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The Implementation of Traditional and Complementary Medicine and Herbal Products in Musculoskeletal Problems: A Cross-Sectional Study

Kas-İskelet Sistemi Sorunlarında Geleneksel ve Tamamlayıcı Tıp Uygulamaları ve Bitkisel Ürünlerin Kullanımı: Kesitsel Çalışma

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ABSTRACT Objective: We aimed to evaluate which traditional and complementary medicine (TCM) practices were used in coping with musculoskeletal problems, whether herbal products were used, and their satisfaction levels with these methods. **Material and Methods:** A questionnaire was prepared by the researchers. The questionnaire consisted of items about demographic information and history of using TCM and herbal products (individual use of plants outside the scope of phytotherapy). This survey was conducted face-to-face or in another way. **Results:** A total of 305 people were interviewed during the study. Of these volunteers, 191 (62.6%) individuals stated that they received at least one of the TCM practices or herbal products. 139 out of 191 people (72.8%) were using these methods to cope with musculoskeletal problems. The most preferred practices by the 139 participants (62 females, 77 males; mean age 48.07±13.37 years; ranging between 22 and 82 years) were cupping therapy (43.8%), use of herbal products (35.2%), use of drugs without the advice of a physician (35.2%) and osteopathy (13.6%). A better health status after application of these practices was reported by 71.2% of the participants, 79.9% were satisfied with the practice. **Conclusion:** Most of our participants reported that they used TCM applications for musculoskeletal problems and were satisfied with these applications. We believe that health professionals, especially physiotherapists, should increase their basic knowledge about TCM applications that can be applied in addition to conservative treatment and plan new research.

Keywords: Complementary medicine; musculoskeletal problems; traditional medicine

ÖZET Amaç: Kas-iskelet sistemi sorunlarıyla baş etmede geleneksel ve tamamlayıcı tıp uygulamalarının hangilerinin kullandığını ve bitkisel ürün kullanıp kullanılmadığını belirlemeyi ve bu yöntemlerden memnuniyet düzeylerini değerlendirmeyi amaçladık. **Gereç ve Yöntemler:** Araştırmacılar tarafından bir anket hazırlandı. Anket, demografik bilgiler, geleneksel ve tamamlayıcı tıp uygulamaları (GETAT) ve bitkisel ürünlerin (bitkilerin fitoterapi kapsamı dışında bireysel kullanımı) kullanımına ilişkin maddelerden oluşuyordu. Bu anket yüz yüze görüşme tekniği ile uygulandı. **Bulgular:** Bu çalışmaya toplam 305 gönüllü dâhil edildi. Bu gönüllülerden 191 kişi (%62,6) çeşitli GETAT uygulamalarından veya bitkisel ürünlerden en az birini kullanıyordu. 191 kişiden 139'u (%72,8) kas-iskelet sistemi sorunlarıyla baş etmek için bu yöntemleri kullanıyordu. Katılımcıların (62 kadın, 77 erkek; ortalama yaş 48,07±13,37 yıl; 22-82 yıl arasında) en çok tercih ettiği uygulamalar kupa tedavisi (%43,8), bitkisel ürün kullanımı (%35,2), hekim tavsiyesi olmadan ilaç kullanımı (%35,2) ve osteopati (%13,6) idi. Katılımcıların %71,2'si bu uygulamalardan sonra sağlık durumunun daha iyi olduğunu, %79,9'u uygulamadan memnun olduğunu belirtti. **Sonuç:** Katılımcılarımızın çoğu kas-iskelet sistemi problemlerinde GETAT uygulamalarını kullandığını ve bu uygulamalardan memnun olduklarını bildirmiştir. Sağlık profesyonellerinin, özellikle fizyoterapistlerin, konservatif tedaviye ek olarak uygulanabilecek GETAT uygulamaları hakkında temel bilgilerini artırmaları ve yeni araştırmalar planlamaları gerektiğini düşünmekteyiz.

Anahtar Kelimeler: Tamamlayıcı tıp; kas-iskelet sistemi problemleri; geleneksel tıp

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Traditional and complementary medicine (TCM) is defined as the total of knowledge, skills and practices that can be explained based on theories, beliefs and experiences specific for different cultures that are used for the prevention, diagnosis, improvement or treatment of physical and mental diseases and maintaining good health status.[1-3]

Although, there are supportive and opposite opinions, patients may have different health seeking behaviours and apply to TCM practices. Therefore TCM practices have an important place in the health seeking behaviours of the patients and may be preferred primarily in some cases.[4-6]

According to the 2014-2023 Strategy Report of the World Health Organization, traditional medicine practices constitute 18.0% of all practices at hospitals in China.[1] It was stated in a study which was published in the USA that 38.3% of adults and 11.8% of children receive benefit from TCM practices. According to statistics published within the scope of the Cambrella project, TCM practices were used averagely at a rate of 30% in Europe.[7] In a cross-sectional study conducted in Türkiye, it was found that 68% of patients try traditional or complementary practices at any time of their lives.[8] In Türkiye, the usage rates of TCM in children and the elderly population are similar by 56.5% and 58.6%, respectively.[9-11] Similarly, the use of plants and plant products is increasing in many countries.[12-15] Plants have been used for medicinal purposes since ancient times, and many of the medicines used today are formulated from plants. Plants or herbal products are frequently used in cases such as flu, diabetes, heart disease, cancer and pain caused by the musculoskeletal system and are very diverse. Mint, fennel, linden, chamomile, ginger, turmeric, ginseng, safflower, lemon balm, rosemary, yarrow, raspberry, blackberry, rosehip, echinacea, garlic, red pepper, devil's claw, white willow bark, lavender, aloe vera, St. John's wort, green tea, grape, angelica-tree, Asian dogwood fruit and ivy seed are some of them.[16-23]

According to the World Health Organization's strategy report, 23% of patients with musculoskeletal system problems in the US received traditional medicine practice while this rate was higher in France. It was stated that the demands of multiple sclerosis patients towards these practices were found to be 41%, 70% and 82% in Spain, Canada and Australia, respectively. In the USA, traditional medicine practices are mostly used in health problems such as low back pain (17.1%), neck pain (5.9%), joint pain (5.2%) and arthritis (3.5%). The patients who were directed to TCM practices in China and Korea most commonly had cerebrovascular accident, intervertebral disc displacement, hemorrhoids, ischemic heart disease, hypertension, musculoskeletal system disorders and peripheral nerve diseases. The patients with chronic musculoskeletal system diseases show a tendency to these practices worldwide.[1]

According to the published studies, TCM can be performed particularly in the fields of psychiatry, orthopedics, physiotherapy and rehabilitation in addition to traditional medical practices.[5] It was figured out in another study that patients who can be included in physiotherapy and rehabilitation programs for lumbar disc herniation, arthritis, chronic heart disease, chronic kidney disease, diabetes and hypertension were applying for traditional medicine at a rate ranging between 50.7% and 84.7%.[24] In another study, the rate of patients who received TCM in the field of physiotherapy and rehabilitation was found to be 15%.[6] As a result of the literature research we have conducted, we could not reach any data related with the prevalence of CMT practices and the use of herbal products in the field of musculoskeletal diseases in Türkiye. Therefore, in our study, we aimed to determine which traditional medicine and complementary medicine methods are used by the people living in our region to cope with their musculoskeletal problems and the fact whether they use herbal products. We also expected to ascertain as a secondary goal whether they were satisfied with these methods.

MATERIAL AND METHODS

Our research is a cross-sectional study. The study was conducted in accordance with the guidelines outlined in the Declaration of Helsinki, emphasizing the ethical principles for medical research involving human participants. Prior to their participation, informed consent was obtained from all of the participants. The

ethical approval of the study numbered 20.478.486 and dated March 13, 2019 was obtained from Health Sciences Ethics Committee.

STUDY PARTIPICANTS

Our study was conducted between March 2019 and November 2019. The individuals aged 18 years and over who have been in the garden of University Hospital at the time of the study were invited to participate in this study.

During the time interval that researchers spent to collect data, they randomly interviewed with individuals in the hospital garden. We have informed them about the study and explained the objective of the study. The study included the individuals who were volunteer to respond the questionnaire. The volunteer individuals who participated in the study signed the written informed consent form. A questionnaire was prepared by the researchers. The questionnaire was filled by the researchers using the face-to-face interview method.

DATA FORM

The questionnaire consisted of items about demographic information, musculoskeletal problems (muscle, bone, nerve and connective tissue disorders, injuries of joint and joint injuries and spinal disc injuries, etc.) and history of treatment with TCM and use of herbal products. Primarily, sociodemographic data (age, gender, educational status, marital status, occupational status and income level, place of residence and social security of the participants) and clinical data were questioned.

Then, their history of treatment with TCM and herbal products (individual use of plants outside the scope of phytotherapy) was questioned. The presence of a previous treatment of TCM or herbal products and its reason, the fact whether the person felt better after practice, type of the applied practices and special conditions for applying practices (i.e., no healthcare service in residence area, long waiting times in hospitals etc.) were questioned. In addition, the participants were questioned whether they paid for the practices as well as the identity and education level of the practitioner performing the practice.

STATISTICAL ANALYSIS

Statistical analysis was performed using IBM SPSS® 26 (SPSS Inc., Chicago, IL, USA) software. Descriptive statistics were given as mean±standard deviation values. Frequency and percentage values were given for discrete (categorical) variables. Pearson's chi-squared test was used to compare the discrete data. p values less than 0.05 were considered statistically significant.

RESULTS

A total number of 305 volunteers were included in this study. Of these volunteers, 191 (62.6%) individuals stated that they received at least one of the TCM practices or herbal products due to various health problems while 114 (37.4%) stated that they did not apply any of them. It was reported by 139 (72.8%) of 191 people that they used these methods to cope with musculoskeletal problems. The remaining 52 (27.2%) people denoted that they use it for diseases such as cancer, diabetes, hypertension, asthma, bronchitis or quitting smoking. In our study, the data of 139 volunteers (62 females, 77 males; mean age 48.07±13.37 years; ranging between 22 and 82 years) with a health problem related to the musculoskeletal system were analysed.

We found out that participants used many different methods to deal with musculoskeletal problems (Cupping, osteopathy, leeching, chiropractic, apitherapy, mesotherapy, acupuncture, phytotherapy, reflexology, homeopathy, medication use with the advice of a non-physician health provider, herbal products, bone-setter and religious practices). Some of these methods were within the scope of a legal regulation of the Ministry of Health which included the training and authorization of people who apply these methods in Türkiye. A group of practices were not covered by the regulation. Therefore, the methods within the regulation were defined as TCM while and the methods out of the scope of the regulation were named as other practices in presenting our article data.

It was found that 41 (29.5%) of 139 volunteers preferred to receive TCM, only 58 (41.7%) participants received TCM and other practices together and

TABLE 1: Sociodemographic characteristics of the groups.

	TCM n=41	TCM and Other practices n=58	Other practices n=40	p value*
Age (year; $\bar{X}$±SD)	51.5±11.7	47.9±13.3	44.9±14.6	0.083
Gender n (%)				
Male	20 (26.0)	34 (44.2)	23 (29.9)	0.594
Female	21 (33.9)	24 (38.7)	17 (27.4)	
Education n (%)				
None	3 (100)	0 (0)	(0)	
Elementary school	12 (36.4)	10 (30.3)	11 (33.3)	
Secondary school	2 (11.1)	9 (50.0)	7 (38.9)	0.034
High school	15 (35.7)	14 (33.3)	13 (31.0)	
University	9 (23.7)	21 (55.3)	8 (21.1)	
Postgraduate	0 (0)	4 (80.0)	1 (20.0)	
Employment n (%)				
Not working	14 (38.9)	16 (44.4)	6 (16.7)	
Employed	17 (25.8)	22 (33.3)	27 (40.9)	0.069
Retired	10 (28.6)	19 (54.3)	6 (17.1)	
Student	0 (0)	1 (50.0)	1 (50.0)	
Social Security n (%)				
None/Yes	7 (41.2)/34 (27.9)	6 (35.3)/52 (42.6)	4 (23.5)/36 (29.5)	0.529
Monthly Income (TL) n (%)				
0	9 (45)	8 (40)	3 (15)	
0-1900	9 (25.7)	16 (45.7)	10 (28.6)	0.653
1900-6200	19 (26.4)	29 (40.3)	24 (33.3)	
6200+	4 (33.3)	5 (41.7)	3 (25.0)	
Residence n (%)				
Rural	5 (29.4)	10 (58.8)	2 (11.8)	
County	14 (29.2)	19 (39.6)	15 (31.3)	0.507
City center	22 (29.7)	29 (39.2)	23 (31.1)	
Marital Status n (%)				
Single /Married	6 (21.4)/35 (31.5)	11 (39.3)/47 (42.3)	11 (39.3)/29 (26.1)	0.338
Regular Medication n (%)				
None	21 (25.6)	34 (41.5)	27 (32.9)	
1 medication	6 (26.1)	10 (43.5)	7 (30.4)	0.395
1+ medication	14 (41.2)	14 (41.2)	6 (17.6)	

*p for Pearson's chi Square Analysis; p<0.05 was accepted as statisticaly signifant difference. TCM: Traditional and complementary medicine, SD: Standard deviation.

40 (28.8%) individuals preferred to undergo only other practices. Data of these 3 groups were analysed. The sociodemographic characteristics of the groups were similar except for the level of education (p>0.05, Table 1).

The method chosen by the participants for the treatment of their diseases was most commonly cupping (n=61, 43.88%), using a medication with the advice of non-physician providers (n=49, 35.25%) and using herbal products (n=49, 35.25%). The differences between these groups were also evaluated. The individuals in TCM group most frequently preferred cupping, osteopathy and leeching (n=27 (50.94%), n=10 (18.87%) and n=4 (7.55%), respectively). On the other hand, the other practice group preferred to use medication with the advice of non-physician health providers, herbal products, and bonesetters (n=24 (51.06%), n=16 (34.04%) and n=5 (10.64%), respectively). The individuals in the group who preferred to receive both TCM and other practices frequently used cupping, phytotherapy and apitherapy (n=34 (38.20%), n=14 (15.73%) and n=11 (12.36%), respectively) among TCM practices and herbal products, using medica-

TABLE 2: Traditional and complementary medicine and other practices preferences.

		TCM and other practices n=58			
	TCM n=41	TCM	Other practices	Other practices n=40	Total n=139
Application Methods	n (%)	n (%)	n (%)	n (%)	n (%)
TCM applications					
Cupping	27 (50.94)	34 (38.20)			61 (43.88)
Osteopathy	10 (18.87)	9 (10.11)			19 (13.67)
Leeching	4 (7.55)	8 (8.99)			12 (8.63)
Chiropractic	3 (5.66)	3 (3.37)			6 (4.32)
Apitherapy	3 (5.66)	11 (12.36)			14 (10.07)
Mesoterapi	2 (3.77)	3 (3.37)			5 (3.60)
Acupuncture	2 (3.77)	5 (5.62)			7 (5.04)
Phytotherapy	1 (1.89)	14 (15.73)			15 (10.79)
Reflexology	1 (1.89)	1 (1.12)			2 (1.44)
Homeopathy	0	1 (1.12)			1 (0.72)
Other practices					
Medication use					
(With the advice of non-physician)			25 (35.21)	24 (51.06)	49 (35.25)
*Herbal products			33 (46.48)	16 (34.04)	49 (35.25)
Bone-setter			4 (12.68)	5 (10.64)	9 (6.47)
Religious applications			9 (5.63)	2 (4.26)	11 (7.91)

*Herbal Products: İndividual use of plants outside the scope of phytotherapy. TCM: Traditional and complementary medicine.

tion with the advice of non-physicians, and religious practices (n=33 (46.48%), n=25 (35.21%) and n=9 (5.63%), respectively) among the other practices (Table 2). In addition, it was determined that the participants who received TCM and other practices group mostly preferred to have a single application (n=66, 71.2%).

The body regions on which the practices were most frequently applied included low back (n=52, 37.4%), back (n=23, 16.5%), knee (n=16, 11.5%), neck (n=15, 10.8%) and shoulder (n=14, 10.1%). For the TCM group, this ranking was as follows: low back (n=16, 39.0%), back (n=9, 22.0%), and knee (n=6, 14.6%). On the other hand, this ranking for the TCM-other practices group was low back (n=22, 37.9%), back (n=13, 22.4%), and ankle-foot (n=7, 12.1%). In the group that received non-medical practice, practices were observed to be applied for waist

TABLE 3: Application areas.

	TCM n=41	TCM and other practices n=58	Other practices n=40	Total n=139
Body segment	n (%)	n (%)	n (%)	n (%)
Low back	16 (39.0)	22 (37.9)	14 (35.0)	52 (37.4)
Neck	5 (12.2)	7 (12.1)	3 (7.5)	15 (10.8)
Back	9 (22.0)	13 (22.4)	1 (2.5)	23 (16.5)
Shoulder	2 (4.9)	4 (6.9)	8 (20.0)	14 (10.1)
Knee	6 (14.6)	4 (6.9)	6 (15.0)	16 (11.5)
Foot-ankle	1 (2.4)	7 (12.1)	3 (7.5)	11 (7.9)
Hand-wrist	0	0	5 (12.5)	5 (3.6)
Elbow	0	1 (1.7)	0	1 (0.7)
Low back-neck	1 (2.4)	0	0	1 (0.7)
Low back-knee	1 (2.4)	0	0	1 (0.7)

TCM: Traditional and complementary medicine.

TABLE 4: Application history.

	TCM n=41 n (%)	TCM and other practices n=58 n (%)	Other practices n=40 n (%)	Total n=139 n (%)
Payment status				
No	21 (51.2)	33 (56.9)	14 (35.0)	68 (48.9)
Yes	20 (48.8)	25 (43.1)	26 (65.0)	71 (51.1)
Reason for application				
Long waiting time at the hospital	7 (17.1)	12 (20.7)	10 (25.0)	29 (20.9)
Fear of doctor/hospital	2 (4.9)	9 (15.5)	6 (15.0)	17 (12.2)
The thought that it will be less painful	7 (17.1)	11 (19.0)	3 (7.5)	21 (15.1)
Belief that it would provide more benefits	17 (41.5)	19 (32.8)	12 (30.0)	48 (34.5)
Close to residence	8 (19.5)	7 (12.1)	9 (22.5)	24 (17.3)
Health status after the application				
No change	8 (19.5)	14 (24.1)	13 (32.5)	35 (25.2)
Better	32 (78.0)	42 (72.4)	25 (62.5)	99 (71.2)
Worse	1 (2.4)	2 (3.4)	2 (5.0)	5 (3.6)
Satisfaction with the application				
No	6 (14.6)	11 (19.0)	11 (27.5)	28 (20.1)
Yes	35 (85.4)	47 (81.0)	29 (72.5)	111 (79.9)
Would recommend the application to someone else				
No	9 (22.0)	14 (24.1)	19 (47.5)	42 (30.2)
Yes	32 (78.0)	44 (75.9)	21 (52.5)	97 (69.8)

TCM: Traditional and complementary medicine.

(n=14, 35%), shoulder (n=8, 20.0%) and knee (n=6, 15%) (Table 3).

Most of the individuals (51.1%) paid for these practices. It was observed that the most common reason for preferring these practices was the belief that these practices would provide more benefits than medical treatment (34.5%). In addition, the rate of the individuals who reported a better health status after the application in all 3 groups (TCM; 78.0%, other practices; 62.5%, TCM-other practices; 72.4%), the rate of those who were satisfied with the treatments (TCM; 85.4%, other practices; 72.5%, TCM-other practices; 81.0%) and the rate of those who denoted that they would recommend the application to any one else (TCM; 78.0%, other practices; 52.5%, TCM other practices; 75.9%) were high (Table 4).

DISCUSSION

In our study, it was determined that the majority of people with musculoskeletal problems (62.6%) applied TCM and other practices together, and the reason for the application was musculoskeletal problems at a high rate (72.8%). The most preferred practices were cupping therapy (43.8%), use of herbal products (35.2%), use of medications without the advice of a physician (35.2%) and osteopathy (13.6%). The body regions on which the practices were most commonly applied appeared to be low back (37.4%) and back (16.5%). This study has also other important results. The participants stated that they received TCM and other practices because they found it more beneficial than medical practices (34.5%). They also denoted that their health status after the practices was better (71.2%), they were satisfied with the practices (79.9%) and that they could recommend these practices for other people (68.5%). In addition, more than half of the respondents paid for these practices (69.8%).

In recent studies conducted in Türkiye, the frequency of receiving TCM was found to vary between 14.8% and 59.1%.[11-27] In the patients who applied for the physical therapy outpatient clinic, the rates were detected to be 32.1% and 35.5% in 2 different studies.[28,29] In our study, the frequency of referral to TCM and other practices (62.6%) was encountered to be slightly higher than the literature. This difference may

be resulting from the fact that our study was conducted in a tertiary health institution and in the city centre.

According to the studies in Türkiye, the practices that patients are mostly familiar with and they prefer to use are cupping therapy, leech therapy and phytotherapy practices.[30] In our study, the rate of preference for the same practices was found to be similarly high. In our study, it was also determined that osteopathy practice is one of the most preferred practices. This may be due to the increasing interest of physicians and newly graduated physiotherapists towards osteopathy education in recent years in Türkiye.

In our study, it was discovered that practices were applied to the regions such as low back, back, knee, neck, shoulder for the related problems, respectively. Also Aydil et al. have stated that TCM practices were found to be most commonly performed for back, waist and neck regions, respectively.[28] Odabaş et al. have found out in their study in the field of family medicine that the most common reason for patients to undergo TCM practice was muscle and joint pain.[26] Oral et al. have determined in their research conducted in the family health center that the accompanying pain complaint to any disease was the main reason for preferring TCM practices.[31]

In our study, most of the participants stated that they benefited from TCM and other practices, their health status was improved after these practices, they were satisfied with these practices and they could recommend these practices for other people. When we reviewed the articles in the literature, the level of satisfaction with TCM practices was detected to be high in the studies conducted in Türkiye similarly with our study. While the rate of the patients who reported benefits from the practices ranged between 68.0%-75.0%; it was denoted in the study of Aydil et al. that 71.4% of participants evaluated these practices to be beneficial.[11,24,28,29,31] In the study of Göçer and Balbaloğlu, 95.4% of the participants who have been using TCM have stated that they would continue to receive these practices.[29]

Our results indicate that demand for TCM and other practices will probably continue at in the future. Although our results indicate that the demand for TCM and other applications will probably continue in the future, it should be noted that the data we obtained are based on recall.

Ulusoy and Keskin have investigated the purchasing status of the patients to receive TCM practices in their research and they figured out that the rate of the individuals who made payment was 87.1%.[27] In our study, more than half of the participants made payment for these practices (%53.4). In our study, the charges paid for these practices were not questioned because of taxation issues but investigation of this subject will be probably important for individuals to receive health services within the scope of TCM in a healthier and safer way in the future studies.

In our study, it was determined that the most common rationale to prefer TCM and other practices was the expectation to obtain more benefits compared with medical practices. The rationales such as believing in the practice more and expectation of achieve more healthy benefits were reported among the reasons for preferring to receive TCM in the research.[5,11,25,28,29]

In our study, the educational status of the subjects who demanded to undergo TCM or other practices was also questioned. It was found out that university graduates took the first place followed by primary school graduates and high school graduates. This outcome may be resulting from having more knowledge about different practices as the level of education increases.[28,31] The increased use of TCM parallelly with increased education level was encountered in different studies.[11,26] On the other hand, there are also studies which have reported that using TCM or other practices as the first treatment option and preferring these practices more intentionally are not related with education level.[5,24,25,27]

In our study, it was observed that the rate of participants using TCM or other applications was high. It was determined that these individuals were satisfied with the application methods and could recommend these applications to other subjects. In addition, more than half of the participants stated that they paid for these applications. The satisfaction level in our

study was high, but it should be remembered that our study was a cross-sectional study and our data were based on recall. In our study, participants were asked whether they used bee products, homeopathic medicines, or herbal products to help treat their illness or relieve pain, but the products they used were not recorded. As the authors, we see this as a limitation of our study.

CONCLUSION

Today, TCM applications are used to cope with musculoskeletal problems. Most of the participants stated that they were satisfied with these applications. We think that these findings are especially important for health professionals who are interested in musculoskeletal health. We think that health professionals, especially physiotherapists, should increase their basic knowledge about TCM applications that can be applied in addition to conservative treatment and plan new research. Thus, individuals with different health-seeking behaviors can receive health services in a healthier and safer way. In addition, the findings we obtained can inspire educators in the training of health professionals and the creation of curriculum content.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Hayriye Kul Karaali, Göksel Çılga, Özlem Özcan;* ***Design:*** *Hayriye Kul Karaali, Göksel Çılga, Özlem Özcan;* ***Control/Supervision:*** *Hayriye Kul Karaali, Özlem Özcan;* ***Data Collection and/or Processing:*** *Hayriye Kul Karaali, Göksel Çılga, Özlem Özcan;* ***Analysis and/or Interpretation:*** *Hayriye Kul Karaali, Göksel Çılga, Özlem Özcan;* ***Literature Review:*** *Hayriye Kul Karaali, Göksel Çılga;* ***Writing the Article:*** *Hayriye Kul Karaali, Göksel Çılga;* ***Critical Review:*** *Hayriye Kul Karaali, Göksel Çılga, Özlem Özcan;* ***References and Fundings:*** *Hayriye Kul Karaali.*

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