Original Article

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Evaluation of Information and Practices About Breast Cancer Screening Performed in Women Presented to a University Hospital in Istanbul

İstanbul'da Bir Üniversite Hastanesine Başvuran Kadınlarda Meme Kanseri Taramalarına Yönelik Bilgi ve Uygulamaların Değerlendirilmesi

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ABSTRACT

Objective: *The aim of this study was to determine the information and practices related to breast cancer screening performed in women who presented to the mammography unit of a university hospital in Istanbul.*
Method: *A questionnaire was prepared using the literature. It was performed with a face-to-face interview method in the patients who were referred to the mammography (MG) unit of our hospital. It consisted of questions about sociodemographic characteristics, breast self-examination (BSE), clinical breast examination (CBE) and information about MG and performing these methods.*
Results: *In 260 women with a mean age of 52.5 (36-81) years; while the rate of BSE was 69.2%, the rate of CBE was 77.7% and the rate of MG was 78.5%, these were higher than the literature. The mean level of knowledge of patients about breast cancer was 6.2/10 (62%) and it was higher than the literature. Breast cancer risk factors knowledge level scores were significantly higher in patients who underwent MG procedure and BSE ($p=0.031$; $p=0.001$; $p<0.05$). Contrary to the literature, no significant effect of income and education level on the rates of BSE, CBE, undergoing MG procedure was determined. There was a statistically significant difference between the level of knowledge of the patients according to the family history of breast cancer ($p=0.004$; $p<0.01$). However, there was no statistically significant difference in the rates of MG, CBE, and BSE in those ($p>0.05$).*
Conclusion: *The knowledge and practices about breast cancer screening are good in the women who presented to our hospital. However, in women who have a positive family history, although there is a high level of knowledge, it has been determined that there is no increase in participation in screening. In addition to the entire female population, this susceptible group needs health workers' support.*

Keywords: *breast cancer, screening, breast examination, mammography*

ÖZ

Amaç: *İstanbul'da bir üniversite hastanesi mamografi ünitesine gelen kadınlarda meme kanseri taramalarına yönelik bilgi ve uygulamaların belirlenmesi amaçlanmıştır.*
Yöntem: *Araştırmacılar tarafından literatür bilgisinden yararlanılarak hazırlanan 20 soruluk anket formu, hastanemiz mamografi (MG) ünitesine yönlendirilmiş hastalarda, çekim sonrasında, yüz yüze görüşme yöntemi doldurulmuştur. Anket sosyodemografik özellikler, kendi kendine meme muayenesi (KKMM), klinik meme muayenesi (KMM) ve MG hakkında bilgiler, bu yöntemleri yapma/yaptırma durumu hakkında sorulardan oluşmaktadır.*
Bulgular: *Yaş ortalaması 52,5 (36-81) olan 260 kadında; KKMM yapma oranı % 69,2, KMM yapma oranı % 77,7, MG çektirme oranı % 78,5 olup güncel ülke verilerimize göre yüksek bulunmuştur. Hastaların meme kanseri hakkında ortalama bilgi düzeyi 6.2/10 (% 62) olup literatür ile kıyaslandığında yüksektir. MG çektirenler ve KKMM yapanların meme kanseri risk faktörleri bilgi düzeyi puanları, istatistiksel olarak yüksek saptanmıştır ($p=0.031$; $p=0.001$; $p<0.05$). Literatürün aksine, gelir ve eğitim düzeyinin KKMM, KMM, MG yaptırma oranlarında anlamlı etkisi tespit edilmemiştir. Ailede meme kanseri öyküsü varlığına göre olguların bilgi düzeyi puanları arasında istatistiksel olarak anlamlı farklılık saptanmıştır ($p=0.004$; $p<0.01$). Ancak bu olguların MG çektirme, KMM ve KKMM yapma oranları istatistiksel olarak anlamlı farklılık göstermemektedir ($p>0.05$).*
Sonuç: *Yapılan anket sonucunda, hastanemize başvuran kadınlarda, meme kanseri taramalarına yönelik bilgi ve uygulamaların iyi olduğu görülmektedir. Son yıllarda Kanser Erken Teşhis, Tarama ve Eğitim Merkezleri (KETEM) ile yaygınlaşmaya başlayan MG taramalarının bunda etkin olduğunu düşünmekteyiz. Ancak aile öyküsü pozitifliğinde, bilgi düzeyi yüksek olmasına rağmen taramalara katılımda artış olmadığı tespit edilmiş olup genel kadın nüfusa ek olarak bu hassas grupta sağlık çalışanlarının desteğine ihtiyaç mevcuttur.*

Anahtar kelimeler: *meme kanseri, tarama, meme muayene, mamografi*

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INTRODUCTION

Breast cancer is the leading cause of death among women worldwide [1]. Women in 140 of 180 countries in the world were most frequently diagnosed with breast cancer. Currently, breast cancer accounts for one quarter of all cancers in women. As it is worldwide, breast cancer is one of the most common types of cancer in women also in Turkey [2]. Breast cancer is the leading one among some cancers most commonly seen in women across all age groups with a rate of 24.6% in this group [3,4].

Early diagnosis and treatment are important to reduce breast cancer mortality [5,6]. In breast cancer, making an early diagnosis favorably affects the prognosis, reduces mortality and enables to perform breast preservation surgery in suitably selected patients [5]. Going to doctors' visits for breast examination, undergoing mammography procedure and breast self-examination (BSE), clinical breast examination (CBE) within the scope of screening program has an important place in the early diagnosis of breast cancer [7,8]. According to the guidelines for breast cancer screening defined by the Ministry of Health, the following is recommended: BSE annually and CBE every two years in women between 20-40 years of age, routine annual BSE and MG every two years in women between 40-69 years of age [9].

The most important screening method for reducing breast cancer mortality is mammography. It is known that reductions by up to 30% occur in breast cancer mortality due to making an early diagnosis in screenings performed with mammography [10]. American Cancer Society and American Cancer Institute recommend mammography as a screening method for breast cancer in women older than 40 years of age even though they have no symptoms [11,12]. It is known that BSE and CBE are useful to raise the awareness of breast cancer among women [11,13,14]. Although the cancer mortality reduction effect of BSE is controversial, it is a recommended method for creating awareness of breast among women. In the literature, it is reported that approximately 80% of the masses in the breast are discovered for the first time by women themselves [13]. Therefore, it is important for women to practice BSE regularly in order to be able to present to health institutions by recognizing their own breast tissues and detecting the possible changes earlier.

The frequency of early diagnostic methods for breast cancer shows differences depending on many factors. These factors are socio-demographic features and culture. Health beliefs of women are reported to be among the most important factors affecting breast cancer screening [15,16].

In addition to early diagnosis and screening of cancer, raising the awareness about cancer in the society regarding its reasons, risk factors and symptoms and creating behavior change is quite important [17]. In this regard, it is considered that the determination of information, judgement and behaviors related to cancer and screenings is quite important in order to understand the education requirements of women regarding breast cancers. The aim of this study planned based on the aforementioned idea was to determine the information and practices related to breast cancer screening performed among women who presented to the mammography unit of a university hospital in Istanbul.

MATERIAL and METHODS

This descriptive and cross-sectional study was approved by the Ethics Committee of Health Sciences University, Bakirkoy Dr. Sadi Konuk Training and Research Hospital. The study data were collected by using a questionnaire. The research questionnaire was filled out by the researchers using a face-to-face interview method with the participants.

The research questionnaire form was comprised of questions about sociodemographic characteristics, information about breast self-examination (BSE), clinical breast examination (CBE) and mammography and questions determining these states and conditions of practicing/having these methods. A face-to-face interview was conducted with 260 women participating in the study. Informed Consent Form and written volunteer consent were obtained by explaining the purpose of this study orally. Participation in the study was based on voluntariness.

The questionnaire form prepared using the literature knowledge by the researchers and comprising of 20

questions were applied to the patients referred to the MG unit of our hospital by MG technician after the mammography procedure.

There were 4 questions for determining some sociodemographic characteristics (age, education level, marital status, income level) of women in the first part of the data collection form. There were 8 questions for determining the risk factors for breast cancer such as age of menarche, the numbers of their pregnancies and alive births, oral contraceptive use, family history of breast cancer, menopausal status, menopausal age, use of hormone replacement therapy (HRT) of women in the first part of data collection form. There were 8 questions consisting of information and practices related to BSE and CBE in the last part of the data collection form.

NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) program was used for the statistical analysis of the data obtained from the study. During the evaluation of the study data, the Student t test was used for the intergroup comparisons of descriptive statistical methods (mean, standard deviation, median, frequency, and ratio, minimum, maximum) as well as quantitative data with normal distribution and Mann-Whitney U test was used for the intergroup comparisons of parameters without normal distribution. Pearson's Chi-Square test and Fisher's Exact test were used regarding the comparisons of qualitative data. Significance was evaluated at a level of $p<0.05$.

RESULTS

The study was performed with 260 women referred to the Radiology Department of our hospital for the mammography procedure between January 2018 and May 2018. When the participation in the screening program was evaluated, BSE, CBE, and MG were performed with rates of 69.2%, 77.7%, 78.5%; respectively. The distribution of demographic characteristics and risk factors examined was shown in Table 1.

The distribution of information regarding MG and BSE was shown in Table 2. No statistically significant difference was determined between the ages of patients according to the condition of undergoing MG procedure ($p=0.001$; $p<0.01$). The ages of patients undergoing MG procedure were higher than the ages of patients not undergoing MG procedure. No statistically significant difference was determined between the rates of patients undergoing MG procedure according to the presence of menopausal status ($p=0.001$; $p<0.01$). The rate of undergoing MG procedure was higher in patients with the menopausal status. There was no statistically significant difference between the rates of patients undergoing MG procedure according to ages of menarche, breastfeeding conditions, education levels, income levels and conditions of use of agent delaying the menopause ($p>0.05$). A statistically significant difference was determined between breast cancer risk factors knowledge level scores of patients according to the condition of undergoing MG procedure ($p=0.031$; $p<0.05$). Knowledge level scores of patients undergoing MG procedures were higher.

A statistically significant difference was determined between breast cancer risk factors knowledge level scores of patients according to the presence of a family history of breast cancer ($p=0.004$; $p<0.01$). Knowledge level scores of patients with a family history of breast cancer were higher. There was no statistically significant difference between the rates of undergoing mammography procedure, going to doctors' examinations and breast self-examination of patients according to the presence of a family history of breast cancer ($p>0.05$) (Table 3).

There was no statistically significant difference between the rates of going to doctors' examinations of patients according to ages of menarche, breastfeeding conditions, education levels, income levels, the presence of menopausal status and conditions of use of agent delaying the menopause ($p>0.05$). No statistically significant difference was determined between breast cancer risk factors knowledge level scores of patients according to conditions of going to doctors' examinations ($p>0.05$) (Table 4).

There was no statistically significant difference between the rates of practicing BSE of patients according to ages, ages of menarche, breastfeeding conditions, education levels, income levels, presence of menopausal status and conditions of use of agent delaying the menopause ($p>0.05$). A statistically significant difference was determined between breast

Table 1. Distribution of demographic characteristics.

		n (%)
Age (year)	***Min-Max (Median)***	36-86 (51)
	Mean±SD	52.50±9.56
Educational status	**Illiterate/Literate**	22 (8.5)
	Primary school	126 (48.5)
	Secondary school	24 (9.2)
	High School	56 (21.5)
	University	32 (12.3)
Occupation	**Not working**	187 (71.9)
	Working	55 (21.2)
	Retired	18 (6.9)
Income level	**Low**	64 (24.6)
	Medium	193 (74.2)
	High	3 (1.2)
Marital status	**Married**	213 (81.9)
	Single	13 (5.0)
	Divorced	15 (5.8)
	Widowed	19 (7.3)
Having a child	**Absent**	23 (8.8)
	Present	237 (91.2)
Number of children (n=237)	***Min-Max (Median)***	1-10 (2)
	Mean±SD	2.64±1.36
Number of children (n=260)	**No child**	23 (8.8)
	1 child	30 (11.5)
	2 children	103 (39.6)
	3 children	69 (26.5)
	≥ 4 children	35 (13.5)
Breastfeeding (n=237)	**Absent**	6 (2.5)
	Present	231 (97.5)
First menarche age (year)	***Min-Max (Median)***	11-18 (13)
	Mean±SD	13.46±1.32
Age of menarche	**≤ 11 years (early)**	14 (5.4)
	12-14 years (normal)	186 (71.5)
	> 14 years (late)	60 (23.1)
Menopause	**Yes**	175 (67.3)
	No	85 (32.7)
Menopause age (n=175)	**Early (≤ 40 years)**	26 (14.9)
	Normal (41-54 years)	137 (78.2)
	Late (≥ 55 years)	12 (6.9)
Use of agent delaying the menopause	**Yes**	19 (7.3)
	No	241 (92.7)
Family history of breast cancer	**Absent**	193 (74.2)
	Present	67 (25.8)

Table 2. Distribution of information related to mammography and breast self-examination.

	n (%)
Undergoing mammography procedure	
Yes	204 (78.5)
No	56 (21.5)
Knowing that mammography should be undergone periodically	
Yes	212 (81.5)
No	48 (18.5)
Going to doctor examination	
Yes	202 (77.7)
No	58 (22.3)
Knowing breast self-examination	
I have no information, I do not practice	45 (17.3)
I have information, I practice	35 (13.5)
I have information, I practice incidentally	101 (38.8)
I have information, I practice monthly	12 (4.6)
I have information, I practice after each bathing	58 (22.3)
I have information, I practice after the end of each menstrual period	9 (3.5)
Condition of practicing breast self-examination	
Yes	180 (69.2)
No	80 (30.8)
•Where did she receive information about breast self-examination	
TV	124 (47.7)
Book, Magazine, Brochure, Newspaper	12 (4.6)
Internet	12 (4.6)
Close friend - Neighbour	21 (8.1)
Allied Health Personnel	19 (7.3)
Doctor	130 (50.0)
•Where did she receive information about mammography	
TV	34 (13.1)
Book, Magazine, Brochure, Newspaper	7 (2.7)
Internet	13 (5.0)
A close friend - Neighbour	7 (2.7)
Allied Health Personnel	17 (6.5)
Doctor	223 (85.8)
Undergoing Pap smear test	
Yes	195 (75.0)
No	65 (25.0)

cancer risk factors knowledge level scores of patients according to conditions of practicing BSE (p=0.001; p<0.01). Knowledge level scores of patients practicing BSE were higher (Table 5).

Table 3. Evaluation of level of knowledge about risk factors for breast cancer according to the presence of family history of breast cancer.

		Family history of breast cancer		
		Absent (n=193)	**Present (n=67)**	**p**
Level of knowledge about risk factors for breast cancer	***Min-Max (Median)*** ***Mean±SD***	1-10 (6) 6.12±2.08	3-10 (7) 6.97±1.64	[a]0.004**
Number of correct answer for risk factors for breast cancer; n (%)	**9-10 correct answers** **7-8 correct answers** **5-6 correct answers** **≤ 4 correct answers**	26 (13.5) 68 (35.2) 54 (28.0) 45 (23.3)	10 (14.9) 30 (44.8) 22 (32.8) 5 (7.5)	
Undergoing mammography procedure	**Yes** **No**	148 (76.7) 45 (23.3)	56 (83.6) 11 (16.4)	[b]0.237
Going to doctor examination	**Yes** **No**	145 (75.1) 48 (24.9)	57 (85.1) 10 (14.9)	[b]0.092
Condition of practicing breast self-examination	**Yes** **No**	133 (68.9) 60 (31.1)	47 (70.1) 20 (29.9)	[b]0.850

[a] Mann Whitney U Test,
*[b] Pearson's Chi-square Test, **p<0.01*

Table 4. Evaluation of condition of going to doctor examination according to descriptive characteristics.

		Condition of going to doctor examination		
		Yes (n=202) n (%)	**No (n=58) n (%)**	**p**
Age (year)	***Min-Max (Median)*** ***Mean±SD***	36-86 (52) 52.93±9.67	39-79 (50.5) 51.02±9.10	[c]0.181
Age of menarche	**≤ 11 years (early)** **12-14 years (normal)** **> 14 years (late)**	12 (5.9) 149 (73.8) 41 (20.3)	2 (3.4) 37 (63.8) 19 (32.8)	b0.124
Breastfeeding (n=237)	**Absent** **Present**	5 (2.7) 180 (97.3)	1 (1.9) 51 (98.1)	[d]1.000
Educational status	**Illiterate/literate** **Primary school** **Secondary school** **High School** **University**	13 (6.4) 95 (47) 21 (10.4) 47 (23.3) 26 (12.9)	9 (15.5) 31 (53.4) 3 (5.2) 9 (15.5) 6 (10.3)	[b]0.107
Income level	**Low** **Middle/high**	51 (25.2) 151 (74.8)	13 (22.4) 45 (77.6)	
Menopause	**Yes** **No**	136 (67.3) 66 (32.7)	39 (67.2) 19 (32.8)	[b]0.990
Use of agent delaying the menopause	**Yes** **No**	13 (6.4) 189 (93.6)	6 (10.3) 52 (89.7)	[b]0.659
Level of knowledge about risk factors for breast cancer	***Min-Max (Median)*** ***Mean±SD***	2-10 (7) 6.36±2.06	1-10 (7) 6.26±1.81	[a]0.650
Number of the correct answer for risk factors for breast cancer	**9-10 correct answers** **7-8 correct answers** **5-6 correct answers** **≤ 4 correct answers**	31 (15.3) 73 (36.1) 58 (28.7) 40 (19.8)	5 (8.6) 25 (43.1) 18 (31) 10 (17.2)	

[a] Mann Whitney U Test
[b] Pearson's Chi-square Test
[c] Student t Test
*[d] Fisher's Exact Test, **p<0.01, *p<0.05*

Table 5. Evaluation of condition of practicing breast self-examination according to descriptive characteristics.

		Condition of practicing breast self-examination		
		Not practicing (n=80) n (%)	Practicing (n=180) n (%)	p
Age (year)	***Min-Max (Median)*** ***Mean±SD***	39-86 (52.5) 54.14±9.78	36-86 (51) 51.77±9.40	[c]0.066
Age of menarche	**≤ 11 years (early)** **12-14 years (normal)** **> 14 years (late)**	4 (5,0) 57 (71,3) 19 (23.8)	10 (5,6) 129 (71,7) 41 (22.8)	[b]0,972
Breastfeeding (n=237)	**Absent** **Present**	2 (2.9) 67 (97.1)	4 (2.4) 164 (97.6)	[d]1.000
Educational status	**Illiterate/literate** **Primary school** **Secondary school** **High School** **University**	12 (15) 39 (48.8) 4 (5.0) 18 (22.5) 7 (8.8)	10 (5.6) 87 (48.3) 20 (11.1) 38 (21.1) 25 (13.9)	[b]0.054
Income level	**Low** **Middle/high**	22 (27.5) 58 (72.5)	42 (23.3) 138 (76.7)	[b]0.472
Menopause	**Yes** **No**	60 (75.0) 20 (25.0)	115 (63.9) 65 (36.1)	[b]0.078
Use of agent delaying the menopause	**Yes** **No**	9 (11.3) 71 (88.8)	10 (5.6) 170 (94.4)	[b]0.103
Level of knowledge about risk factors for breast cancer	***Min-Max (Median)*** ***Mean±SD***	1-10 (6) 5.70±2.06	2-10 (7) 6.62±1.92	[a]0.001**
Number of the correct answer for risk factors for breast cancer	**9-10 correct answers** **7-8 correct answers** **5-6 correct answers** **≤ 4 correct answers**	6 (7.5) 23 (28.8) 27 (33.8) 24 (30)	30 (16.7) 75 (41.7) 49 (27.2) 26 (14.4)	

[a] *Mann Whitney U Test* [c] *Student t Test* **p<0.05*
[b] *Pearson's Chi-square Test* [d] *Fisher's Exact Test* ***p<0.01*

DISCUSSION

Awareness of breast cancer, BSE, CBE, and MG will improve survival by accelerating progression from symptom to diagnosis. If the awareness and compliance with breast cancer screenings are less, then mortality increases with late diagnosis. In our study, we aimed to learn the levels of knowledge of women about breast cancer and their approaches related to CBE, BSE, and MG procedure who were referred to the mammography unit among ones presenting to our hospital. The mean level of knowledge of patients about breast cancer was 6.2/10 (62%) and this rate was found to be higher than the literature [18,19]. Again, similarly, BSE, CBE, and MG were performed with rates of 69.2%, 77.7%, 78.5%; respectively and these levels were good. According to data of the Ministry of Health, the rates of BSE and undergoing MG procedures performed on a monthly base are 22.9% and 13.6%; respectively. Our results are markedly better than these rates. We think that these better results occur due to the study group comprising of patients routinely undergoing mammography with higher levels of awareness about breast cancer.

When we evaluated conditions of BSE, CBE and undergoing MG procedure, CBE; it was determined that only age factor and menopausal status were associated with MG procedure. The rate of undergoing MG procedure was higher in women with advanced age and menopausal status than the women without advanced age and menopausal status.

Contrary to the literature, no significant effect of income and education level on the rates of undergoing MG procedure was determined and this condition was due to the selection of the participants [19,20,21]. Seventy-four point two percent of women were at a middle income level and only 24.6% of women stated that they were at a low income level. We think that the group participating in the questionnaire does not reflect the general population with this characteristic. Only 9 of women practicing BSE performed the examination at proper time namely after the end of the menstrual period. While the rate of practicing BSE was found to be better in our study, it was determined that practicing BSE was not performed at proper time. Also, it was thought that there could be uncertainty regarding if it was performed with proper technique. It has been considered that the level of knowledge about the BSE technique should be increased. Also in the literature, it was emphasized that there was a lack of performing BSE at proper time with proper technique [19,22]. In some of the countries in which regular cancer screening is performed by the government, BSE is not recommended and presentation of patients with false positive findings to the hospital is tried to be prevented. Despite MG scans which have become widespread with Cancer Early Diagnosis, Screening and Training Centers (KETEM) in recent years, BSE maintains its importance yet for our country [23].

In the study performed by Gocgeldi et al. (2008), the authors determined that health providers (37.3%) and television/newspapers (34.3%) constituted the first two ranks of sources of information of women regarding BSE [24]. In the study performed by Aslan and Sahin, the sources of information of women related to BSE were reported to be health providers (32.0%) and television programs (21.5%) [25]. In our study, 47.7% and 50% of women stated that they learned BSE information from television programs and female doctors; respectively. This condition indicates the extensiveness of television which is the most readily accessible mass medium on this subject. Again, consistent with the literature, it was seen that BSE was learned mainly from the doctor. This condition shows the importance of reaching the large masses of women by health providers who can be in close contact with especially women.

Additionally, when the approach regarding the practice of breast screening in women with a family history of breast cancer is evaluated, there is no statistically significant difference between the rates of undergoing MG procedure, CBE and BSE. However, when knowledge level scores of patients are evaluated, knowledge level scores of patients with a family history of breast cancer were higher. In our study, it was observed that the presence of a family history of breast cancer caused an awareness on this subject but did not cause a difference in taking an action. In the recent study performed by Brum et al., it was shown that the practice of breast cancer screening was better in women with a family history of breast cancer [26]. But, in the study performed by Lerman et al. in 1993, it was reported that breast cancer worries might pose a barrier to mammography adherence among high-risk women, particularly those with a lower level of education in case of presence of a family history of breast cancer [27]. Also in our study group, we thought that a similar mechanism might pose a barrier to taking an action in screening.

The main limitation of our study is the application of the questionnaire in a single center to a group considered to have a relatively higher level of awareness than the population means who presented to the hospital for undergoing MG procedure. Study results should be evaluated considering these characteristics of the study group. Moreover, since breast cancer was a delicate subject for women, some participants might have refrained from answering the questions in the questionnaire correctly. In order to decrease this limitation, our female mammography technician selected to conduct the questionnaire applied it in a proper environment after the mammography procedure. Patients were ensured to answer the questions related to BSE, CBE, and MG procedure by themselves.

CONCLUSION

While performing our study in a single center and obtaining the results after conduction the questionnaire to a group presenting to the hospital by itself is a limitation, we understand from the data obtained that practices of BSE, CBE and MG procedures and levels of knowledge about breast cancer are high. We think that MG scans which have become widesp-

read with KETEM in recent years are effective on this subject. But it has been determined that there was no increase in participation in screening despite a higher level of knowledge in women who had a positive family history of breast cancer. Health workers' support is required in this susceptible group together with the entire female population.

Ethics Committee Approval: Approval was obtained from the Bakirkoy Dr. Sadi Konuk Training and Research Hospital Clinical Research Ethics Committee (2019/57).

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