient demographics, female gender, not having children, living in urban, and lower educational status were associated with risk of elder abuse (Table 1).

Univariate analysis of clinical features revealed that ovarian or breast cancer diagnosis, applying to the outpatient

clinic for treatment, non-compliance, worse performance status (ECOG-PS score ≥ 2), high VAS score, dependence, presence of falls, lower MNA score, being depressed according to the GDS-15 score (> 4), and higher CCI score were associated with an increased risk of elder abuse (Table 2).

In the multivariate logistic regression model, applying to the outpatient clinic for treatment (OR: 3.369, 95% CI: 1.455–7.802, $p = 0.005$), living in urban (OR: 5.787, 95% CI: 2.377–14.090, $p < 0.001$), history of falls (OR: 4.587, 95% CI: 1.789–11.762, $p = 0.002$), and being depressed according to the GDS-15 score (OR: 10.788, 95% CI: 4.491–25.914, $p < 0.001$) were associated with an increased risk of elder abuse. Primary/junior education level and high school/university education level were protective against elder abuse risk compared to being illiterate (OR: 0.073, 95% CI: 0.025–0.210 and OR: 0.213, 95% CI: 0.056–0.806, respectively) (Table 3).

Discussion

This study was conducted to evaluate the risk of elder abuse in cancer patients aged older than 70. To our knowledge, this is the first study that assessed elder abuse in oncology practice. Elder abuse is a global issue, underlined especially in recent years. It is a serious social problem that can include

Table 1 Demographic characteristics of patients according to risk of abuse

		Risk of abuse (–)		Risk of abuse (+)		Total		p
		n	%	n	%	n	%	
Age	70–74	62	60.2	41	39.8	103	47.5	0.956
	75–79	43	60.6	28	39.4	71	32.7	
	≥ 80	27	62.8	16	37.2	43	19.8	
Gender	Male	87	67.4	42	32.6	129	59.4	0.016
	Female	45	51.1	43	48.9	88	40.6	
Economic dependency	Dependent	122	62.6	73	37.4	195	89.9	0.119
	Independent	10	45.5	12	54.5	22	10.1	
Patients they live with	Alone	9	50.0	9	50.0	18	8.3	0.661
	Spouse + children	100	61.3	63	38.7	163	75.1	
	Children	13	59.1	9	40.9	22	10.1	
	Caregiver	10	71.4	4	28.6	14	65.5	
The number of children	None	2	33.3	4	66.7	6	2.8	0.031
	1–3	66	56.4	51	43.6	117	53.9	
	≥ 4	64	68.1	30	31.9	94	43.3	
Place of residence	Rural	58	75.3	19	24.7	77	35.5	0.001
	Urban	74	52.9	66	47.1	140	64.5	
Marital status	Married	102	61.1	65	38.9	167	77.0	0.891
	Divorced/single/death spouse	30	60.0	20	40.0	50	23.0	
Education level	Illiterate	19	30.2	44	69.8	63	29.0	<0.001
	Primary/junior	95	75.4	31	24.6	126	58.1	
	High school/university	18	64.3	10	35.7	28	12.9	

Table 2 Clinical features of patients according to risk of abuse

		Risk of abuse (–)		Risk of abuse (+)		Total		p
		n	%	n	%	n	%	
Tumor type	Breast	18	42.9	24	57.1	42	19.4	0.021
	Colorectal	27	75.0	9	25.0	36	16.6	
	Lung	25	65.8	13	34.2	38	17.5	
	Ovarian	9	45.0	11	55.0	20	9.2	
	Prostate	20	69.0	9	31.0	29	13.4	
	Upper GI	30	68.2	14	31.8	44	20.3	
	Other	3	37.5	5	62.5	8	3.7	
Outpatient type	Follow-up	66	75.9	21	24.1	87	40.0	0.001
	Treatment	66	50.8	64	49.2	130	60.0	
Compliance with follow-up and treatment*	Compliant	106	64.2	59	35.8	165	76.0	0.067
	Non-compliant	26	50.0	26	50.0	52	24.0	
ECOG-PS	0–1	97	70.3	41	29.7	138	63.6	<0.001
	≥ 2	35	44.3	44	55.7	79	36.4	
VAS pain score	No pain (score = 0)	55	72.4	21	27.6	76	35.0	0.038
	Mild pain (score = 1–3)	67	54.5	56	45.5	123	56.7	
	Pain to treat (score ≥ 4)	10	55.6	8	44.4	18	8.3	
Polypharmacy	0–4 different drugs	92	62.2	56	37.8	148	68.2	0.556
	≥ 5 different drugs	40	58.0	29	42.0	69	31.8	
ADL score	Dependent (score: < 90)	41	53.9	35	46.1	76	35.0	0.127
	Independent (score: ≥ 90)	91	64.5	50	35.5	141	65.0	
IADL score	Dependent: score < 8 (female), < 5 (male)	44	48.4	47	51.6	91	41.9	0.001
	Independent score 8 (female), 5 (male)	88	69.8	38	30.2	126	58.1	
History of fall	No fall	103	66.9	51	33.1	154	71.0	0.004
	≥ 1 fall	29	46.0	34	54.0	63	29.0	
MNA score	Normal nutrition (score ≥ 12)	74	66.7	37	33.3	111	51.2	0.071
	Risk of malnutrition (score: 8–11)	38	60.3	25	39.7	63	29.0	
	Malnourished (score: ≤ 7)	20	46.5	23	53.5	43	19.8	
GDS-15 score	Not depressed (score: < 4)	82	80.4	20	19.6	102	47.0	<0.001
	Depressed (score: ≥ 5)	50	43.5	65	56.5	115	53.0	
Charlson Comorbidity Index	0	59	71.1	24	28.9	83	38.2	0.035
	1	46	57.5	34	42.5	80	36.9	
	2	27	50.0	27	50.0	54	24.9	
MMSE score (24–30)	Mean score ± SD	27.1 ± 1.9		27.8 ± 2.0		27.3 ± 2.0		0.796

*Fifteen patients had missing data and excluded from analysis

Abbreviations: *ADL* Activities of Daily Living, *ECOG-PS* Eastern Cooperative Oncology Group-Performance Status Scale, *GDS* Geriatric Depression Scale, *IADL* Instrumental Activities of Daily Living, *MNA* Mini Nutritional Assessment, *MMSE* Mini-Mental State Examination, *VAS* Visual Analog Scale, *SD* standard deviation

verbal, physical, and psychological abuse. The most serious problem with elder abuse and neglect is a lack of awareness or difficulty detecting it [19].

Cancer can have major adverse physical, psychosocial, and economic consequences for both the individual with the illness and their families [20]. During cancer patients' treatment, they are likely to experience psychological distress. Patients are confronted with challenges such as death anxiety, unresolved concerns, separation from family, and pain [21]. Older patients with cancer need more care and

attention, which puts more responsibility on caregivers and causes emotional stress. All of these factors could make older patients with cancer more prone to abuse.

The H-S/EAST is a valid and common tool to screen potential risk of elder abuse in community dwellers and differentiates actual abuse from other problems like depression, loneliness, or poverty [10]. Our research showed that older patients with cancer can answer sensitive questions about abuse and that H-S/EAST can be done in oncology outpatient clinics. We chose this screening test for cancer

Table 3 Multivariate logistic regression model for elder abuse risk (N = 217)

		OR	95% CI for OR		p
			Lower	Upper	
Age		0.987	0.895	1.063	0.296
Gender (female)		0.864	0.341	2.191	0.758
Place of residence (urban)		5.787	2.377	14.090	<0.001
Education level	Primary/junior	0.073	0.025	0.210	<0.001
	High school/university	0.213	0.056	0.806	0.023
Outpatient type (treatment)		3.369	1.455	7.802	0.005
History of falls (≥ 1)		4.587	1.789	11.762	0.002
GDS-15 score (depressed)		10.788	4.491	25.914	<0.001

Abbreviations: *GDS* Geriatric Depression Scale, *CI* confidence interval, *OR* odds ratio

patients because it takes 5 min among the currently long oncology outpatient examinations. Therefore, we think that this screening test is valuable in addition to physical examination. In our study, we found that the frequency of elder abuse risk in cancer patients was 39.2%. Most of the studies evaluating elder abuse are community- or institution-based. The frequency of elder abuse exposure varies between 2.6 and 45.7%, depending on the study group's characteristics [22–24].

It has been shown that dementia puts older people at a greater risk for abuse [25]. Elder abuse is a critical issue. For patients to understand the questions correctly and to get reliable results, patients with brain metastases, with known cognitive impairment, and who could not pass the Mini-Mental test were excluded from the study because the study was conducted with a scale. So, the actual rate in older patients with cancer may be considered higher.

Risk factors for elder abuse are advanced age, female gender, race, poor living conditions, living with other people, low education level, low-income level, isolation, lack of social support, inadequate physical activity, comorbidity, dementia, depression, family, and caregiver risk factors [26, 27]. Many of these risk factors are common in older patients with cancer.

In our study, we found that higher education level was protective against elder abuse risk. Recent studies demonstrated that lower educational and income levels were associated with neglect and elder abuse [28, 29].

In the multivariate logistic regression analysis, the patients who applied to the clinic for active treatment had an increased risk of elder abuse than patients who applied for follow-up. Cancer treatment requires more frequent and regular visits to the oncology clinics, so increased stress and financial burden on caregivers may increase elder abuse risk.

The present study showed that depression was an independent risk factor of elder abuse risk. Depression is a common problem in older patients with cancer [30]. A recent study demonstrated that there was a positive, significant relationship found between depression and elder abuse [31].

Patients living in urban also had an increased risk of elder abuse in the multivariate logistic regression model. Community-based studies conducted in different countries reported that individuals living in urban areas were at greater risk for elder abuse [32, 33].

In our study, we found that the risk of elder abuse increased in cancer patients with one or more falls. Falls and fall-related injuries are common in older adults with cancer and may affect subsequent cancer treatment [34]. Falls in older people occur commonly and are major factors threatening the independence of older individuals. As is the case for many geriatric syndromes, falls usually occur when impairments in multiple domains compromise the compensatory ability of the individual [35]. A recent community-based study demonstrated that history of abuse is strongly associated with falling in older adults [36].

Our study has several limitations. First of all, the modest sample size of the study has precluded us from making additional subgroup analyses in the individual tumor types. Our study was conducted in a rather low-resource setting as evidenced by the high rates of illiterate patients and patients living in the rural areas. A significant portion of our patients was living with their children. These factors limited the generability of our results to high-resource settings and Western countries. We did not use a quality of life scale in this study. Also, we did not assess the stress of caregivers. Lastly, we excluded a vulnerable patient group for abuse (the patients with mental and cognitive problems) from the study which could lead to underreporting bias. However, despite these limitations, we think that we could be able to take the snapshot of an important critical for the first time in the literature.

Conclusion

In our experience, most patients with cancer aged ≥ 70 years had a high risk of elder abuse. History of falls, living in urban, lower educational level, and depression were risk factors of elder abuse. Additionally, risk of elder abuse

increased in patients receiving active cancer treatment. Our findings also suggest that older cancer patients may respond to sensitive questions regarding abuse and that H–S/EAST can be performed in oncology outpatient clinics. Elder abuse should be screened in patients with cancer and the effects of this phenomenon on cancer care should be investigated in larger studies.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s00520-021-06391-7>.

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Author contribution BA and ZA contributed to the study conception and design. Material preparation and data collection were performed by BA, ED, LD, and FO. Statistical analyses were performed by YA. BA, DCG, AG, ZA, MMA, MO, and IC wrote the first draft of the manuscript and commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Data availability We have full control of all primary data and agree to allow the journal to review the data if requested.

Code availability Not applicable.

Declarations

Ethics approval This study was approved by the Ethical Committee Prof Dr. Cemil Taşcıoğlu State Hospital (48670771–514.10/423).

Consent to participate All the methods in the present study were carried out in accordance with guidelines of the Declaration of Helsinki. All participants provided written informed consent.

Consent for publication All participants have been informed and provided consent for publication of their data in the manuscript.

Conflict of interest The authors declare no competing interests.

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