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Health Literacy Level of Patients Applying to Chest Diseases Outpatient Clinic and Related Factors: The Case of a Selected Training and Research Hospital

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ABSTRACT

Health literacy is an important skill and capacity that affects individuals' ability to make decisions about their health and manage their health. It is associated with low health literacy, unnecessary outpatient clinic visits, high health expenditures, late diagnosis, and risky health behaviors. This research was conducted with 373 patients who applied to the Chest Diseases outpatient clinic of a

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training and research hospital in Istanbul. 20.4% (n=76) of the participants had low health literacy and 49.9% (n=186) had middle health literacy. According to the gender of the patients, while there was no significant difference in access to treatment health services, total score and self-efficacy subscale dimensions, the median of the health promotion subscale dimension was higher in women than in men and was found to be statistically significant. Statistically significant differences were found in access to treatment health services, health protection development, total score and self-efficacy subscale dimensions according to the patients' educational status. Statistically, significant differences were found in access to therapeutic health services, health promotion, total score and self-efficacy subscale dimensions according to the patients' occupation. Health literacy level was found to be low in one out of every four patients. Gender, educational status and occupation were found to be effective on health literacy level.
Keywords: Chest Diseases, Health Literacy Level, Hospital

INTRODUCTION

According to the World Health Organization, health literacy involves achieving a level of personal knowledge, skills, and confidence that enables individuals to improve their own health and the health of their community by changing personal lifestyles and living conditions (Fernandez et al., 2016). Health literacy is an important public health goal and the health literacy level of individuals is of great importance in increasing the health level of the country and society. On average, 12% of adults worldwide have inadequate basic health literacy and 35% have problematic health literacy (World Health Organization, 2013). A high level of basic literacy and cognitive development positively affects health literacy. Individuals who do not have the ability to read and write access health information at a lower rate and cannot use the information they access to make appropriate health decisions. In this direction, trying to improve the literacy status of individuals also paves the way for the development of health literacy (Nutbeam, 2000). A high level of health literacy in choosing a health institution ensures making the right decision. With increasing health literacy, individuals will not prefer a tertiary health institution for a health problem that can be solved in primary health care institutions. In this framework, unnecessary crowding will not occur in organizations providing tertiary health care services. In addition, the

ability to recognize health professionals, understand their explanations, inform them fully within the framework of health problems, and participate in the diagnosis and treatment process depends on patients' high health literacy levels. Individuals with high levels of health literacy utilize health services effectively and acquire sufficient health information. Thanks to these individuals, the costs of health services decrease, and the quality of life and the quality of health services increase (Altun, 2021). Since people with low health literacy levels do not have enough health information, their risk of health problems and hospitalization times increase, they have difficulty in understanding health professionals, and they cause an increase in healthcare costs (Çatı et al., 2018).

In a study conducted with 220 patients in the chest diseases outpatient and inpatient wards of Erbaa State Hospital in Tokat province, it was determined that the total mean score of health literacy of the patients was 50 out of 125 and the patients had limited health literacy level. In addition, it was found that the mean scores of the sub-dimensions of access, understanding, evaluation, and implementation of health literacy were also low (Şanlıtürk, 2022).

In this study, the health literacy levels of patients who applied to the Chest Outpatient Clinic of Education and Research Hospital were examined.

METHODOLOGY

It is a cross-sectional study. The study was conducted on patients who applied to the Chest Outpatient Clinic of Sultan Abdulhamid Khan Training and Research Hospital on April 14-15, 2022 and September 20-21, 2022. The data of the study on April 14-15, 2022 were presented as an oral presentation by the same researchers on May 28-29, 2022 (Kaya et al., 2022).

Research Population and Sample

The population of the study consisted of 470 patients who applied to Sultan Abdulhamid Khan Training and Research Chest Diseases Outpatient Clinic. Since 15 of the patients were illiterate, and 82 of them refused to participate in the study, the study was completed with 373 patients. The participation rate was 79.3%. Inclusion criteria were determined as being literate and completing all questionnaires. Written informed consent was obtained from the patients before starting the study.

Data Collection Tools

Data were collected by self-completion under observation. The first part of the questionnaire consists of two parts; 6 items aiming to obtain information on gender, age, education level, income status, occupation and health information sources, and the second part, HU-HLS-Long Form, consisting of 71 items (38 questions) and 16-item Self-Efficacy section was used.

Hacettepe University Health Literacy Scale (HU-HLS) Long Form: The scale has three levels of scores, 0-32: low, 33-52: medium and 53-71: high; there are two sub-dimensions as Health Protection-Promotion (HPP) and Access to Treatment-Health Services (THSS). In the HU-SOY Scale Long Form, each item is converted into a 0-1 score. In questions where the answer is asked to be indicated in a chart as "True", "False" or "Don't know", each item marked correctly is coded as 1 and the other answers are coded as 0. Cronbach's alpha for the two sub-dimensions ("disease prevention and health promotion" and "access to treatment and health services") are 0.79 and 0.91 respectively (Özvarış et al., 2018).

Ethical Aspects of the Research

Before starting the study, written permission (Date: 11.03.2022 and Board No: 9/14) was obtained from Istanbul Health Sciences University Hamidiye Scientific Research Ethics Committee. The principles of the Declaration of Helsinki were followed throughout the study.

Data Collection

The study was conducted with patients admitted to the Chest outpatient clinic in 2022. A questionnaire consisting of a sociodemographic data form and HU-HLS-Long Form questions was administered face-to-face. Patients filled out the interview form on their own under observation.

Statistical Analysis

The analysis of the research data was conducted using the IBM SPSS Statistics for Windows version 22.0 (IBM, Armonk, NY, USA) software. The normality of the data was assessed with the Kolmogorov-Smirnov test, revealing that the data

did not follow a normal distribution. Continuous variables were represented as mean ± standard deviation, while categorical variables were expressed as numbers and percentages. The Mann-Whitney U test was employed for pairwise comparisons, and the Kruskal-Wallis H test was utilized for comparisons involving more than two groups. For these larger comparisons, the Mann-Whitney U test was used in pairwise comparisons to identify specific group differences based on the test results. All statistical significance was determined at the $p<0.05$ level.

RESULTS

According to educational status, 27.3% were high school graduates and 15.3% were primary school graduates. The patients were 50.7% of male. The rate of those whose income was less than their expenses was 33%. The mean age was 43.29 years (18-82). The patients were 19% of housewives and 14.5% were workers (Table 1).

Table 1: Demographic characteristics of participants

Variables		n (%)
Gender	Female	184 (49.3)
	Male	189 (50.7)
Education Status	Literate	25 (6.7)
	Primary School	57 (15.3)
	Secondary School	49 (13.1)
	High School	102 (27.3)
	Associate degree	44 (11.8)
	Bachelor's	86 (23.1)
	Postgraduate	10 (2.7)
Income Status	Income less than expenditure	123 (33)
	Income equal to expenditure	162 (43.4)
	Income more than expenditure	88 (23.6)
Occupation	Housewife	71 (19)
	Worker	54 (14.5)
	Retired	52 (13.9)
	Officer	46 (12.3)
	Health Worker	33 (8.8)
	Tradesmen	24 (6.4)
	Unemployed	15 (4)
	Other	78 (20.9)
Age (mean ± standard deviation) (minimum-maximum)	(43.29 ± 14.67) (18-82)	

According to the HU-HLS-Long Form, 20.4% were found to have low health literacy levels (Table 2).

Table 2: Participants' level of health literacy

		n (%)
Health Literacy Level	Low	76 (20.4)
	Middle	186 (49.9)
	High	111 (29,8)

According to the gender of the patients, while there was no significant difference in access to treatment health services, total score and self-efficacy subscale dimensions, the median of the health promotion subscale dimension was higher in women than in men and was found to be statistically significant (Table 3).

Table 3: Comparison of Health Literacy Scale Scores According to Participants' Gender

	Gender	n	Median (Min-Max)	U	p	Difference
Access to Treatment Health Services	Female	188	35 (8-48)	15779.5	0.122	
	Male	191	31 (7-47)			
Health Protection Promotion	Female	188	14 (3-22)	15004	**0.022***	Male<Female
	Male	191	12 (1-21)			
Total Score	Female	188	47 (11-70)	15467.5	0.065	
	Male	191	43 (11-66)			
Self-efficacy	Female	188	38 (2-48)	17152.5	0.821	
	Male	191	38 (0-48)			

(Min: Minimum, Max: Maximum, *p<0.05)

Statistically significant differences were found in access to treatment health services, health protection development, total score and self-efficacy subscale dimensions according to the educational status of the patients (Table 4).

Table 4: Comparison of health literacy scale scores according to participants' educational background

	Education Status	n	Median (Min-Max)	H	p	Difference
Access to Treatment Health Services	Literate	25	26 (11-41)	65.080	**<0.001*** **	Literate<High School High School<Bachelor's Literate<Bachelor's Literate<Postgraduate Primary School<Bachelor's Primary School<Postgraduate Secondary School<Bachelor's Associate degree<Bachelor's
	Primary School	57	27 (8-42)			
	Secondary School	50	29 (10-43)			
	High School	106	34 (7-45)			
	Associate degree	44	33 (12-45)			
	Bachelor's	87	39 (8-48)			
	Postgraduate	10	42 (21-47)			
Health Protection Promotion	Literate	25	9 (1-16)	70.960	**<0.001*** **	Literate<Bachelor's Literate <Postgraduate Literate<Associate degree Secondary School<Bachelor's Secondary School<Postgraduate Primary School<Bachelor's Primary School<Postgraduate High School<Bachelor's High School<Postgraduate
	Primary School	57	12 (5-20)			
	Secondary School	50	11 (4-16)			
	High School	106	13 (2-22)			
	Associate degree	44	13.5 (4-20)			
	Bachelor's	87	16 (3-22)			
	Postgraduate	10	17.5 (8-21)			
Total Score	Literate	25	35 (13-57)	74.938	**<0.001*** **	Literate<High School Literate<High School Literate<Bachelor's Literate<Postgraduate Primary School<Bachelor's Primary School<Postgraduate Secondary School<Bachelor's Secondary School<Postgraduate Associate degree<Bachelor's High School<lisans
	Primary School	57	40 (15-62)			
	Secondary School	50	41 (18-58)			
	High School	106	45.5 (11-65)			
	Associate degree	44	46 (16-63)			
	Bachelor's	87	55 (11-70)			
	Postgraduate	10	59 (36-66)			
Self-efficacy	Literate	25	32 (25-48)	30.54	**<0.001*** **	Literate<Bachelor's Primary School<Bachelor's Secondary School<Bachelor's
	Primary School	57	35 (18-48)			
	Secondary School	50	37 (2-48)			
	High School	106	38 (22-48)			
	Associate degree	44	39.5 (28-48)			
	Bachelor's	87	41.5 (0-48)			
	Postgraduate	10	41 (21-47)			

(Min: Minimum, Max: Maximum, ***p<0.001)

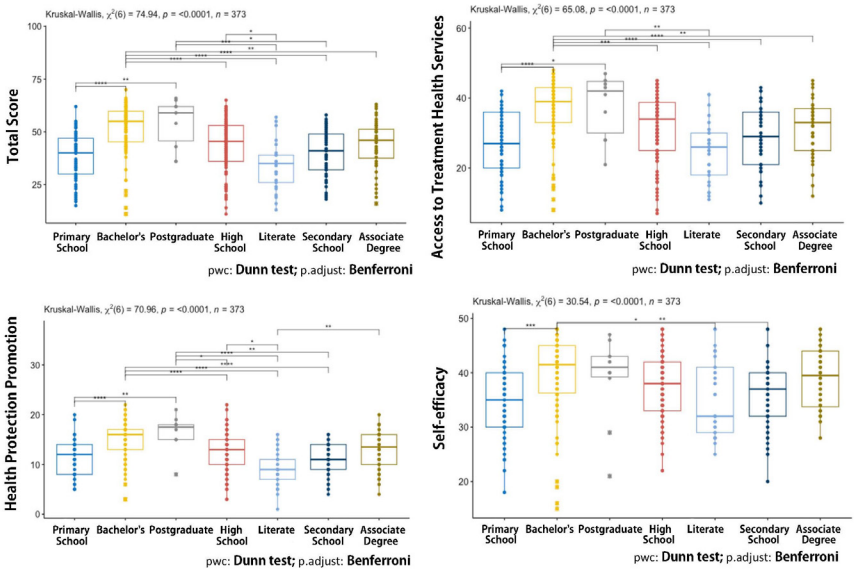

Figure 1. Within-group comparisons of participants' education levels and scale scores

No significant difference was found in access to treatment health services, health protection development, total score and self-efficacy subscale dimensions according to the income status of the patients (Table 5).

Table 5: Comparison of health literacy scale scores according to income status of participants

	Income Status	n	Median (Min-Max)	H	p	Difference
Access to Treatment Health Services	Income less than expenditure	126	32 (8-48)	0.792	0.673	
	Income equal to expenditure	165	33 (8-47)			
	Income more than expenditure	88	34 (7-47)			
Health Protection Promotion	Income less than expenditure	126	13 (1-22)	0.518	0.772	
	Income equal to expenditure	165	13.5 (3-21)			
	Income more than expenditure	88	13 (3-21)			
Total Score	Income less than expenditure	126	45 (11-70)	0.519	0.771	
	Income equal to expenditure	165	46 (11-65)			
	Income more than expenditure	88	46 (11-66)			
Self-efficacy	Income less than expenditure	126	38 (2-48)	0.394	0.821	
	Income equal to expenditure	165	38 (0-48)			
	Income more than expenditure	88	39 (15-48)			

(Min: Minimum, Max: Maximum)

Statistically significant differences were found in access to therapeutic health services, health promotion, total score and self-efficacy subscale dimensions according to the occupation of the patients (Table 6).

Table 6: Comparison of health literacy scale scores of participants according to their occupations

	Occupation	n	Median (Min-Max)	H	p	Difference
Access to Treatment Health Services	Housewife	71	33 (11-45)	37.814	<0.001***	Unemployed<Health Worker Worker<Health Worker Housewife<Health Worker Retired<Health Worker Tradesmen<Health Worker Other<Health Worker
	Worker	54	30.5 (12-44)			
	Retired	52	33 (9-46)			
	Officer	46	36 (7-47)			
	Health Worker	34	43 (11-48)			
	Tradesmen	24	32 (14-44)			
	Unemployed	15	30 (13-43)			
	Other	83	29.5 (8-45)			
Health Protection Promotion	Housewife	71	11 (5-22)	37.160	<0.001***	Unemployed<Health Worker Worker<Health Worker Housewife<Health Worker Retired<Health Worker Tradesmen<Health Worker Other<Health Worker
	Worker	54	12 (3-19)			
	Retired	52	11 (1-18)			
	Officer	46	14.5 (3-20)			
	Health Worker	34	17 (3-22)			
	Tradesmen	24	12.5 (5-18)			
	Unemployed	15	12 (5-17)			
	Other	83	13 (3-20)			
Total Score	Housewife	71	42 (16-63)	39.950	<0.001***	Unemployed<Health Worker Worker<Health Worker Housewife<Health Worker Retired<Health Worker Tradesmen<Health Worker Other<Health Worker
	Worker	54	43 (18-61)			
	Retired	52	44.5 (13-63)			
	Officer	46	50 (11-66)			
	Health Worker	34	59 (14-70)			
	Tradesmen	24	44.5 (23-62)			
	Unemployed	15	41 (18-60)			
	Other	83	42.5 (11-64)			
Self-efficacy	Housewife	71	36 (22-48)	18.150	0.012*	Housewife<Health Worker
	Worker	54	38 (24-48)			
	Retired	52	38.5 (16-48)			
	Officer	46	39 (30-48)			
	Health Worker	34	44 (0-48)			
	Tradesmen	24	37 (26-48)			
	Unemployed	15	40 (18-45)			
	Other	83	38.5 (2-48)			

(Min: Minimum, Max: Maximum, *p<0.05, ***p<0.001)

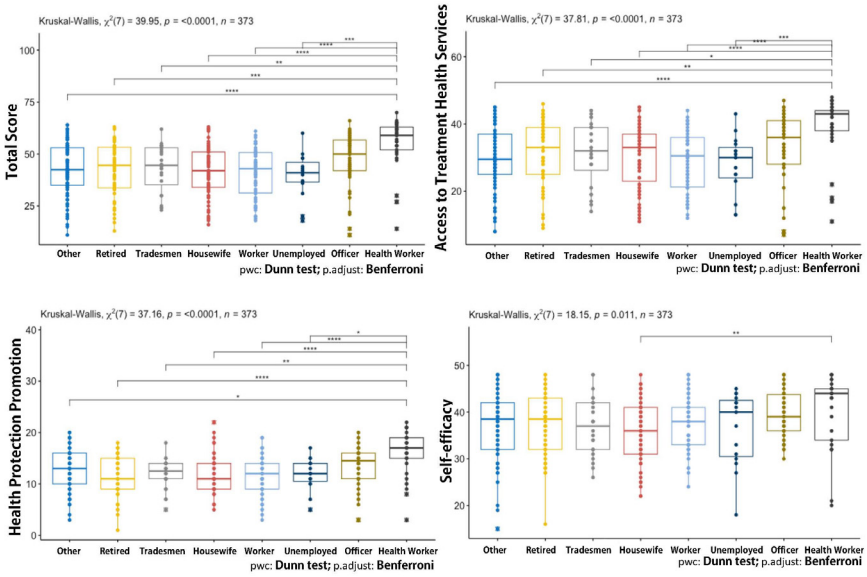

Figure 2. Within-group comparisons of participants' occupations and scale scores

DISCUSSIONS AND CONCLUSIONS

In our study, one out of every five patients had low (20.4%) and one out of every two patients had moderate health literacy. In a study conducted with 388 patients who applied to Pamukkale University Faculty of Medicine Internal Medicine Outpatient Clinic, the health literacy level was found to be insufficient (25.8%) in one out of every four patients (Çelikyürek et al., 2020). In a study conducted with 8,000 people in Austria, Bulgaria, Germany, Greece, Ireland, the Netherlands, Poland and Spain, at least one in ten participants (12%) had inadequate health literacy and one in two (47%) had limited (inadequate or problematic) health literacy (Sørensen et al., 2015). In a study conducted with 505 people in Türkiye, 22.2% had inadequate health literacy levels (Okyay & Abacıgil, 2016). Building personal health literacy skills and abilities is a lifelong process. No one is completely health literate. Even highly educated individuals may find existing health systems too complex, especially in the face of health conditions that reduce their quality of life. Capacity and competence in health literacy vary according to circumstances, culture and environment. Individuals with low health literacy often miss appointments, fail to complete registration forms, fail to administer medications, identify medications by ap-

pearance rather than reading labels, fail to give sequential medical histories and fail to follow tests or referrals (Center for Health Care Strategies, 2024). Low health literacy represents an important challenge for health policies and practices across Türkiye but to different degrees for different countries. Social change in health literacy should be taken into account when developing public health strategies to improve health equity in Türkiye.

In our study, the health protection and promotion subscale were found to be higher and statistically significant in women. In a study conducted with 259 patients admitted to the general internal medicine outpatient clinic of a training and research hospital in Istanbul, women's health literacy level was found to be higher and statistically significant (İkışık et al., 2020). In a study conducted with 759 people in the United Kingdom, the risk of having limitations in health literacy was found to be 2.04 times higher in the male gender (von Wagner et al., 2007).

In a study conducted abroad with 5,601 patients presenting to an emergency department in an urban area, inadequate health literacy was found to be 1.84 times higher in the male gender (Olives et al., 2011). Health literacy in women is seen as an important factor for health promotion and disease prevention. Health literacy affects women more than men because women use the health system more than men. As the rate of women understanding and using the necessary information about their health increases, their behaviors to prevent diseases and to provide early diagnosis of diseases also increase. Increasing the health literacy level of women will affect the health level of the whole society. Therefore, it is important that health-related documents are prepared in a language that women can understand. This will not only increase women's level of health literacy but will also help women to take responsibility and make decisions for their health (and, where necessary, the health of their children).

In our study, as the educational status of the patients increased, their health literacy levels also increased and were found to be statistically significant. In a study conducted with a total of 688 patients who applied to the internal medicine outpatient clinics of a foundation university and a state hospital, it was found to be similar to our study (Uğurlu & Akgün, 2019). In a study conducted with 225 patients who applied to the family medicine outpatient clinic of Fırat University Faculty of Medicine hospital, inadequate health literacy was

detected at high school and below education level and found to be statistically significant (Yakar et al., 2019). In a study conducted abroad with 300 patients admitted to the emergency department, limited health literacy was found to be 2.7 times higher for some high school or less compared to high school graduates (Ginde et al., 2008). Education level affects an individual's critical thinking and problem-solving skills. In addition to this, it is thought that educated individuals being responsible, communicating effectively and being more productive affect the health literacy of individuals. In a study conducted abroad with 402 patients with Type 2 diabetes, it was found that educational status was an important factor affecting health literacy (Schillinger et al., 2002). In a study conducted with 1,090 people in Istanbul during the COVID-19 pandemic period, it was determined that the frequency of having insufficient and problematic-limited health literacy decreased as the educational status of the people increased (Uçar et al., 2023).

In our study, although the health literacy score was higher in those whose income was higher than their expenses, no statistically significant relationship was found between the other income statuses. In a study conducted with 408 patients applying to the Family Health Center in Kayseri, although the rate of problematic or inadequate literacy was higher in those whose income was less than expenses, the difference was not statistically significant (Sukut, 2020). In another study conducted with 250 people in Ankara, the relationship between monthly income status and health literacy was not found to be statistically significant (Ersen, 2019). In a study conducted with 348 academic staff at Bitlis Eren University, although health literacy was higher in those whose income was higher than their expenses, no statistically significant relationship was found between them when compared with other income statuses (Kendilci, 2022). As a result, it can be thought that as the income level increases, the opportunities related to one's health increase and contribute to the increase in health literacy.

In our study, the level of health literacy in healthcare workers was found to be statistically significant and high as expected. In a study conducted in a training and research hospital in Konya province, the health literacy levels of doctors and nurses were found to be higher and statistically significant compared to permanent workers (Bükecik & Adana, 2021). In a study con-

ducted with Ankara Provincial Health Directorate employees (655 people), a statistically significant difference was found in understanding health-related information (p=0.043) and evaluating health-related information (p=0.006) from health literacy processes according to the field of graduation (health and other fields) (Al, 2021). In a study conducted with 1,199 health personnel who participated in primary health care services basic sessions of training organized by the Public Health Institution of Türkiye in order to increase the level of knowledge about the services provided, it was found that physicians had higher health literacy than auxiliary health personnel and it was statistically significant (Deniz et al., 2018). Among the activities carried out by the General Directorate of Health Promotion in the field of health literacy within the framework of the Strategic Plan of the Ministry of Health and its legislation, increasing awareness and knowledge, developing attitudes and strengthening basic skills in health literacy among health workers was also included (Ministry of Health General Directorate of Health Promotion, 2018). In a study conducted with 250 people in Ankara, the health literacy of 61.6% of those working in any income-generating job was evaluated as "adequate - excellent", and the relationship between employment status and health literacy was found to be statistically significant (Ersen, 2019).

By increasing the level of health literacy, all health institutional practices will decrease, and unnecessary medical equipment and human resources can be prevented. In a study conducted with emergency admission data from Ankara Atatürk Training and Research Hospital, it was observed that as the health literacy of patients increased, repeated visits to the emergency department decreased (Öztaş et al., 2016). High levels of health literacy in people with chronic diseases or conditions are also important for disease management (Glasgow et al., 2001). In a study conducted with 408 patients who applied to the Family Health Center in Kayseri, the rate of problematic or insufficient literacy was higher in patients with chronic diseases, and the difference was found to be statistically significant (Sukut, 2020). For health literacy, individuals are expected to be able to access health services, analyze risks and benefits, communicate with healthcare providers, evaluate information in terms of reliability and quality, interpret test results and access health-related information. In order to achieve these, individuals need to be visually literate

(able to understand graphics or other visual information), computer literate, information literate (able to acquire and apply information), numerically literate and have language skills (National Library of Medicine, 2024). Citizens, governments, civil society organizations, the media, community leaders and academic institutions have many roles to play in improving health literacy. Citizens need to play an active role in improving their own health, successfully engage in community action for health and encourage governments to fulfill their responsibilities towards health and health equity. Governments need to take a strong leadership role in the development and implementation of health literacy promotion policies by providing sustainable financing, establishing special projects, coordinating cross-sectoral actions and conducting regular health literacy surveillance.

Limitations

The study data is limited to the hospital where we obtained the data. It cannot be generalized to the whole population. It is recommended to be conducted in health institutions and polyclinics at different levels.

Ethical Approval: Istanbul Health Sciences University Hamidiye Scientific Research Ethics Committee (Date: 11.3.2022 and Board No: 9/14).

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