

Assessment of the Functional Health Status of Hypertension Patients in Family Medicine

Aile Hekimliğinde Hipertansiyon Hastalarının İşlevsel Sağlık Durumunun Değerlendirilmesi

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ABSTRACT

Background: In this study, it was aimed to evaluate the functional health status of hypertensive patients and to determine the factors affecting their functional health status.

Materials and Methods: This is a single-center, cross-sectional, descriptive survey study. It was carried out in İzmir Provincial Health Directorate Bayraklı No.15, İsmet Akman Family Health Center between 01/06/2019 and 01/09/2019. The study included 322 non-pregnant volunteers without communication problem (aged>18 years), who had a diagnosis of hypertension for at least a year based on sample size estimation of unknown population at error level of 0.05 and confidence interval of 0.95, and the frequency of hypertension was taken as 30% on average. All participants completed a 21-item questionnaire about sociodemographic and hypertension characteristics. In addition, all participants were asked to complete Turkish version of Dartmouth COOP/WONCA functional status charts. Descriptive statistics are presented as count, percentage, mean and standard deviation. The Kolmogorov-Smirnov test, Fisher's coefficient of skewness, t-test and Kruskal-Wallis test were used in the statistical analysis.

Results: The mean age was 63.10±11.63 years (min 21-max 95 years) in the study population and majority of participants (66.5%) were female. Of the participants, 35.7% were obese and 44.7% had a comorbid disease. When the average blood pressure values were assessed, it was found that blood pressure was high-normal in 20.5%, there was stage 2 hypertension in 20.2%, and regular drug use was seen in 94.7% of participants. Of the participants, 60.6% had uncontrolled blood pressure. In the evaluation of the responses to the COOP/WONCA functional status scales, the highest functional disability was found in the physical health domain with the mean score of 3.49±1.07 while lowest functional limitation was found in the social activities domain with the mean score of 1.77±0.98.

Conclusion: Hypertension and factors causing hypertension negatively affect the functional health status of individuals and lead to a decreased quality of life. Achievement of treatment goals in hypertension including ensuring blood pressure regulation and adoption of life style changes led improved quality of life through positive effects on functional health status.

Keywords: Hypertension, Dartmouth COOP/WONCA, functional health status, quality of life

ÖZ

Amaç: Bu çalışmada, hipertansiyon hastalarının işlevsel sağlık durumlarının değerlendirilmesi ve işlevsel sağlık durumuna etki eden faktörlerin belirlenmesi amaçlanmıştır.

Gereç ve Yöntemler: Araştırma tek merkezli, kesitsel, tanımlayıcı bir anket çalışmasıdır. İzmir İl Sağlık Müdürlüğü Bayraklı 15 No'lu İsmet Akman Aile Sağlığı Merkezinde 01/06/2019 ile 01/09/2019 tarihleri arasında yapılmıştır. Araştırmaya evreni belli olmayan örneklem hesabı ile hipertansiyon sıklığı ortalama %30 olarak alınarak 0,05 yanılğı, 0,95 güven aralığında gönüllü, iletişim sorunu olmayan, 18 yaşından büyük, gebe olmayan ve en az 1 yıldır hipertansiyon tanısına sahip 322 kişi dahil edilmiştir. Katılımcılara sosyo-demografik ve hipertansiyon hastalığına ilişkin verilerin değerlendirildiği 21 soruluk anket uygulanmış ve sonrasında katılımcılar tarafından Dartmouth COOP/WONCA işlevsel durum ölçeğinin Türkçe çevirisi cevaplanmıştır. Verilerin istatistiksel değerlendirmesinde sayı, yüzde, ortalama, standart sapma, Kolmogorov-Smirnov ve Fisher'in çarpıklık katsayısı, t-testi ve Kruskal-Wallis testi kullanılmıştır.



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Received: 23.12.2020 **Accepted:** 05.03.2021

Bulgular: Katılımcıların yaş ortalaması 63,10±11,62 (min 21-max 95 yaş) olup, yarısından fazlası (%66,5) kadın ve %35,7'si obezdi. Hastaların %44,7'sinde hipertansiyon dışı ek bir hastalık vardı. Katılımcıların ortalama tansiyon değerlerine bakıldığında grubun %20,5'i yüksek normal, %20,2'si evre 2 hipertansiyon değerlerine sahipti ve %94,7'si ilaçlarını düzenli almaktaydı. %60,6 oranında katılımcının kan basıncı kontrol altında değildi. COOP/WONCA işlevsel durum ölçeklerine verilen cevapların değerlendirilmesinde en fazla işlevsel kısıtlılık 3,49±1,07 ortalama puan ile bedensel sağlık alanında, en az işlevsel kısıtlılık ise 1,77±0,98 ortalama ile sosyal faaliyetler alanında saptanmıştır.

Sonuç: Hipertansiyon ve hipertansiyona neden olan faktörler bireylerin işlevsel sağlık durumlarını olumsuz yönde etkileyerek yaşam kalitelerinin azalmasına neden olmaktadır. Hipertansiyon hastalığının tedavi hedefi olan kan basıncı regülasyonunun sağlanması ve gerekli yaşam tarzı değişikliklerinin uygulanması işlevsel sağlık durumunu olumlu yönde etkileyerek yaşam kalitesinin artmasına neden olmaktadır.

Anahtar Kelimeler: Hipertansiyon, Dartmouth COOP/WONCA, işlevsel sağlık durumu, yaşam kalitesi

Introduction

The World Health Organization (WHO) suggests that hypertension is the leading risk factor for mortality globally (1). In 2017, the hypertension caused 10.44 million deaths from all age groups regardless of gender worldwide. In 2015, WHO reported that there were 1.13 billion patients with hypertension worldwide (2). The hypertension prevalence ranges from 30% to 45% across the world. Hypertension becomes more common with advancing age with prevalence reaching up to 60% in individuals aged >60 years (3). In 2017 TEKHARF study, hypertension prevalence was found as 36.4% in rural areas and 31.7% in urban areas with overall prevalence of 33.7% in Turkey. In the study, it was estimated that there were 14.3 million patients with hypertension (8 million women and 6.3 men) in Turkey (4). The hypertension is defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg measured in office after resting in more than one occasion (5). The hypertension is a chronic systemic disorder that is characterized by increased risk for major complications such as stroke and coronary heart disease. The hypertension is a global health issue due to its high prevalence and life-threatening complications in uncontrolled cases.

The quality of life (QOL) consists of several components including satisfaction, individual wellbeing, happiness, functional sufficiency, social wellbeing and economic self-sufficiency (6). The WHO QOL Work Group (WHO QOL) defines QOL as "individual's perception of their position in life in the context of culture and value systems in which they live and in relation to goals, expectations, standards and concerns" (7). Functional health status (FHS) is the major component of health-related QOL.

FHS, in other words, functional status is defined as individual's ability of adaption to his/her environment in a certain time period, which can be measured in subjective and objective manner. In general, one of the methods to assess

the outcomes of health-related procedures is to measure ability to perform daily life activities. It is particularly difficult to measure QOL and wellness since they are highly abstract and range in a wide spectrum. In fact, functionality, a major component of health and quality of life, is a measurable concept of health (8).

The tools for the measurement of health-related QOL are classified as general scales and specific scales. The health profiles classified under general scales can be used in several health conditions and disorders. They can be applied to any population or any disease or health condition. They include Dartmouth COOP/WONCA Functional Health Charts, Sickness Impact Profile, World Health Organization Health-related QOL (WHOQOL), Nottingham Health Profile, Short Form-36 (SF-36, Medical Outcome Study 36-items Short Health Survey), Duke Health Profile and Quality of Well-being Scale among others.

In this study, it was aimed to assess FHS and potential confounders on FHS in patients with hypertension by using COOP/WONCA functional health assessment parameters. It will be guiding to determine the effects of daily activities, functional limitations and factors involved in the management of patients with hypertension, which is a common health problem in the community. Early interventions including medical therapy, lifestyle changes and long-term social support will aid to reduce complications and mortality at long-term.

Material and Methods

This is a single-center, cross-sectional, descriptive survey. In this study, FHS was assessed in patients with hypertension using Dartmouth COOP/WONCA Functional Health Charts. The study was approved by Ethics Committee on Clinical Research of İzmir Bozyaka Training and Research Hospital, Health Sciences University (approval: 22/05/2019-8). The survey was conducted at Health Directorate of İzmir Province Bayraklı İsmet Akman Family Health Center No 15 between 01.06.2019 and 01.09.2019. The study included 322 non-

pregnant patients aged >18 years without communication problems, who had diagnosis of hypertension for at least one year, based on sample size estimation of unknown population at error level of 0.05 and confidence interval of 0.95. All participants gave written informed consent.

Participants completed a 21-item questionnaire about sociodemographic characteristics (age, gender, marital status, education level etc.), disease characteristics (duration of hypertension, frequency of blood pressure measurements, number of medications, comorbid conditions, treatment compliance) and habits (alcohol consumption, smoking status, dietary habits, physical exercises). Before questionnaire, blood pressure measurement was performed by researcher and body mass index was calculated by quantification of weight and height in all participants. After completion of questionnaire, all participants completed Turkish version of 8-item Dartmouth COOP/WONCA Functional Health Chart, which assesses physical fitness, feelings, change in health, overall health, QOL and pain. Dartmouth charts were first developed under the leadership of Dartmouth Medicine School and Dartmouth-Hitchcock Medical Center in 1977 (9). It is also known as Primary Care Cooperative Information Project (COOP) (10). The COOP charts were revised for use in general medicine worldwide by Classification Committee involving primary care physicians, which was endorsed by WONCA (10). The charts include physical health status, emotions, daily activities, social activities, health transformation and overall health sub-domains while QOL and pain sub-domains can be added optionally. It is a patient-based assessment tool (11). COOP/WONCA charts assess FHS of individuals within prior 2 weeks. Each chart involves one item of COOP scale. Each chart includes a question on FHS and 5 answers (rated from 1 to 5). For each answer, there are simple figures representing emotions in addition to rating for use of illiterate individuals. Answer in each chart is assessed individually with higher scores indicating worse functional health status. Turkish validity and reliability study was performed by Çalişkan and Uzuner (12).

Statistical Analysis

Data were analyzed using SPSS version 21.0 (Statistical Package for Social Sciences). Descriptive data were presented as frequency, percent and mean \pm standard deviation. Normal distribution was assessed using the Kolmogorov-Smirnov test and Fisher's coefficient of skewness which revealed skewed distribution for COOP/WONCA Functional Health Chart scores and sociodemographic characteristics. As COOP/WONCA Functional Health Charts were rated as +3.5 according to central limit theorem, which was smaller than +3, parametric t-test was used. Non-parametric Kruskal-Wallis test was

used to assess the mean COOP/WONCA Functional Health Chart scores according to occupation and education level. For all tests, a p value <0.05 was considered as statistically significant.

Results

Table 1 presents sociodemographic characteristics of participants. We questioned disease duration and medications in 322 patients with hypertension and hypertension was classified according to the 2018 European Society of Hypertension/European Society of Cardiology (ESC/ESH) Guidelines for Management of Arterial Hypertension. Table 2 presents hypertension-related characteristics. We calculated the average blood pressure values measured from either right or left arm according to gender. The maximum blood pressure was 220/100 mmHg among female participants and 220/130 mmHg among male participants. It was found that the mean systolic and diastolic blood pressure values were higher in female participants than in male participants.

Of the participants, 35.1% were attending regular exercises; 91.9% did not consume alcohol; 24.8% were smokers; and 38.5% had no dietary regimen adapted. Table 3 presents the distribution of answers to COOP/WONCA Functional Health Charts. When answers to COOP/WONCA Functional Health Charts were assessed, it was found that 39.1% of participants responded as "light" to item "During past 2 weeks, what was the hardest physical activity you could do for at least 2 minutes". The highest functional limitation (mean score: 3.49 ± 1.07) was detected in physical health. When physical health status was compared with sociodemographic data, it was found that the female participants ($p < 0.001$), those aged ≥ 60 years ($p < 0.001$), single participants ($p < 0.001$), those not attending regular exercises ($p = 0.04$), housewives and those with education level below primary school ($p < 0.001$) had milder physical activity and experienced limitations in physical health.

Of the participants, 48.4% responded as "moderate" to item "During the past 2 weeks, how much have you been bothered by emotional problems such as feeling anxious, depressed, irritable or downhearted and blue". The mean score was 2.89 ± 1.04 with moderate limitation in feelings. In our study, it was seen that individuals without comorbid disorders experienced significantly higher limitation ($p = 0.03$).

Of the participants, 27.6% responded as "no difficulty at all" to item "During the past 2 weeks, how much difficulty have you had doing your usual activities or tasks, both inside and outside the house because of your physical and emotional health". The mean score was 2.37 ± 1.09 and partial limitation was detected in daily activities. It was found that female participants, those aged >60 years, single participants ($p < 0.001$), non-smokers ($p = 0.02$), those not consuming alcohol

Table 1. Distribution of participants according to their sociodemographic characteristics

Demographic characteristics		n	%
Gender	Female	215	66.5
	Male	107	33.5
Age (years)	<40	4	1.3
	40-49	33	10.3
	50-59	82	25.3
	60-69	98	30.3
	70-79	82	25.6
	≥80	235	7.2
BMI	Underweight	6	1.9
	Normal	76	23.6
	Overweight	114	35.4
	Obese	115	35.7
	Morbid obese	11	3.4
Marital status	Married	251	78.0
	Single	71	22.0
Occupation	Housewives	178	55.3
	Retired	106	32.9
	Unemployed	5	1.6
	Active employee	33	10.2
Monthly income	<Minimum wage	37	11.5
	Minimum wage	159	49.4
	Minimum wage- 3000 TL	92	28.6
	>3000 TL	34	10.5
Education level	Illiterate	62	19.3
	Literate	28	8.7
	Primary school	166	51.6
	Secondary school	26	8.0
	High school	31	9.6
	≥Undergraduate	9	2.8
Family	Single	65	20.2
	Elementary family (partner plus children)	250	77.6
	Extended family (elementary family plus parents)	7	2.2
Social insurance	None	29	9.0
	SGK	279	86.7
	Private insurance	14	4.3
Comorbid disease	Yes	144	44.7
	No	178	55.3
Total		322	100.0

BMI: Body mass index, SGK: Social security institution

($p<0.001$), those with average blood pressure of ≥ 140 mmHg ($p=0.04$), those not attending regular exercises ($p<0.001$), housewives and those with education level below primary school ($p<0.001$) experienced significantly higher limitation in daily activities.

One half of the participants responded as “not at all” to item “During the past 2 weeks, has your physical and emotional health limited your social activities with family, friends, neighbors or groups?”. The mean score was 1.77 ± 0.98 while the lowest mean score was detected in social functionality. It was found that there was significantly higher limitation in elder individuals ($p=0.01$), those with elevated blood pressure, single participants not attending regular exercises ($p<0.001$),

Table 2. Distribution of hypertension-related characteristics in participants

Characteristics		n	%
Hypertension classification	Optimal	18	5.6
	Normal	43	13.3
	High-normal	66	20.5
	Grade 1	63	19.6
	Grade 2	65	20.2
	Grade 3	30	9.3
	Isolated systolic	37	11.5
Duration of hypertension diagnosis	1-5 years	140	43.5
	6-9 year	67	20.8
	≥10 years	115	35.7
Regular medication	Yes	305	94.7
	No	17	5.3
Antihypertensive agent	1	234	72.7
	2	76	23.6
	3	8	2.5
	>3	4	1.2
Duration of antihypertensive medication	1-5 years	140	43.5
	6-9 years	67	20.8
	≥10 years	115	35.7
Drugs other than antihypertensive agents	Yes	175	54.3
	No	147	45.7
Frequency of blood pressure measurement	Daily	38	11.8
	Weekly	116	36.0
	Monthly	104	32.3
	Never	64	19.9
Frequency of presentation to healthcare facility for blood pressure measurement	3 months	109	33.9
	6 months	76	23.6
	1 years	66	20.5
	>1 year	71	22.0
Total		322	100.0

Table 3. Distribution of answers to COOP/WONCA functional health charts in participants

		n	%
Physical health	Very heavy	19	5.9
	Heavy	35	10.9
	Moderate	90	28.0
	Light	126	39.1
	Very light	52	16.1
Feelings	Not at all	37	11.5
	Slightly	57	17.7
	Moderately	156	48.4
	Quite a bit	47	14.6
	Extremely	25	7.8
Daily activities	No difficulty at all	89	27.6
	A little bit difficulty	84	26.1
	Some difficulty	93	28.9
	Much difficulty	52	16.2
	Could not do	4	1.2
Social activities	Not at all	169	52.5
	Slightly	85	26.4
	Moderately	46	14.3
	Quite a bit	17	5.3
	Extremely	5	1.5
Change in health	Much better	16	5.0
	A little better	73	22.6
	About same	197	61.2
	A little worse	35	10.9
	Much worse	1	0.3
Overall health	Excellent	10	3.1
	Very good	39	12.1
	Good	176	54.7
	Fair	84	26.1
	Poor	13	4.0
Quality of life	Very well: could hardly be better	6	1.9
	Pretty good	92	28.7
	Good and bad parts about equal	196	61.0
	Pretty bad	24	7.5
	Very bad: could hardly be worse	3	0.9
Pain	No pain	64	19.9
	Very mild pain	50	15.6
	Mild pain	85	26.5
	Moderate pain	96	29.9
	Severe pain	27	8.1
Total		322	100.0

housewives ($p=0.02$) and those with education level below primary school ($p=0.01$).

For the item “How would you rate your overall health now compared to 2 weeks ago”, the mean score was found as 2.79 ± 0.71 and 61.2% of participants gave almost the same answer. It was found that the participants not consuming alcohol ($p=0.03$) and those without comorbid disease ($p=0.01$) had significantly higher limitation compared to remaining participants.

The mean score was 3.16 ± 0.80 for the item “During the past 2 weeks, how would you rate your health in general?”. It was the parameter which showed second highest score in the charts. Of the participants, 54.7% responded as “good” while one-third responded as “fair” or “poor”. It was found that general health status was defined as poorer by female participants ($p=0.03$), elder individuals ($p<0.001$), those not consuming and not attending regular exercises ($p=0.01$) and those with education level below primary school ($p<0.001$).

Of the participants, 61.0% responded as “good and bad parts about equal” to item “How have things been going for you during the past 2 weeks”. The mean score was found as 2.77 ± 0.64 and moderate limitation was detected in quality of life. Female participants ($p=0.06$), elder individuals ($p=0.01$), those with high blood pressure and not consuming alcohol ($p<0.001$), those not attending regular exercises ($p=0.02$) and housewives ($p<0.001$) rated their quality life as poorer.

Of the participants, 19.9% responded as “no pain to item During the past 2 weeks, how much bodily pain have you generally had”, while 29.9% as moderate pain and 8.1% as “severe pain”. The mean score was 2.91 ± 1.25 while more than one-half of patients reported mild or moderate pain. It was found that elder female participants ($p<0.001$), single participants ($p=0.01$), non-smokers ($p=0.01$), those not-consuming alcohol ($p<0.001$), housewives and those with education level below primary school ($p<0.001$) experienced pain-related limitation.

Discussion

In our study, the mean age was 63.10 ± 11.62 years among participants. Of the participants, 30.3% were in the age group of 60-69 years, comprising greater proportion in the study. Of all individuals included, 81.2% were 50 years or older. The hypertension prevalence ranges from 30% to 45% across the world. Hypertension becomes more common with advancing age with prevalence reaching up to 60% in individuals aged >60 years (3). In our study, underweight participants (1.9%) were the smallest group while overweight (35.4%) and obese participants (35.7%) were the greatest group. Like our study, hypertension prevalence was found as 34.7% in overweight individuals whereas 47.1% in obese individuals in PATENT-2 study from Turkey (13). In our study, it was found that 44.7%

of participants had comorbid disease while hypertension was accompanied by diabetes mellitus in 31.3% of patients. In a study from Turkey, Akman and Akşit (14) found that diabetes mellitus was the most common comorbid disease by 41% in patients with hypertension. In our study, blood pressure was $<140/90$ mmHg in 39.4% while $\geq 140/90$ mmHg in 60.6% of participants. Given that participants in our study had the diagnosis of hypertension for at least one year, the blood pressure was under control in 39.4% while there was uncontrolled blood pressure in 60.6% of participants. In the PATENT-2 study from Turkey (2012), it was found that blood pressure was under control in only 28.7% of all hypertensive individuals while it was under control in 53.9% of those receiving anti-hypertensive treatment (15). We questioned habits regarding exercises, alcohol, smoking and diet as they were risk factors for blood pressure elevation and part of life style changes recommended in the treatment of high blood pressure. It was found that, of the participants, 35.1% attended to regular exercises, 91.9% were not using alcohol, 75.2% were non-smokers, 21.1% were on DASH diet, and 40.1% had restricted salt intake. Based on our findings, it was seen that only one-fourth of participants adapted lifestyle changes recommended while majority of patients did not adapt such recommendations. In a study by Aypak et al. (16), it was found that 73% of patients were non-smokers while 43.8% had never adapted a dietary regimen, 25.6% partially adapted dietary recommendation and only 13.6% adapted a regular dietary regimen.

When the mean scores in 8-item Dartmouth COOP/WONCA chart were assessed, it was seen that there was functional limitation in all 8 sub-domains as being more prominent in physical activity and overall health. In the literature, there are many studies demonstrating that QOL was negatively affected in patients with hypertension. Although different assessment tools were used, it has been shown that hypertension has a negative effect on health-related QOL and FHS of individuals. In a study on 5,404 individuals, Bardage and Isacson (17) investigated QOL in hypertensive patients and showed that QOL was poorer and was improved by education level. In a population-based study from China, Zhang et al. (18) found that QOL was worsened by hypertension and factors leading hypertension.

In our study, it was observed that female participants with hypertension, particularly housewives, had decreased functional status in all sub-domains other than feelings. Similarly, in a study by Göçgeldi et al. (19), it was shown that QOL and satisfaction were poorer in women with hypertension when compared to men. In our study, 82.8% of participants were housewives. In previous studies, it was shown that housewives experienced more psychological problems such as anxiety, depression, anger or obsession and had less social

support compared to working women (20). It is thought that orderly social life and support from family members have positive influence on QOL and functional health status. In our study, it was seen that there was limitation in almost all sub-domains of FHS by decreasing educational level in the participants. In the studies by Bardage and Isacson (17) and Li et al. (21), it was found that QOL was improved by increasing educational level. It was observed that improved awareness and health literacy about hypertension and its treatment due to increased education level had positive impact on individual's functional health status. In our study, it was found that participants not attending regular exercises experienced limitation in sub-domains of FHS including physical health, daily activities, social activities, overall health and quality of life. It is well-known that regular exercises, an important component of lifestyle changes, have a positive effect on blood pressure values in patients with hypertension (22). Physical exercises have positive influences on quality of life, body composition, muscle strength and mental status (23).

In many studies on hypertension and quality of life, it was shown that elevation in blood pressure was associated with QOL and FHS with worsened QOL by increasing blood pressure values (17,21). In our study, a positive correlation was detected between blood pressure evaluation and limitation in daily activities, social activities and QOL sub-domains of functional health status. In our study, it was found that 44.7% of participants had a comorbid disease. It was observed that diabetes mellitus was the most common comorbid chronic condition accompanying to elevated blood pressure. In some studies, it was reported that the presence of comorbid disease worsened QOL in patients with hypertension (19). In our study, it was found that FHS was better in patients without comorbid disease when compared to those with comorbid disease. FHS is defined as individual's ability of adaption to his/her environment in certain time period, which can be measured in subjective and objective manner (10). It is assessed by individual's perception and expectations about life. It can be directly affected by environmental factors. Based on our data, it was seen that majority of patients without comorbid disease were women. It is known that satisfaction and FHS are poorer in women when compared to men. It is thought that the results inconsistent with literature can be associated to gender and environmental and sociocultural factors that may affect perceptions of participants in our study.

Conclusion

Our data together with literature findings show that the assessment of FHS in the management in patients with hypertension cannot only allow taking measures to improve QOL but also provide information about environmental factors, lifestyle and habits that may increase cardiovascular risk. In

patients with hypertension, achieving blood pressure control, counseling regarding lifestyle changes and patient education will positively affect functional status. The assessment of FHS by family practitioners providing individual-centered healthcare to an individual, his/her family and community can be guiding for hypertension management, follow-up, prevention of potential complications through lifestyle changes and determination of social support.

Ethics

Ethics Committee Approval: Ethics Committee on Clinical Research of İzmir Bozyaka Training and Research Hospital, University of Health Sciences Turkey (approval: 22/05/2019-8).

Informed Consent: All participants gave written informed consent.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Concept: O.A., Ö.T., Design: O.A., Ö.T., Data Collection or Processing: O.A., Ö.T., Analysis or Interpretation: O.A., Ö.T., Literature Search: O.A., Writing: O.A.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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