



# The Evaluation of Reasons for Re-admission to Family Physicians and Emergency Services and the Factors Affecting Satisfaction

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## ABSTRACT

**Objective:** Patient satisfaction is an important indicator for measuring the quality of health care services. The quality of health care service is also closely associated with hospital admissions. In this study, patient satisfaction and health care system quality in emergency department (ED) and primary health care (PHC) department were evaluated and its correlation with recurrent admissions was investigated.

**Method:** This is a questionnaire study conducted with 200 patients admitted to a university hospital ED in İstanbul between 1-15 May 2016. The patients were asked 14 question including medical history with demographic data, any admission to ED or PHC department in last month, results of their admissions and satisfactions rate.

**Result:** Of the 200 patients aged between 18 and 92 years, 53% (n=106) were female and 47% (n=94) were males. Within one month, the proportion of those who were admitted to both PHC and ED was 7.5% (n=15). Satisfaction rate was (2.40) significantly lower in this group than in the others (p=0.014). Only admission to PHC was 13.5% (n=27) and to our ED was 18% (n= 6). In patients admitted to PHC or ED, gender, physician's diagnosis and way of resulting of the physician did not have a significant effect on the satisfaction (p>0.05).

**Conclusion:** The satisfaction rates of patients who were admitted to more than one department (ED and PHC) were significantly lower than patients who were admitted to only one department (ED/PHC). On the other hand there was no correlation between decreased rate of satisfaction and being successfully diagnosed or results of admissions.

**Keywords:** Emergency department, primary care, satisfaction, recurrent admission

## Introduction

While serving patients in the field of health care, it is necessary to develop appropriate solutions to the problems in line with the psychosocial aspects of the services, the different understanding of the patients, and expectations and satisfaction of the patients. Patient satisfaction can be defined as satisfying the wishes and expectations of patients, which is one of the important criteria used to measure the quality of service in the field of health (1). It is also important to determine the evaluation criteria that measure

the quality of health care services while planning the steps to be taken to address the deficiencies or problems in the health service presentation. Conducting community-based research in service procurement, determining status, comparing with the past and measuring changes over the years will contribute positively to management and resource allocation (1-3). For this purpose, the patient satisfaction surveys determine whether the expectations of the patients are met and the quality of the health service can be evaluated by this way. Patient satisfaction is closely related to patients' application to health institutions (4). In one study,

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researchers showed that the patient satisfaction in hospital environment was affected by emergency, service and discharge stages. Based on this, they thought that personal relationships were the primary factors affecting patient satisfaction (5). However, there are other important factors. For example, it is very common for old and chronic patients to be admitted to hospital again (6).

In many studies, elderly patients who are admitted in emergency services have been shown to have pulmonary and cardiovascular diseases and hypertension. It was reported that elderly patients had more complex problems during the emergency service admission, and were more likely to need more examinations and intensive care (7-9). Re-admission constitutes approximately half of all hospital admissions and 60% of cost (6,10-12). From this point of view, we aimed to conduct a questionnaire to search the number and satisfaction of patients admitted to the emergency department and primary health care institutions in the last month, including demographic information.

## Methods

The study was carried out between 1-15 May 2016 with the patients who admitted to the emergency service at the University Hospital Bezmalem Vakıf and who agreed to complete the questionnaire. Patients over the age of 18 were included in the questionnaire. The questions were asked to those who were able to speak and they were asked to their relatives in case of the patients were unable to speak or their lives were at risk. The questionnaire was carried out in patients whose examination and treatment were initiated and who were available to answer the questionnaire by a health care personnel after informed consent was taken. Patients under 18 years of age and patients with trauma were excluded from the study. In the questionnaire, patients were asked if they were admitted to primary health care service, an emergency service of a University Hospital, and other emergency services in the last month and if they were satisfied. After presenting the results with descriptive statistics, comparisons were made in terms of demographic characteristics. The choices used by patients for questions were as follows: Very satisfied, satisfied, dissatisfied, very dissatisfied. These answers were used to calculate the satisfaction rate. In the questionnaire, co-existing diseases, whether the patient was diagnosed as having a specific disease and the way of physician in managing were investigated in relation to the frequency of satisfaction or admission frequency. The questionnaire was consisted of 14 questions (Table 1). Descriptive statistics and Kruskal Wallis test were performed with the SPSS 21.0 program and  $p < 0.05$  was considered statistically significant.

## Results

A total of 200 patients were included in the study; 53% (n=106) were female; 47% (n=94) were male; and the mean age was 45 years. Of the patients only admitted to family physician (n=27) 70.4% were female and 29.6% were male. Of the patients only admitted to emergency room (n=36) 47.2% were female and 52.8% were male. When the participants were questioned about

chronic diseases, it was observed that there was 48% (n=96) of those with no disease and 24.5% (n=49) of those with multiple diseases (Table 2).

When the admissions in the last month were examined; 39.5% (n=79) of the patients was not admitted to anywhere, 60.5% (n=121) to at least one institution. Among these, 13.5% (n=27) was admitted to the family physician, 18% (n=36) to our emergency service, 4% (n=8) to another emergency service. The ratios of patients admitted to two institutions were 8.5% (n=17; family physician+our emergency service), 6% (n=12; our emergency service+another emergency service) and 3% (n=6; family physician + another emergency service), respectively. The rate of patients admitted to 3 institutions was 7.5% (n=15) (Table 3).

In all of the participants, 15.5% (n=31) of the patients was admitted to family physician to repeat prescriptions, 7% (n=14) for healthy control, 6.5% (n=13) for newly diagnosed complaints for examination, 3.5% (n=7) for chronic disease control. Of those only admitted to family physicians 47.5% wanted to repeat prescriptions and 20% wanted to be examined due to newly started complaints (Table 4). Of patients admitted to family physician, 66.2% (n=43) did not have a disease to be diagnosed. Of patients, 21.5% (n=14) did have a diagnosis and 41.3% (n=8) did not have a diagnosis. When the management and recommendations of the physicians were assessed, in 16.5% (n=33) of the patients admitted to family physician, physician prepared prescription and 4.5% (n=9) of the patients were recommended outpatient clinic control. The family physician recommended 3% (n=6) of the patients to admit to emergency room and recommended 8% (n=16) of the patients to do nothing. The family physician sent one patient to emergency service with ambulance. Of the patients admitted to family physician, 20.5% (n=41) was very satisfied, 8.5% (n=17) was satisfied, 2% (n=4) was not satisfied, and 1.5% (n=3) was dissatisfied.

Of the patients, 40% (n=80) was admitted to our emergency service in the last month. Of those patients, 45% (n=36) was admitted to emergency service with a newly started disease. Of the admissions, 35% (n=28) was for increase in complaints related to chronic disease, 8.8% (n=7) for wish to get quick result in the emergency, 7.5% (n=7) for control, and 3.8% (n=3) for getting prescription. A diagnosis was made in 26.3% (n=21) of the patients and a diagnosis was not made in 32.5% (n=26) of the patients. Of the patients, 41.3% (n=33) did not have a disease to be diagnosed. Of the patients 35% (n=28) were recommended to get appointment for outpatient clinic and 32.5% (n=26) were given prescription. Of the patients, 16.3% (n=13) were recommended nothing and 11.3% (n=9) was hospitalized. Of the patients, 2.5% (n=2) was recommended to go to family physician and 2.5% (n=2) was sent to another hospital. Of the patients admitted to emergency service, 50% (n=40) was very satisfied, 21.3% (n=17) was satisfied, 16.3% (n=13) was not satisfied, and 12.5% (n=10) was dissatisfied. The rate of admission to another emergency service in the last month was 20.5% (n=41).

**Table 1.** Questionnaires directed to patients or their relatives in the emergency room

<b>1-Age</b>		
<b>2- Gender</b>	<b>• Female</b>	<b>• Male</b>
3- Existing Diseases, If You Have Any	<ul style="list-style-type: none"> <li>• None</li> <li>• Hypertension</li> <li>• Renal failure</li> <li>• Cardiac disease</li> <li>• Diabetes mellitus</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic obstructive pulmonary disease</li> <li>• Asthma</li> <li>• Tumor, cancer</li> <li>• Others</li> <li>• More than one disease</li> </ul>
<b>4- Admission To Your Family Physician In Last One Month ( If Your Answer Is No, Go To The 5th Question )</b>	<b>• Yes</b>	<b>• No</b>
A) If yes, why?	<ul style="list-style-type: none"> <li>• Newly onset disease</li> <li>• My previous disease</li> <li>• For getting my prescription written</li> <li>• For control</li> </ul>	
B) Did you have a diagnosis?	<ul style="list-style-type: none"> <li>A diagnosis was made</li> <li>A diagnosis was not made</li> </ul>	
C) What was your doctor’s recommendation at the end of admission?	<ul style="list-style-type: none"> <li>• Transfer by ambulance</li> <li>• None</li> <li>• Drug (prescription)</li> <li>• Drug+outpatient clinic</li> <li>• Directed to emergency service</li> </ul>	
D) What was your satisfaction from your doctor?	<ul style="list-style-type: none"> <li>• I was dissatisfied</li> <li>• I was not satisfied</li> <li>• I was satisfied</li> <li>• I was very satisfied</li> </ul>	
<b>5- Admission to emergency service in last one month (If your answer is no, go to the 6th question)</b>	<b>• Yes</b>	<b>• No</b>
A) If yes, why?	<ul style="list-style-type: none"> <li>• Newly onset disease</li> <li>• My previous disease</li> <li>• For getting my prescription written</li> <li>• For control</li> <li>• To get a fast result</li> </ul>	
B) Did you have a diagnosis?	<ul style="list-style-type: none"> <li>• A diagnosis was made</li> <li>• A diagnosis was not made</li> </ul>	
C) What was your doctor’s recommendation at the end of admission?	<ul style="list-style-type: none"> <li>• Another hospital was recommended</li> <li>• None</li> <li>• Drug was recommended</li> <li>• Directed to hospital’s outpatient clinic</li> <li>• Directed to family physician</li> <li>• Hospitalized</li> </ul>	
D) What Was Your Satisfaction From Your Doctor?	<ul style="list-style-type: none"> <li>• I was dissatisfied</li> <li>• I was not satisfied</li> <li>• I was satisfied</li> <li>• I was very satisfied</li> </ul>	
<b>6- Admission to Another Emergency Service in Last One Month</b>	<b>• Yes</b>	<b>• No</b>
Participation in the questionnaire is subject to approval. relatives of patients who are unable to speak may participate in the questionnaire		

Family physician satisfaction average was 3.47±0.81 and the satisfaction average of our emergency service was 3.05±1.13 (Figure 1).

When we looked at the relationship between satisfaction and admission cause to family physician; the highest average

**Table 2. Chronic diseases of the patients**

Chronic diseases	N	%
No chronic disease	96	48.0
Hypertension	4	2.0
Chronic renal failure	10	5.0
Cardiac disease	14	7.0
Diabetes mellitus	1	,5
Chronic obstructive pulmonary disease	2	1.0
Asthma	6	3.0
Tumor, cancer	5	2.5
Others	13	6.5
More than one disease	49	24.5
Total	200	100.0

**Table 3. Causes of admission to the family physician**

Type of Admission	Number of Patients	%
No Admission	79	39.5
FP	27	13.5
ES	36	18.0
AES	8	4.0
FP+ES	17	8.5
FP+AES	6	3.0
ES+AES	12	6.0
FP+ES+AES	15	7.5
Total	200	100.0

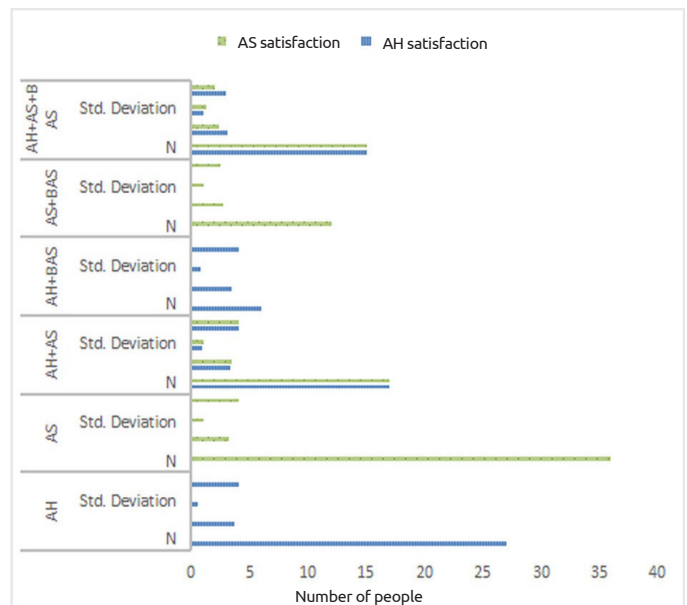
FP: Family physician, ES: Our emergency service, AES: Another emergency service

**Table 4. Distribution of admissions according to institutions in last one month**

Cause of Admission	Number of Patients	Total %	%
Newly onset complaint	13	6.5	20.0
Examination for existing chronic disease	7	3.5	10.8
For getting prescription written	31	15.5	47.7
Routine control	14	7.0	21.5
Total admission to family physician	65	32.5	100.0
No admission to family physician	135	67.5	
Total	200	100	

satisfaction rate was 3.61 in patients who had their prescription written (n=31) and the lowest average satisfaction rate was 2.71 in patients who were admitted for the control of chronic disease (n=7) (p=0.124) (Table 5). The satisfaction average was 3.3571 in the patients who were diagnosed as having a disease (n=14) and was 3.5 in those who did not have a diagnosis (n=8) (p=0.714) (Table 6). The satisfaction average was 3.66 in the patients who were recommended to go to emergency service (n=6) and was 3.42 who were given prescription (n=33) (p=0.767).

When we looked at the relationship between satisfaction and admission cause to emergency service; we found that the average satisfaction rate was 3.16 in patients who were admitted for control (n=6) and that was 3.14 in patients who were admitted with increase in complaints of a chronic disease (n=28) and these groups had the highest satisfaction rate. The lowest rate was 2.71



**Figure 1.** Chart showing the satisfaction level of the emergency room of our hospital and emergency department of the other hospitals

FD: Family doctor, OER: Our Emergency Room, AER: Another emergency room

**Table 5. Satisfaction rates and causes of admission to family physician**

Cause of Admission	Number of Patients	Satisfaction Average	Std. Dev.	Min	Max
Newly onset complaint	13	3.46	0.66	2.00	4.00
Examination for existing chronic disease	7	2.71	1.25	1.00	4.00
For getting prescription written	31	3.61	0.71	1.00	4.00
Routine control	14	3.57	0.75	2.00	4.00
Total	65	3.47	0.81	1.00	4.00

Std.Dev.: Standard deviation, Min: Minimum, Max: Maximum

in patients who wanted to get fast result (n=7) (p=0.751) (Table 7). When we looked at the relationship between satisfaction and making a diagnosis in emergency service, we found the satisfaction average was 3.04 in patients who were diagnosed as having a disease (n=21) and was 3.05 in patients who were not diagnosed (n=26) (p=0.293) (Table 8). When we looked at the relationship between satisfaction and recommendation in emergency service, we found that the highest satisfaction rate was 3.44 in patients

who were hospitalized (n=9) and that the lowest satisfaction rates were 1.5 in patients who were sent to family physician (n=2) and 2.84 in patients who were not recommended anything (n=13) (p=0.576).

When we evaluated satisfaction in groups in all admissions, satisfaction rate was 3.25 in patients who were admitted only to our emergency service (n=36), was 3.47 in those admitted to our emergency service and family physician (n=17), was 2.66 in those admitted to our and another emergency services (n=12) and was 2.4 in those admitted to all three (n=15). The patients who were admitted to family physician, our emergency service and another emergency service had the lowest satisfaction rate (p=0.014) (Figure 1).

**Table 6. Satisfaction rates and diagnosis status in patients admitted to family physician**

Diagnosis Status	Number Of Patients	Satisfaction Average	Std. Dev.	Min	Max
No diagnosis was expected	43	3.51	0.82	1.00	4.00
A diagnosis was made	14	3.35	0.92	1.00	4.00
No diagnosis was made	8	3.50	0.53	3.00	4.00
Total	65	3.47	0.81	1.00	4.00

Std.Dev.: Standard deviation, Min: Minimum, Max: Maximum

**Table 7. Satisfaction rates and causes of admission to our emergency service**

Cause of Admission	Number of Patients	Satisfaction Average	Std. Dev.	Min	Max
Newly onset complaint	36	3.02	1.02	1.00	4.00
Examination for existing chronic disease	28	3.14	1.17	1.00	4.00
For getting prescription written	3	3.00	1.73	1.00	4.00
Routine control	6	3.16	1.32	1.00	4.00
Get a fast result	7	2.71	1.38	1.00	4.00
Total	80	3.05	1.13	1.00	4.00

Std.Dev.: Standard deviation, Min: Minimum, Max: Maximum

**Table 8. Satisfaction rates and diagnosis status in patients admitted to our emergency service**

Diagnosis Status	Number of Patients	Satisfaction Average	Std. Dev.	Min	Max
No diagnosis was expected	33	3.21	1.13	1.00	4.00
A diagnosis was made	21	3.04	1.20	1.00	4.00
No diagnosis was made	26	2.84	1.08	1.00	4.00
Total	80	3.05	1.13	1.00	4.00

Std.Dev.: Standard deviation, Min: Minimum, Max: Maximum

**Discussion**

This study was based on a questionnaire applied to patients who were admitted to a university hospital with an annual admission number of 258401 to emergency service for 2013. The fact that 60.5% of the participants was admitted to family physicians, our emergency service or any emergency services at least once in the last month pointed to one of the reasons underlying the intensity of the admission to emergency services in our country. The number of admission to emergency services in Istanbul, which has a population of 14.160.467 (4), was 100.081.171 (13). This number constituted 26.97% of all hospital admission and was about 7 times the population of the city.

About half of the admissions to the family physician was consisted of patients who wanted to get their prescription written and only one-fifth of them want to be examined because of the newly started complaints. All these show that family physician is not used as the first admission unit. In a study with 485 people on awareness of family medicine in Kayseri city center, it was concluded that family medicine was not considered as the first place of admission. Readmission constitutes approximately half of all hospital admissions and 60% of all costs (6,10-12). It also indicates that patients are receiving inadequate treatment (6,14-16). In our study, more than half of the patients was re-admitted to the emergency room within a month. Calling patients to control by clinicians is expected to be effective in re-admission. Although there is no call for control in the emergency service the re-admission rate was quite high. In the questionnaire, family physicians directed 3% of their patients to emergency services, while the emergency physician recommended 14% of the patients to go to outpatient clinic for control and 1% of the patients to go to family physician. This was expected to be a factor in reducing the rate of emergency admissions.

Early readmission to hospital of high-risk and elderly patients is costly and occurs oftenly. Similar to our results, one fifth of the patients is re-admitted to hospital within 30 days and it costs \$26 million per year (17,18). To improve quality of care and prevent unnecessary repeated expenditures; politicians and insurers in the United States set a reduction in 30-day readmission as a priority national target, and searched for underlying causes to ensure this (18,19). One reason is the quality of service offered

to the patients. Health care providers have a desire to reduce the number of hospitalized patients and provide quality care. According to an argument; determining patients with a high likelihood of readmission and providing them with intensive and high quality initial treatment may reduce readmissions (6,20).

There are many benefits for family medicine in increased continuity of service such as better patient-physician communication and improved success of treatment. Repeated visits to the same family health center can also be seen as an indirect indicator of patient satisfaction (4). In our study, almost all of the patients admitted to the family physician and 3/4 of the patients admitted to the emergency department were satisfied. We saw that the readmissions to family physician in whom patient satisfaction was a little higher than the emergency room decreased slightly. Cetinkaya et al. (1) found the rate of very satisfied and satisfied patients as 80.7% in patients admitting to family physician (1).

In a randomized multicentric study on this subject, veterans with many disadvantages in benefiting from health care were discussed. By increasing the quality of care they received, they were facilitated to reach a health care institution where a good first care could be made and it was investigated whether readmissions in 6 months were reduced. Although the number of patients hospitalized in the service decreased a little bit, the results appeared contrary to expected. First, the emergence of new diseases that were overlooked in patients receiving a good health care; second, increased readmission request of the patients due to increased communication between patient and health care provider caused increase in readmissions (6). The number of visits to the family health center and satisfaction rate increased as the age increased. Furthermore, increase in the number of visits to the family health centre showed that the level of satisfaction increased (4).

Another reason that affects satisfaction is duration of waiting before examination. Bursch et al. (21) showed that the exact duration of stay in the emergency room did not affect satisfaction of patients much. The actual effect was caused by longer duration of waiting before examination. The maximum waiting time for outpatient treatment in our hospital is approximately one and a half hours in busy hours, while in most of the day, this time is half an hour. Cetinkaya et al. (1) pointed out that although there were many parameters, the most effective issue on patient satisfaction for family physicians was the attitude of the physician towards the patient (18%). Readmissions are often in patients with chronic diseases and with anticipation of hospitalization. This group of patients is small in numbers, but they cause crowding in emergency services with hospitals with limited beds and readmissions. This is usually because the patient does not receive adequate support from family, social environment and primary health care. Readmissions of these patients can be reduced by good care at home or with good protection (22). In our study, 52% of patients had known chronic diseases and 24.5% of the patients had multiple chronic diseases. Although all of these patients were not admitted due to acute attacks of their chronic diseases, it was noteworthy that half of the patients

with readmission had chronic diseases. It has become important to reduce the duration of hospitalization, to increase the use of daily procedures, to make home care programs and to develop initiatives aimed at reducing hospitalization. Evidence suggests that even a small decrease in the number of readmissions could provide a financial benefit. Targets for initiatives that can reduce readmission, improved patient and family education and community-based support, primary health care-based contact, early follow-up and ongoing chronic disease management. Initiatives aimed at reducing admission to hospital can reduce the crowd in the emergency room, improve patient outcomes, and contribute positively to existing hospital facilities without requiring an additional cost and additional hospital beds. It was found that a comprehensive good discharge planning and temporary care were effective in reducing readmission to the hospital and facilitated follow-up with primary health care after discharge from the hospital (22).

Most of the patients who are admitted to our emergency service do not have an emergency situation. This is an important and discussed factor that is widespread in our country and it affects the crowding of emergency services.

The patients who were admitted to family physician for getting their prescription written had the highest satisfaction rate and it was 3.61, whereas the patients admitted for control for their chronic diseases had the lowest satisfaction rate and it was 2.71. This could be attributed to the fact that the expectations of the patients who were admitted to get their prescription written were met. The relative decrease in satisfaction of those with chronic disease could be caused by following reasons: Their expectations of hospitalization were not met or not much change in the existing treatments were done.

When we looked at the relationship between satisfaction and admission cause in our emergency service, we found that the patients who wanted to get a fast result had the lowest satisfaction rate which could be due to the fact that they were not fully satisfied with these expectations, because waiting queues were very long in emergency rooms due to admission of patients without emergent situations.

Both in emergency room and family physician admissions, whether a diagnosis was made did not affect satisfaction. This indicates that the actual expectations of the patients are not concentrated on the diagnosis and other reasons should be sought.

Satisfaction rate was significantly lower in patients who were admitted 3 times in last one month than in patients who were admitted one time. Although they were admitted to different institutions, there was no data that could explain their low satisfaction rate. However, we think that the problems of this group should be addressed separately in other studies.

### Study Limitations

Although we believe that the questions we have prepared to reveal the relationship between satisfaction and admission are very

comprehensive and important questions, the results show that our questions are not closely associated with patient satisfaction.

## Conclusion

Satisfaction rate of patients who were admitted to both emergency room and family physician was lower than patients who were admitted to one institution (emergency room or family physician). Contrary to expectations, it was observed that whether a diagnosis was made or the way of resulting the admission did not have much effect on decreased satisfaction.

Emergency services are very crowded in our country. One of the reasons for excessive admissions to emergency services and family physicians is readmissions. Especially in patients with low level of satisfaction, we see that readmissions are increasing. Reducing such readmissions can reduce both excessive admissions and health expenditures. With patient satisfaction, we believe that many other factors may affect readmissions. However, it seems difficult to tell exactly what affects the satisfaction of the patients. To find out which factors are effective, we believe there is a need for questionnaire studies involving a wide range of questions.

## Ethics

**Ethics Committee Approval:** It was taken by the ethics committee of Bezmialem Vakif University. Approval no: 10/37

**Informed Consent:** Written informed consent was obtained from patients who participated in this study.

**Peer-review:** Externally peer-reviewed.

## Author Contributions

Concept: E.S., B.G., Design: E.S., H.İ.Ç., Data Collection and/or Processing: B.G., H.İ.Ç., Analysis and/or Interpretation: E.S., H.İ.Ç., Literature Review: E.S., B.G., Writing: E.S.

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