

The Effect of Nasogastric Tube on Patients' Self-esteem

Engin Türkyılmaz¹, Fatma Tok Yıldız^{2*}

¹Sivas Cumhuriyet University, Institute of Health Sciences, Sivas, Türkiye

²Sivas Cumhuriyet University, Vocational School of Health Care Services, Sivas, Türkiye

ABSTRACT

The aim of this study was to determine self-esteem levels in patients with nasogastric tube (NGT) insertion and to examine the socio-demographic and clinical variables affecting self-esteem. The study was conducted in a descriptive and cross-sectional design. Following ethics committee and institutional approval, the study was carried out between December 31, 2024, and May 31, 2025, in the medical and surgical inpatient clinics of Sivas Cumhuriyet University Hospital. A total of 304 patients who met the specified criteria and provided informed consent were included in the study. Data were collected using a Personal Information Form and the Coopersmith Self-Esteem Inventory. Descriptive statistics, Mann-Whitney U test, and Kruskal-Wallis test were used for statistical analyses. The mean self-esteem score of patients with NGT insertion was 43.01 ± 0.76 , which is considered low. Patients' self-esteem scores were significantly higher with increasing age, among married individuals, among primary school graduates, and among those who were unemployed compared to other groups, and these differences were statistically highly significant. Additionally, self-esteem scores were significantly lower and statistically highly significant among patients receiving treatment in general surgery clinics, those hospitalized for 6-10 days, those using the NGT for 1-3 days, those who stated "I don't feel clean" due to the NGT and those who reported that their movements were completely restricted compared to others. It was observed that patients with NGT insertion had low self-esteem and that self-esteem levels were affected by both socio-demographic and clinical factors. The findings highlight the importance of holistic nursing care that takes psychosocial needs into account in this patient group. No studies in the literature were found regarding the effect of NGT insertion, an invasive nursing intervention, on patients' self-esteem, and in this respect, the study is expected to make a significant contribution to nursing science.

Keywords: Nasogastric Tube, Self-esteem, Nursing

*Corresponding author: Fatma Tok Yıldız, email: ftok@cumhuriyet.edu.tr

INTRODUCTION

Nasogastric tube (NGT) application is an invasive procedure used to provide nutrition through a tube inserted into the stomach through the nose, empty stomach contents and support diagnosis-treatment processes. NGT, whose first use dates back to the 17th century, entered the medical literature with the nutritional applications of Aquapendente; over time, it gained different uses with the contributions of researchers such as Hunter, Kussmaul and Levin (Akıncı, 2011; Cannaby, 2002). The use of flexible and biocompatible materials such as polyurethane has increased patient comfort and application safety (Çelik, 2013). It is widely used in intensive care and long-term care processes, especially in patients who have difficulty swallowing, lose consciousness or are in the post-surgical period (Öz, Sarılı, Kanat, 2024). Proper selection and implementation of NGT are critical for patient safety and prevention of complications. Probe selection; it should be done according to factors such as the patient's

age, physiological characteristics, purpose of application, material used and duration of use (Metheny et al., 2019; Rahimi et al., 2015). Improper placement and improper care can lead to life-threatening mechanical complications such as pneumothorax, mucosal damage, and infections (Güllüpinar, 2013). Studies have reported that NGT -related complication rates vary between 2-36% (Kaltenmeier et al., 2020). NGT implementation and maintenance are largely the responsibility of nurses. Nurses; It is responsible for verifying the correct placement of the catheter, providing daily care, monitoring the feeding process, managing medication administrations and providing training to patients and caregivers (Güllüpinar, 2013; 2023; Ministry of Health, Republic of Turkey, 2023). In this process, it is important to prevent physical complications and support the patient's psychosocial adaptation. Many adult patients, requires invasive anduncomfortable therapies, such as NGT, a relatively common, standard, and short-term therapy prescribedfor specific clinical conditions to prevent or ameliorate malnutrition. And NGT is known to cause hospitalized patients consider-able physical and

psychosensory distress (Padilla & Grant, 1985; Green & Vandall-Walker, 2017). In particular, the fact that NGT use changed the individual's appearance, restricted their eating habits, and limited their social interactions is shown to be among the primary factors undermining the individual's self-confidence. For example, it has been determined that patients who have to use NGS for an extended period due to head and neck cancer isolate themselves further from society because of changes in their appearance, and that this situation lowers their self-esteem (Karagözoğlu et al., 2016; Best, 2007).

Self-concept is a dynamic structure that expresses the whole of an individual's perceptions, feelings and evaluations about himself (Tözün, 2010). Self-esteem is a basic psychosocial variable that reflects how valuable and sufficient an individual feels (Sevim & Artan, 2021). Low self-esteem has been associated with depression, anxiety, adjustment difficulties, and decreased quality of life (Schiraldi, 2023). Physical and chronic diseases, especially cancer and surgical interventions, can negatively affect an individual's self-esteem (Üstündağ et al., 2017). Meeting the physiological, psychological and social needs of individuals in health services forms the basis of quality care. One of the methods developed for individuals who cannot perform basic functions such as nutrition and medication intake due to various diseases is the application of a NGT. However, NGT can have psychological and social effects as well as physical benefits. Especially in long-term NGT use, individuals may experience feelings of addiction, powerlessness and loss of control more intensely; This can negatively affect psychological well-being and lead to a decrease in self-esteem. Because of studies involving tube feeding and/or NGT feeding highlight that tube feeding or NGT causes physical discomfort, difficulties, and limitations for patients (Padilla & Grant, 1985; Green & Vandall-Walker, 2017). So, self-esteem is a basic psychological construct that expresses the positive/negative totality of an individual's evaluations of himself/herself, and medical interventions that affect appearance or limit independence are associated with a decrease in self-esteem (Tözün, 2010).

The literature indicates that the possible decrease in self-esteem in patients using NGT may be accompanied by psychosocial problems such as social isolation, depression, anxiety, and loss of self-confidence (Karagözoğlu et al., 2016; Best, 2007). The fact that NGT is a visible medical tool, restricts eating habits, and limits social interaction are considered among the main factors that can damage an individual's self-confidence. External appearance changes have been reported to be associated with social withdrawal and decline in self-esteem, especially in patients using long-term NGT for head and neck cancer (Karagözoğlu et al., 2016; Best, 2007). It is emphasized that nursing care is not limited to maintaining physical well-being; psychological and social needs should also be supported holistically. In this context, it is important for nurses to develop self-esteem-protective interventions with empathetic communication, supportive care and approaches that take into account psychosocial needs (Alkan Ağaçdiken et al., 2024; Taylor, 2005). Reducing uncertainty anxiety by explaining the NGT process to the patient, encouraging the

patient's participation in activities of daily living, helping to maintain social support networks, and emphasizing the patient's strengths are among the recommended strategies. In addition, the positive attitude and social support of nurses can increase psychological well-being, especially in patients undergoing cancer treatment (Alkan Ağaçdiken et al., 2024; Cannaby et al., 2002). Invasive applications are effective on body image and self-esteem; Studies have shown that the relationship between body image and self-esteem is significant in patients with stoma and radical surgery (Üstündağ et al., 2007; Vatansever, 2014; Zümreler, 2020; Toktaş, 2024; Pehlivan, 2024). However, it is stated that studies directly examining the effect of NGT on self-esteem are limited; this gap necessitates the development of holistic evaluation and self-esteem-supporting nursing interventions in patients undergoing NGT. The aim of this study was to evaluate the self-esteem levels of individuals who underwent nasogastric catheterization and to reveal the relationship of these psychosocial variables with various demographic, clinical, and social factors. Thus, it is aimed to present up-to-date data that will fill the gap in the existing literature in patients undergoing NGT, and to draw attention to the importance of holistic and multidisciplinary approaches in patient care for all health professionals, especially nurses.

METHODS

Type of Research

This study was conducted in a descriptive and cross-sectional research design. In the study, the current conditions of patients who underwent NGT in a certain period of time were examined; Self-esteem levels and associated variables were evaluated without any intervention.

Place and Time of Research

The research was conducted between December 31, 2024, and May 31, 2025, in internal and surgical inpatient clinics affiliated to Sivas Cumhuriyet University Health Services Application and Research Hospital. The study was conducted on patients hospitalized in these clinics and undergoing NGT.

Study Population and Sample

The population of the study consisted of patients who were hospitalized in the internal and surgical clinics of Sivas Cumhuriyet University Hospital between the specified dates. The sample size was determined to be 384 patients [since the number of individuals in the population is unknown, the number of individuals to be sampled was calculated using the formula $n = t^2 p \cdot q / d^2$ ($t=1.96$; $p=50$; $q=50$; $d=0.05$)]. The study included 304 patients aged 18 years and older with nasogastric catheters, no communication barriers, and who agreed to participate. Patients with impaired cognitive function, inability to speak Turkish, and neurodegenerative disease were not included

in the study. By the conclusion of the study, 79% of the sample population was reached.

Data Collection Tools

Descriptive Characteristics Form: The Descriptive Characteristics Form, prepared by the researcher in line with the literature (Üstündağ et al., 2008; Tözün, 2010; Akpınar, 2011), consists of two parts. The form includes 5 questions about the sociodemographic characteristics of the patients (gender, age, education level, marital status, employment status) and 8 questions about clinical characteristics (clinic treated, duration of hospitalization, duration of NGT use, effects of NGT on psychological status, social interaction and movement, and an open-ended question) and consists of a total of 13 questions.

Coopersmith Self-Esteem Scale: Coopersmith Self-Esteem Scale was used to determine the self-esteem levels of the patients. The scale was developed by Stanley Coopersmith; The validity and reliability study in Turkey was conducted by Turan and Tufan (1987). The scale consists of 25 items and is answered as "like me" / "not like me". The adult form of the scale, which has adult and child forms, was used in this study. The total score obtained from the scale ranged from 0–100, with scores below the average indicating low self-esteem and scores above indicating high self-esteem. The Cronbach's Alpha coefficient of the scale is 0.65, while in this study, the Cronbach's Alpha coefficient of the scale is 0.687.

Implementation of Research

Written informed consent was obtained from patients who agreed to participate in the study. Participants were informed that participation in the study was voluntary, that they could leave the study at any time, that the data would be kept confidential and that it would not affect their treatment processes. The data were collected by the researcher using a questionnaire form with face-to-face interview method. The questionnaires took about 25 minutes to complete.

Ethical Dimension of Research

Prior to the study, ethical approval (Decision No: 2024-11/40 and Date: 21.11.2024) was obtained from the Non-Interventional Clinical Research Ethics Committee of Sivas Cumhuriyet University, and permission was obtained from the relevant hospital (Document Date and Number: 22.01.2025- 519443). Informed consent was obtained from the participants, personal information was kept confidential and the data was used for scientific purposes only.

Evaluation of Data

The data obtained from the research were analyzed using the SPSS 22.0 package program. The conformity of the data to the normal distribution was evaluated with the Kolmogorov-Smirnov and Shapiro-Wilk tests. According to the test results, it was determined that the total scores of the Coopersmith Self-Esteem Scale were not normally distributed ($p < 0.05$). Therefore, nonparametric tests were used in comparisons between groups; Mann-Whitney you and Kruskal-Wallis H tests were used.

RESULTS

It has been found that invasive procedures have an impact on body image and self-esteem (Üstündağ et al., 2007; Vatanserver, 2014; Zümreler, 2020; Toktaş, 2024; Pehlivan, 2024); however, there are limited studies that directly examine the effect of NGS on self-esteem. In this respect, the results of the study are presented in the following. Considering the socio-demographic characteristics of a total of 304 NGT patients within the scope of the study, the patients were 41.78 ± 14.98 years old. 60.2% of the participants were female and 76.0% were married. In the distribution of education level, university graduates are in the first place with 47.0%. Approximately half of the participants are employed (Table 1).

Table 1. Socio-demographic characteristics of patients with nasogastric tube (n=304)

		n	%
Age (41.78 ± 14.98 , Min: 19, Max: 69)	19 – 31 years old	99	32.6
	32 – 44 years old	91	29.90
	45 – 56 years old	40	13.20
	57 – 69 years old	74	24.30
Gender	Female	183	60.20
	Male	121	39.80
Marital Status	Single	73	24.00
	Married	231	76.00
Education Level	Illiterate	5	1.60
	Literate	27	8.90
	Primary Education	36	11.80
	High School	93	30.60
	University	143	47.00
Working Status	Yes	151	49.70
	No	153	50.30

Table 2. Clinical characteristics of patients with nasogastric tube

		n	%
The Clinic of The Patient	Urology Service	45	14.80
	Obstetrics Service	91	29.90
	General Surgery Service	114	37.50
	Neurology Service	36	11.80
	General Internal Medicine Service	15	4.90
	Nephrology Service	3	1.1
Patient's Length of Stay	1- 5 Days	101	33.20
	6- 10 Days	131	43.10
	11- 15 Days	69	22.70
	16 Days and Over	3	1.00
Duration of NGT *	1- 3 Days	167	54.90
	4- 7 Days	125	41.10
	8- 10 Days	12	3.90
The Effect of NGT on the Patient's Psychological State	It doesn't affect	78	25.70
	I feel dependent	81	26.60
	I feel sick	44	14.50
	I feel unhappy	47	15.50
	I don't feel clean	54	17.80
The Impact of NGT on Patient Communication	It doesn't affect	102	33.60
	I don't want to express myself	66	21.70
	It makes me feel ashamed	110	36.20
	It makes me withdraw from people	26	8.60
The Effect of NGT on the Patient's In-Bed Movements	It doesn't restrict my movement	24	7.90
	It partially restricts my movement	253	83.20
	It completely restricts my movement	27	8.90
The Impact of NGT on Patient Mobilization	It doesn't restrict my movement	75	24.70
	It partially restricts my movement	223	73.40
	It completely restricts my movement	6	2.00

* NGT =Nasogastric tube

The clinical characteristics of the participants are presented in Table 2. When the distribution of patients with NGT by clinics is examined, it is seen that the highest rate of patients is 37.5% in the general surgery service and 29.9% in the obstetrics service. It is seen that most of the participants stay in the hospital for 6-10 days at a rate of 43.1%, the duration of NGT application is 1-3 days in more than half of the patients and the rate reaches 54.9%. When the psychological effects of NGT were examined, 26.6% of the patients stated that they felt dependent, 17.8% did not feel clean, 15.5% felt unhappy and 14.5%

felt sick. When the effects of NGT on social interaction were evaluated, one-third of the participants stated that they were not affected by this situation. In terms of the effect of NGT on the patient's in-bed movements, it is seen that 83.2% of the participants have partially restricted their movements. Similarly, in the case of mobilization, 73.4% of the patients stated that their movements were partially restricted. In the study, the mean score of the patients on the Coopersmith Self-Esteem Scale was 43.01±0.76 (Table 3).

Table 3. Distribution of Coopersmith Self-Esteem Scale scores of patients with nasogastric tube

	Min*	Max*	Median	X±SD
Coopersmith Self-Esteem Scale Score	20.00	68.00	44.00	43.01±0.76

*Minimum and maximum scores observed (Scale theoretical range: 0–100)

Since the socio-demographic characteristics and self-esteem scores of patients with NGT were compared (Table 4). It was determined that gender did not cause a significant difference in self-esteem levels. A significant difference was found between age groups in terms of self-esteem scores ($p < 0.001$). Self-esteem scores of married individuals were found to be significantly higher than single individuals ($p < 0.001$). It shows that the self-esteem

scores of university graduates are significantly lower than high school, primary education and literacy groups ($p < 0.001$). The self-esteem scores of individuals who were not employed were significantly higher than those who were employed ($p < 0.001$). Clinical variables and self-esteem scores of patients with NGT were compared (Table 5). A significant difference was found in terms of self-esteem scores with the clinic where they were

hospitalized ($p < 0.001$). Looking at the mean scores, it is seen that the self-esteem scores of the patients hospitalized in the general internal medicine service of 53.33 ± 4.45 and 54.66 ± 2.30 in the nephrology service are at the highest level. In terms of the duration of hospital stay, a statistically significant difference was found between the groups ($p < 0.001$). NGT shows that there is a significant difference between length of stay and self-esteem scores ($p < 0.001$). It shows that the self-esteem scores of the patients who stated that the psychological effect of the nasogastric catheter as "not affecting" (55.69 ± 6.82) were significantly higher than all other groups ($p < 0.001$). The mean self-esteem score of the

patients who stated that NGT did not affect their social interaction was the highest with 56.19 ± 6.79 , which was significantly higher than all other groups ($p < 0.001$). It shows that the self-esteem scores of patients who stated that NGT was completely restricted in their movements were significantly significant and lower than those who were both partially restricted and not restricted ($p < 0.01$). It shows that the self-esteem scores of patients whose mobilization was completely restricted due to NGT were significantly lower than those whose movements were not restricted ($p = 0.006$).

Table 4. Comparison of socio-demographic characteristics and Coopersmith Self-Esteem Scale score averages

	n (304)	X±SD	Testing	p
Gender				
Female	183	42.22±13.15	10093.5*	0.1897
Male	121	44.19±13.48		
Age Group				
19 – 31 Years	99	34.86±9.05	134.28**	0.000
32 – 44 Years	91	37.27±11.04		
45 – 56 Years	40	53.50±10.93		
57 – 69 Years	74	55.29±8.09		
Marital Status				
Single	73	36.05±10.80	5051.5*	0.000
Married	231	45.21±13.27		
Education Level				
Illiterate	5	49.60±14.31	94.23**	0.001
Literate	27	56.14±8.56		
Primary Education	36	53.88±9.10		
High School	93	46.06±13.37		
University	143	35.58±9.78		
Working Status				
Yes	151	37.24±11.81	5856*	0.000
No	153	48.70±12.20		

* Mann-Whitney U, ** Kruskal-Wallis

DISCUSSION

In this study, the effect of NGT on patients' self-esteem was examined; it was determined that patients' self-esteem was low, self-esteem was affected by some socio-demographic indicators, and it was significantly related to factors related to the disease/clinical process. The findings obtained in the study were discussed in line with the literature. However, when the literature is examined, there is no research that quantitatively examines the direct effect of NGT application on self-esteem and has a comparable scope and method to this study. Therefore, the discussion has been expanded by conceptually linking the mechanisms affecting self-esteem through near-field evidence (e.g., stoma/colostomy, invasive surgical interventions, change in body image, and psychosocial adjustment). The studies in question; It indicates that factors such as deterioration in body integrity, the presence of visible medical devices and limitation in daily

functionality can lower self-esteem. The findings of the study show a consistent relationship between the psychological impact caused by NGT, withdrawal/embarrassment in social interaction and limitation of movement, and the decrease in self-esteem scores, and are consistent with the findings in the literature and make a unique contribution to the literature specific to NGT. Although NGT is a life-sustaining procedure, it is an invasive procedure that affects the individual's perception of bodily integrity, sense of autonomy and social roles. And studies involving tube feeding and/or NGT feeding highlight that tube feeding or NGT causes physical discomfort, difficulties, and limitations for patients (Padilla & Grant, 1985; Green & Vandall-Walker, 2017). In the literature, it is reported that treatment processes that disrupt body integrity and include visible medical practices are associated with decreased self-esteem, social withdrawal, and psychological adjustment difficulties (Üstündağ et al., 2007; Vatansever, 2014; Zümreler, 2020). The low self-

esteem found in the study may be related to the difficulties experienced by patients using NGT in body image, independence and social interaction. Similarly, studies in cancer and chronic diseases have shown that deterioration in body image negatively affects self-esteem (Toktaş, 2024; Pehlivan, 2024). In this context, the fact that NGT is a visible and functional medical tool may lead to damage in self-perception by reinforcing the individual's "patient identity". The fact that gender is not decisive on self-esteem suggests that self-esteem is more related to the individual's experience of illness, social support and coping mechanisms than biological sex. Although different results have been reported in the literature on this subject, there are also studies indicating that gender alone is not decisive (Dayanç, 2017; Vatanserver, 2014; Carlsson, 2020). In the study, it is noteworthy that self-esteem scores are significantly higher in groups aged 45 and over. The increase in self-esteem with increasing age can be explained by the development of life experience and adaptation skills in older age groups (Saygılı et al., 2015). According to the research findings, the self-esteem scores of married individuals are significantly higher than single individuals. While this result is in line with the study of Saygılı et al. (2015); in the studies conducted by Dayanç (2017) and Vatanserver (2014), no statistically significant difference was found between self-esteem scores according to marital status. Higher self-esteem in married individuals supports the protective effect of social support and sense of belonging. Marriage can strengthen self-perception by providing emotional and social support, especially during illness (Saygılı et al., 2015). In the study, a significant decrease in self-esteem scores was found as the level of education increased. Unlike the results of the study, it has been determined in many studies in the literature that self-esteem increases as the level of education increases (Saygılı et al. 2015; Dayanç 2017; Gönülal 2024). In some studies, it has been reported that education level does not have a significant effect on self-esteem (Vatanserver 2014; Taşpınar 2015). However, the general tendency is that

increasing the level of education has a positive effect on self-esteem. This may be because the level of education strengthens psychosocial adjustment by increasing the individual's self-confidence, social status, problem-solving capacity and life satisfaction. Self-esteem was found to be lower in working individuals. On the other hand, some studies have reported that working women have higher self-esteem levels (Metem, 2019; Karaca, 2019). In general, it can be said that working life plays a supporting role in the social status, economic independence and self-esteem of the individual. It can be argued that being involved in working life makes positive contributions to feeling as a productive member of society, especially for individuals whose participation in social life is restricted due to chronic diseases or medical problems. It is also thought that factors such as decreased self-esteem as education level increases, higher awareness of illness, perceived loss of role and status, and sensitivity to body image may be related.

In terms of clinical process, negative psychological and social perception of NGT was found to be associated with a significant decrease in self-esteem. The lower self-esteem, especially in patients with feelings of dependency, embarrassment, social withdrawal, and limitation of movement, suggests that self-perception is closely related to physical and social functioning. These findings align with studies on invasive applications and body image (Zümreler, 2020; Toktaş, 2024). Similarly, studies conducted on individuals with impaired bodily integrity after cancer treatment, such as Toktaş (2024) and Pehlivan (2024), have found a strong positive relationship between positive body image and self-esteem, while losses in body integrity or body image have been shown to negatively affect self-esteem. It is consistent with the literature that a constantly visible and functional medical device such as a nasogastric catheter negatively affects an individual's daily life, social relationships and psychological state, leading to a decrease in self-esteem

Table 5. Comparison of clinical variables and Coopersmith Self-Esteem Scale score averages

Clinic of the Patient	n (304)	X±SD	Test	p
Urology Service	45	48.80±12.60	45.36*	0.000
Obstetrics Service	91	41.27±14.07		
General Surgery Service	114	38.24±12.80		
Neurology Service	36	50.00±7.19		
General Internal Medicine Service	15	53.33±4.45		
Nephrology Service	3	54.66±2.31		
Length of Hospitalization				
1–5 days	101	44.23±14.43	16.15*	0.001
6–10 days	131	39.66±12.18		
11–15 days	69	47.36±12.39		
16 days and above	3	48.00±0.00		
Duration of NGT				
1–3 days	167	40.45±13.55	15.07*	0.001
4–7 days	125	45.79±12.69		
8–10 days	12	49.66±6.71		
Psychological State				
It doesn't affect	78	55.69±6.82	102.38*	0.000
I feel dependent	81	40.00±13.38		
I feel sick	44	40.72±13.31		
I feel unhappy	47	40.76±10.50		
I don't feel clean	54	33.03±8.52		
Social Interaction Status				
It doesn't affect	102	56.19±6.79	149.04*	0.000
I don't want to express myself	66	34.54±10.18		
It makes me feel ashamed	110	36.50±10.77		
It makes me withdraw from people	26	40.30±9.46		
In-Bed Movement Status				
It doesn't restrict my movement	24	47.66±11.05	14.19*	0.001
It partially restricts my movement	253	43.36±13.29		
It completely restricts my movement	27	35.55±12.66		
Mobilization Status				
It doesn't restrict my movement	75	47.84±13.73	15.45*	0.000
It partially restricts my movement	223	41.73±12.81		
It completely restricts my movement	6	30.00±2.19		

* Kruskal-Wallis

CONCLUSION and RECOMMENDATIONS

It was determined that the patients who underwent NGT had low self-esteem. Patients treated in general surgery clinics who were hospitalized for 6–10 days, used a NGT for 1–3 days, reported feeling “unclean” due to the NGT, and stated that their mobility was completely restricted had significantly lower self-esteem compared to others. In line with this study, care in patients undergoing NGT should not be limited to physiological needs; A holistic approach should be adopted, including psychological and social needs. Nurses should identify risk factors that may negatively affect patients' self-esteem at an early stage and plan individualized psychosocial support initiatives. It is recommended to provide patients and their families with clear information about the NGT

process, strengthen social support mechanisms and refer them to psychological counseling when necessary.

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Concept: E.T., F.T.Y.; Design: F.T.Y., E.T.; Supervision: F.T.Y., E.T.; Materials: F.T.Y., E.T.; Data Collection and/or Processing: E.T.; Analysis and/or Interpretation: F.T.Y., E.T.; Literature Search: E.T.; Writing Manuscript: E.T., F.T.Y.; Critical Review: F.T.Y., E.T.

Conflict of Interest Statement

The authors declare that there is no financial, institutional, or personal conflicts of interest in the preparation and publication of this work.

Ethics Committee Approval

Ethical approval (Decision No: 2024-11/40 and Date: 21.11.2024) was obtained from the Non-Interventional Clinical Research Ethics Committee of Sivas Cumhuriyet University.

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