



Research Article/Özgün Araştırma

Evaluation of the use and awareness of herbal products of the patients applying to the faculty of dentistry

Diş hekimliği fakültesine başvuran hastaların bitkisel ürün kullanımı ve farkındalıklarının değerlendirilmesi

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**Abstract**

**Aim:** This study aims to investigate the awareness and knowledge level of patients about the use of herbal products in dentistry.

**Materials and Methods:** Present study was carried out on a total of 200 patients who applied to the Faculty of Dentistry Oral and Maxillofacial Surgery Clinic in 2020. Data were collected using questionnaires. Herbal product usage levels, attitudes towards phytotherapy and general opinions of the patients were evaluated.

**Results:** Herbal products used for oral and dental health were found to be at lower levels than herbal products used in the prevention or treatment of other diseases. The patients preferred these products for halitosis and wounds. The most commonly used plants for oral health were mint, clove, thyme and black mulberry.

**Conclusion:** The results of present study showed that patients are willing to use herbal products. This result suggests that it would be beneficial for dentists to integrate phytotherapy into treatment protocols.

**Keywords:** Phytotherapy; Herbal products; Dentistry; Patients; Knowledge level.

**Öz**

**Amaç:** Bu çalışmanın amacı diş hekimliğinde bitkisel ürün kullanımı hakkında hastaların farkındalık ve bilgi düzeyini araştırmaktır.

**Gereç ve Yöntem:** Çalışmamız 2020 yılında Diş Hekimliği Fakültesi Ağız Diş ve Çene Cerrahisi Kliniğine başvuran toplam 200 hasta üzerinde gerçekleştirildi. Veriler anket formları kullanılarak toplandı ve hastaların bitkisel ürün kullanım düzeyleri, fitoterapiye yönelik tutumları ve genel görüşleri değerlendirildi.

**Bulgular:** Ağız ve diş sağlığı için kullanılan bitkisel ürünlerin diğer hastalıkların önlenmesi veya tedavisinde kullanılan bitkisel ürünlere göre daha düşük düzeylerde olduğu tespit edildi. Hastalar ağız ve diş sağlığına yönelik bu ürünleri daha çok ağız kokusu ve yaraları için tercih etmişlerdir. Ağız sağlığı için en çok kullanılan bitkiler sırasıyla nane, karanfil, kekik ve karadut olarak belirlendi.

**Sonuç:** Çalışmamızın sonuçları, hastaların bitkisel ürünleri kullanmaya istekli olduklarını göstermektedir. Bu sonuç, diş hekimlerinin fitoterapiyi tedavi protokollerine entegre etmelerinin faydalı olacağını göstermektedir.

**Anahtar Kelimeler:** Fitoterapi; Bitkisel ürünler; Diş hekimliği; Hastalar; Bilgi düzeyi.

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## Introduction

Phytotherapy, which means the treatment of diseases with herbs and herbal products, is one of the most preferred traditional and holistic treatment methods by patients. Treatment with plants is as old as human history and plants have been the source of the discovery of many synthetic drugs. Despite the advances in modern medicine and synthetic drug technology, herbs are still one of the most preferred treatment options for patients. Today, the interest of patients and doctors in more natural and harmless treatment options makes herbal products more interesting.

Generally, patients find herbal products safer and prefer these products to be therapeutic or preventive in many diseases without doctor's advice. However, herbal products are not always safe, and many plants have toxic effects and drug interactions.<sup>1</sup> Improper use of herbal products without the knowledge and advice of a doctor can cause serious problems, especially in patient groups treated with different drugs. In addition, the availability of many herbal products that do not meet the quality standards determined by the authorities poses a threat to patients. Most of these types of products either do not contain the correct plant in sufficient amount or contain synthetic drugs or are contaminated due to their production under inappropriate conditions. In this case, the patient is harmed instead of benefit.<sup>2</sup> In order to prevent this negative situation, both patients and doctors should be conscious about the rational use of herbal products.

Due to the recent increase in the number of patients using herbal products, it is inevitable that physicians will encounter more frequently patients using these products in their daily practice. Patients prefer more natural products because they avoid the side effects of many drugs. This situation has made phytotherapy popular in dentistry as in all branches of medicine. For this reason, dentists should be better equipped in phytotherapy and have sufficient knowledge about the interactions with existing treatments and side effects of herbal products.<sup>3,4</sup> Integrative dentistry based on the preventive

therapeutic model has made phytotherapy more preferred by both patients and dentists over time.<sup>5</sup> However, this situation requires an increase in the current level of knowledge for patients and dentists on the correct use of herbal products. For this purpose, patients should share their use of herbal products with their doctor. At the same time, doctors should provide them the necessary information on this subject.

In the literature there are studies examining the use of traditional medicine and herbal products in many branches. However, there is no study examining the use of herbal products on patients applying to dentistry clinics. Therefore, in present study, it was aimed to evaluate the patients' herbal product usage and preferences in terms of oral and dental health which is an integral part of general health. In addition, within the scope of present research, the use of herbal products, the frequency of use, the damage from the product and the sources of information were investigated in patients who applied to clinic for treatment.

## Material and Methods

### The type of the research

This research is a descriptive and cross-sectional study.

### The samples of the research

The study included 200 literate patients who applied to the Faculty of Dentistry, Department of Oral and Maxillofacial Surgery with various dental complaints. Before the study, the patients were informed about the purpose of the study and that participation in the study was voluntary. Subsequently, informed consent form was received from the patients that they would participate in the study.

### Data collection tools

Before starting the study, a preliminary research was conducted on a group of independent volunteers for the patients to understand the questionnaire forms more easily and clearly. Thus, the necessary changes were made on the surveys and the survey forms were finalized. The

questionnaire forms were prepared under four different headings to examine the demographic information of the patients, the use of herbal products for medicinal purposes and the use of herbal products for dentistry and the attitudes and behaviors about herbal products. All these questionnaires were distributed to patients before their treatment and collected after they were filled. In the study, socio-demographic information such as age, gender, educational status, occupation, place of residence, marital status, income status of the patients, and descriptive information about their general health conditions such as systemic disease, drug use, smoking or alcohol use, and how often they visited the dentist were recorded. In addition, with the help of various questions, the use of herbal products and their general attitude towards phytotherapy were evaluated.

### Statistical analysis

Statistical Package for the Social Sciences (SPSS) version 25.0 statistical package program was used for statistical analysis of the data. Descriptive statistical methods were used to determine the demographic characteristics of the participants and the frequency of their responses to the questionnaires. In addition, descriptive statistical methods were used in the SPSS program to calculate the mean ages of the volunteers.

### The ethical aspect of research

This study was conducted by obtaining the necessary approval from the Non-Interventional Research Ethics Committee

(Decision number: 2019/7-18) And in accordance with the 2008 Declaration of Helsinki principles.

### Results

97 (48.5%) of 200 patients included in the study were male; 103 of them (51.5%) were women. The age of the patients ranged from 18 to 54 and the mean age was  $27.9 \pm 7.28$ . The socio-demographic characteristics of the patients were examined and it was found that 68% (n:136) of them were university graduates, 23.5% did not work professionally, 13% were housewives, and the rest of the patients were mostly students. The largest percentage of patients (75.5%) lived in provinces, the proportion of married and single patients was close to each other, 37% (n=74) had children, 30.5% (n=61) had insufficient income found to be.

When examined in terms of general health conditions, it was found that 91% (n=182) of the patients were systemically healthy, 13.5% (n=27) of them were using chronic medication. It was found that 38% of the patients (n=76) have been smoking and 11% (n=22) of them have been using alcohol. It was determined that 8.5% (n=17) of the patients visited the dentist every three months, 12% (n=24) every six months, and 15.5% (n=31) once a year. 64% of the patients (n=128) were found to visit the dentist only when they had complaints. The distribution of all these socio-demographic and general health information of the patients is given in Table 1 in detail.

**Table 1.** Distribution of patients according to their demographic information

Demographic features		n	%
<b>Gender</b>	Male	97	48.5%
	Female	103	51.5%
	Total	200	100%
<b>Age range / Mean age</b>		18-54/27.9±7.28	
<b>Educational status</b>	Primary education	17	8.5%
	High school	38	19%
	University	136	68%
	Master	9	4.5%
<b>Job</b>	Unemployed	47	23.5%
	Housewife	26	13%
	Self-employment	45	22.5%
	Student	82	41%

<b>Residential area</b>	City	151	75.5%
	District	36	18%
	Village	13	6.5%
<b>Marital status</b>	Married	91	45.5%
	Single	107	53.5%
	Divorced	2	1%
<b>Income status</b>	Enough	67	33.5%
	Partly enough	72	36%
	Insufficient	61	30.5%
<b>Systemic disease</b>	Yes	18	9%
	No	182	91%
<b>Drug use</b>	Yes	27	13.5%
	No	173	86.5%
<b>Smoking</b>	Yes	76	38%
	No	124	62%
<b>Alcohol</b>	Yes	22	11%
	No	178	89%
<b>Frequency of visits to the dentist</b>	Quarterly	17	8.5%
	Once in a six month	24	12%
	Once a year	31	15.5%
	If have a complaint	128	64%

While 54.5% (n: 109) of the patients thought that herbal products were generally beneficial; 31% (n: 62) of them stated that they were undecided about this issue and 14.5% of them did not agree with this idea. 51% (n: 102) of the patients stated that they used herbal products and thought that these

products were good for diseases. It was observed that these products were used most frequently for treatment (51%), protection (45.1%), relief (32.3%), support (29.4%) and other (7.8%) purposes, respectively. It was observed that 49% (n:98) of the patients did not use these products (Table 2).

**Table 2.** The use of herbal products for medicinal purposes of patients

<b>Herbal products are generally beneficial</b>	<b>n, (%)</b>
Disagree	29 (14.5%)
Undecided	62 (31%)
Agree	109 (54.5%)
<b>Have you used any herbal products before?</b>	<b>n. (%)</b>
Yes	102 (%51)
No	98 (%49)
<b>For what purpose did you use the herbal product? *</b>	<b>n. (%)</b>
<i>Treatment</i>	52 (51%)
Dermatological (skin diseases or cosmetics)	32
Hypertension	4
Diabetes	8
Kidney diseases	0
Gynecological diseases	8
<i>Supportive</i>	30 (29.4%)
Slimming	22
Aphrodisiac	8
<i>Protection from diseases (common cold, flu)</i>	46 (45.1%)
<i>Relaxation (Sedative)</i>	33 (32.3%)
<i>Others</i>	8 (7.8%)

\* Multiple answers were given.

Patients who stated that they used herbal products for medicinal purposes were also evaluated in terms of the medicinal plants they used. The most commonly used plants are linden (54%), sage (42%),

black mulberry (39.5%), carob (34%), lemon and green tea (33%), mint (32%), lemon + linden (30.5%), thyme and garlic (30%), black elderberry and parsley (28%) and ginger (26%) (Table 3).

**Table 3.** Herbal products used for medicinal purposes and their percentage distributions \*

Herbal products (n (%))							
<b>Hawthorn</b>	16 (8%)	<b>Artichoke</b>	2 (1%)	<b>Carob</b>	68 (34%)	<b>Fennel</b>	20 (10%)
<b>Anise</b>	20 (10%)	<b>Apple vinegar</b>	50 (25%)	<b>Rosehip</b>	16 (8%)	<b>St. John's Wort</b>	26 (13%)
<b>Sage</b>	84 (42%)	<b>Gelder-rose</b>	0 (0%)	<b>Bitter melon</b>	2 (1%)	<b>Senna</b>	21 (10.5%)
<b>Juniper</b>	8 (4%)	<b>Ginseng</b>	29 (14.5%)	<b>Lemon</b>	66 (33%)	<b>Sumac</b>	29 (14.5%)
<b>Aloe vera</b>	28 (14%)	<b>Ginkgo biloba</b>	12 (6%)	<b>Lavender</b>	24 (12%)	<b>Garlic</b>	60 (30%)
<b>Calendula</b>	6 (3%)	<b>Rose</b>	36 (18%)	<b>Linden- lemon</b>	61 (30.5%)	<b>Onion</b>	14 (7%)
<b>Lady's mantle</b>	7 (3.5%)	<b>Jujube</b>	0 (0%)	<b>Lemon+garlic</b>	16 (8%)	<b>Cinnamon</b>	22 (11%)
<b>White cabbage</b>	11 (5.5%)	<b>Chaste tree</b>	7 (3.5%)	<b>Parsley</b>	56 (28%)	<b>Grape seed</b>	19 (9.5%)
<b>Almond oil</b>	36 (18%)	<b>Nettle</b>	8 (4%)	<b>Miswak</b>	47 (23.5%)	<b>Blueberry</b>	13 (6.5%)
<b>Okra seed</b>	4 (2%)	<b>Linden</b>	108 (54%)	<b>Parsley + walnut</b>	7 (3.5%)	<b>Green tea</b>	66 (33%)
<b>Walnut</b>	10 (5%)	<b>Fig</b>	24 (12%)	<b>Corn tassel</b>	11 (5.5%)	<b>Turmeric</b>	36 (18%)
<b>Yarrow</b>	6 (3%)	<b>Swedish bitter</b>	1 (0.5%)	<b>Parsley + quince</b>	5 (2.5%)	<b>Ginger</b>	52 (26%)
<b>Black seed</b>	44 (22%)	<b>Clove</b>	37 (18.5%)	<b>Peppermint</b>	64 (32%)	<b>Olive leaf</b>	17 (8.5%)
<b>Sycamore leaves</b>	4 (2%)	<b>Topped Lavender</b>	6 (3%)	<b>Peppermint-lemon</b>	48 (24%)		
<b>Fenugreek</b>	3 (1.5%)	<b>Black elderberry</b>	56 (28%)	<b>Pomegranate</b>	36 (18%)		
<b>Dill</b>	42 (21%)	<b>Cherry stalk</b>	32 (16%)	<b>Lemon balm</b>	33 (16.5%)		
<b>Laurel</b>	35 (17.5%)	<b>Flax seed</b>	12 (6%)	<b>Chamomile</b>	36 (18%)		
<b>Mulberry</b>	79 (39.5%)	<b>Thyme, thyme oil</b>	60 (30%)	<b>Sweet basil</b>	15 (7.5%)		

71.6% (n:73) of 102 patients who stated that they used any herbal product for medicinal purposes stated that these products were beneficial; 28.4% (n:29) stated that the product they used was not beneficial. In addition, 53.9% (n:55) of the patients stated that herbal products treated their pain or diseases, while 46.1% (n:47) of the patients did not. In addition, 96.1% (n:98) of the patients stated that they did not see any harmful effects after use, and 3.9% (n=4) stated that they saw harmful effects after use (Table 4).

61.8% (n=63) of the patients using herbal products stated that they researched on herbal products and phytotherapy before using. The patients stated that they obtained information about herbal products from the family-relative circle of 90.5% (n=57), from the media communication sources 42.8% (n=27), and from the circle of friends

23.8% (n=15), respectively. The number of people who get information through pharmacists is at a very low level of 9.5% (n:6) (Table 4).

It was determined that 56.8% (n=58) of the patients using herbal products used these products without consulting a doctor. Upon this, all patients were asked whether they would like to receive consultancy service on phytotherapy. It was seen that only 12% (n:24) of the patients wanted to receive this support, 50.5% (n:101) did not want this support, and 37.5% (n:75) were undecided about this issue. It was determined that the patients also wanted to receive this counseling service from doctors (68%), pharmacists (27.5%) and assistant healthpersonnel (4.5%), respectively (Table 5).

**Table 4.** Attitudes of the patients after using phytotherapy and herbal products and sources of information.

<b>Did you benefit from using herbal products?</b>	<b>n (%)</b>
Yes	73 (71.6%)
No	29 (28.4%)
<b>Has the herbal product you used cured the existing disease?</b>	<b>n (%)</b>
Yes	55 (53.9%)
No	47 (46.1%)
<b>Did you suffer any damage after use?</b>	<b>n (%)</b>
Yes	4 (3.9%)
No	98 (96.1%)
<b>Have you done research before using herbal products?</b>	<b>n (%)</b>
Yes	63 (61.8%)
No	39 (38.2%)
<b>Information resources *</b>	<b>n (%)</b>
Family-relative	57 (90.5%)
Media-communication resources	27 (42.8%)
Friends	15 (23.8%)
Herbalists	11 (17.5%)
Health personnel	8 (13%)
Pharmacist	6 (9.5%)

\* Multiple answers were given

**Table 5.** Patients' approaches to rational use of phytotherapy.

<b>Consulting a doctor before use</b>	<b>n (%)</b>
Yes	44 (43.1%)
No	58 (56.8%)
<b>Would you like to receive consultancy on herbal products?</b>	<b>n (%)</b>
Yes	24 (12%)
No	101 (50.5%)
Undecided	75 (37.5%)
<b>Who should provide consultancy services on herbal products?</b>	<b>n (%)</b>
Doctors	136 (68%)
Pharmacists	55 (27.5%)
Other Health Personnel	9 (4.5%)
Herbalists	0 (0%)

In addition to all these medical uses, the use of herbal products for oral and dental health was also investigated and it was found that only 19% (n: 38) of all patients preferred herbal products. It was determined that patients using herbal products for oral and dental health most frequently used for problems such as bad breath (76.3%), oral aphthae (63.2%), bleeding gums (50%) and toothache (36.8%), respectively. It was found that they used it less frequently for sensitivity and teeth whitening. The plants most

frequently used by patients for all these purposes are mint (81.6%), clove (73.7%), thyme (65.8%), black mulberry (55.3%), green tea (50%) and sage (39.5%) was found to be present. Less frequently, it was found that they used lemon, apple cider vinegar, cinnamon, miswak and ginger (Table 6).

Finally, the attitude evaluations of all patients regarding phytotherapy and herbal treatment products are shown in detail in Table 7.

**Table 6.** Phytotherapy and herbal product use of patients for oral and dental health

<b>Have you used herbal products for your oral and dental health?</b>	<b>n (%)</b>
Yes	38 (19%)
No	162 (81%)
<b>Purpose of usage *</b>	<b>n (%)</b>
Halitosis	29 (76.3%)
Aphthous ulcer	24 (63.2%)
Bleeding gums	19 (50%)
Toothache	14 (36.8%)
Tooth Sensitivity	9 (23.7%)
Tooth bleaching	5 (13.2%)
<b>Most commonly used herbal products *</b>	<b>n (%)</b>
Peppermint	31 (81.6%)
Clove	28 (73.7%)
Thyme	25 (65.8%)
Mulberry (Black mulberry)	21 (55.3%)
Green tea	19 (50%)
Sage	15 (39.5%)
Lemon	9 (23.7%)
Apple Vinegar	9 (23.7%)
Cinnamon	7 (18.4%)
Miswak	5 (13.2%)
Ginger	3 (7.9%)

\* Multiple answers were given

**Table 7.** General attitude levels of patients about phytotherapy applications.

<b>Patients' attitudes and behaviors towards the use of herbal products</b>	<b>Disagree</b>	<b>Agree</b>	<b>Partly Agree</b>	<b>Undecided</b>
	<b>n. (%)</b>	<b>n. (%)</b>	<b>n. (%)</b>	<b>n. (%)</b>
I believe that herbal products will protect or cure diseases	6 (3%)	108 (54%)	76 (38%)	10 (5%)
Herbal products do not provide treatment but can only be supportive. Treatment is provided only with medicines	87 (43.5%)	24 (12%)	67 (33.5%)	22 (11%)
Herbal products have no harmful effects	76 (38%)	36 (18%)	60 (30%)	30 (15%)
Herbal products do not interact with drugs. They can be used together	90 (45%)	26 (13%)	20 (10%)	64 (32%)
The use of herbal products can be dangerous. as they will hinder existing drug therapy	62 (31%)	32 (16%)	64 (32%)	42 (21%)
Herbal products can be used as a last resort to diseases	113 (56.5%)	31 (15.5%)	34 (17%)	22 (11%)
I think it is worth trying herbal products before going to the doctor	78 (39%)	58 (29%)	44 (22%)	20 (10%)
Herbal products should not be used in the treatment of serious diseases.	82 (41%)	43 (21.5%)	46 (23%)	29 (14.5%)
I think that herbal products will treat and prevent diseases such as cancer.	30 (15%)	52 (26%)	55 (27.5%)	63 (31.5%)

Herbal products benefit in the treatment of oral and dental diseases	5 (2.5%)	125 (62.5%)	52 (26%)	18 (9%)
I believe that herbal products can be useful in preventive dentistry	8 (4%)	138 (69%)	36 (18%)	18 (9%)
I can recommend herbal sourced paste and mouthwash to those around me	10 (5%)	136 (68%)	40 (20%)	14 (7%)
I hesitate to use herbal products as they need to be subjected to more scientific experimentation	16 (8%)	106 (53%)	32 (16%)	46 (23%)
Herbal products should be sold only in pharmacies	28 (14%)	96 (48%)	58 (29%)	18 (9%)
Herbal products should be prescribed by doctors	28 (14%)	112 (56%)	42 (21%)	18 (9%)
If herbal products are prescribed by doctors like medicines. I prefer to be treated with herbal products	6 (3%)	127 (63.5%)	38 (19%)	29 (14.5%)
I find herbal products more expensive	30 (15%)	28 (14%)	73 (36.5%)	69 (34.5%)

## Discussion

In the literature, there are studies investigating the use of herbal products by patients in various medical branches and health problems. However, there is no study evaluating the use of herbal products in dentistry in terms of both oral and dental health and other medical purposes.

In a study evaluating the use of herbal products by adult individuals, it was stated that 54.5% of the patients who applied to herbal products had chronic diseases.<sup>6</sup> 9% of the patients participating in present study had a systemic disease and 13.5% of them had chronic drug use. The rate of systemic disease was found to be lower than the literature, as the participants in the survey consisted of a younger population.

In the study of Biçen et al. examining the use of herbal products in hypertensive patients, 61% of the patients stated that they believed that herbs healed the hypertension.<sup>7</sup> Similarly, in present study, 54% of the patients stated that they found herbal products useful in general, 31% of them were undecided about this and a small portion of them thought that these products were not beneficial.

51% of the patients participating in the study stated that they had used herbal products for protection from diseases or for therapeutic purposes. In the study conducted by Tulunay et al. with chronic

patients, the rate of using herbal products was 29%, and this rate was 53% in the study conducted by Biçen et al. with hypertension patients.<sup>7,8</sup> In the study conducted by Tuna et al. with cancer patients, the use of herbal products was found to be 68.2%.<sup>9</sup> In these studies conducted in various clinics, it is seen that patients prefer herbal products to be therapeutic or preventive for a wide spectrum of diseases, from minor indications to major indications such as cancer. Most of these patients use herbal products with their current treatments and often do not share these preferences with their doctors.<sup>7</sup> This can negatively affect the treatment process of the patients, as well as lead to dangerous consequences in terms of drug interactions and side effects.

Considering herbal products completely safe and using them without the advice of a doctor or pharmacist may cause negative consequences. Because some plants may have toxic components and many herbal products also interact with drugs. Warfarin, which is used as an anticoagulant, has interactions with many known herbal products. 58 different plants have been identified that can alter blood hemostasis and anticoagulation by interacting with warfarin. Plants that show the greatest potential to interact with warfarin include herbs used for food or therapeutic purposes, such as garlic, ginger, grapefruit, ginkgo, St. John's wort, and ginseng.<sup>10</sup> It is known that the traditionally used licorice and St. John's Wort also interact with many drugs with different

mechanisms.<sup>11-13</sup> In addition, it should be kept in mind that essential oils such as clove, mint and thyme, which are frequently preferred for oral and dental health, can irritate the mucosa when applied directly.<sup>14</sup>

Pınar et al. stated in their study with patients who applied to the cardiology clinic that 56.3% of the patients used herbal products for hypertension and 34.2% for cardiovascular diseases.<sup>15</sup> In present study, 45.1% of the patients stated that they used herbal products for protection from diseases (colds, flu) and they were mostly used for dermatological diseases for therapeutic purposes. The presence of herbs such as sage and linden, which are used in conditions such as colds and flu, among the plants that are frequently used, confirms their usage characteristics. Therefore, it was thought that results of present study will contribute to meaningful and advanced studies.

One of the important issues investigated in studies conducted with patients is the state of benefiting from the herbal products used by patients. Tulunay et al. found in their studies that 68.3% of the patients using herbal products found it quite beneficial.<sup>8</sup> In the study conducted by Tuna et al. with cancer patients, it was found that 38 of 322 patients using herbal products had various side effects such as nausea and abdominal pain. However, most of the patients stated that they benefited and only 24% of those using herbal products shared this situation with their doctors.<sup>9</sup> Biçen et al. stated in their study with hypertension patients using herbal products that 72% of the patients benefited from these products. However, similarly, the majority of these patients (87%) did not inform their doctor about the herbal product they used.<sup>7</sup> In another study conducted by Biçen et al. with chronic kidney patients, it was determined that 37% of the patients benefited from herbal products. 78.4% of the participants, including patients with kidney transplantation, did not inform their doctors about the products they used.<sup>16</sup> In the study conducted by Pınar et al. with diabetic patients, it was stated that not all patients consult a doctor about using herbal products. In this study, patients stated that they were not harmed by herbal products.<sup>17</sup> In

present study, 71.6% of the patients using herbal products stated that they benefited from the product they used, and 53.9% stated that their diseases were treated with herbal products without using drugs. 3.9% of the patients using herbal products stated that they were harmed by the product they used, but the details of this damage were not specified. More detailed research is required on the side effects, drug interactions and harms of herbal products. In addition, similar to the literature, 56.8% of the patients in our study did not consult a doctor while using herbal products, and approximately half of the patients stated that they did not need to seek medical advice while using these products. The results of our study are compatible with the literature and, as seen in the studies, the majority of patients benefit from herbal products, while most patients did not receive a doctor's advice on this issue. Which herbal products with harmful effects are taken by patients, whether these products comply with the quality standards, whether they use them together with conventional medicines, and the details of the damage should be investigated separately with further studies.

Since the indications, contraindications, dose ranges, drug interactions, safety profile, frequency of side effects of many herbal products are not determined by clinical studies, their place in the treatment of many diseases is based on traditional usage data.<sup>18-20</sup> For this reason, it is necessary to raise awareness of both patients and doctors in order to provide the best treatment conditions and to prevent possible damages. It is extremely important for doctors to have comprehensive training in phytotherapy, to have sufficient knowledge and skills in terms of increasing effectiveness in treatment and preventing unwanted results.

One of the important issues regarding the use of herbal products is from which sources patients learn about these products. In general, it is observed that patients do not consult their doctors about this issue. In our study, when the patients were asked if they did any research before using herbal products, 61.8% of the patients stated that they did research. In the study conducted by Biçen et

al., 83% of the patients using herbal treatment stated that they used the product without any research on the product. Most of these patients indicated sources of information about the herbal product they used were neighbors, relatives, friends or television and radio.<sup>7</sup> Similarly, in the study of Pinar et al. with patients who came to the cardiology clinic, it was stated that they used herbal products at the suggestion of their relatives, friends, neighbors.<sup>15</sup> The rate of patients using it by being affected by the visual media was 33.3%, and the rate of use with the doctor's advice was 3.5%.<sup>15</sup> Similarly, in our study, most of the patients (90.5%) stated that they obtained information from their family and relatives. At the same time, the rate of obtaining information from the media and herbalists was found to be higher than the pharmacists and doctors, who should be the main consultation center in this field.

The recent popularity of herbal products has increased the marketing and advertising of these products. Especially many herbal products are promoted with exaggerated promises such as a definitive solution to the disease, 100% harmless, natural treatment without side effects.<sup>21</sup> Particularly serious patient groups such as cancer and people with chronic diseases such as diabetes, hypertension, depression and rheumatism and who need to use drugs continuously become the target audience of these advertisements.<sup>22</sup> The popularity of herbal products often causes people who have no education in the field to turn to this field and these people pose a serious threat to patients by producing or marketing herbal products. Studies conducted show clearly the negative effects of the media or social networks in this area.<sup>22-24</sup> For this reason, stricter regulations should be introduced by the relevant authorities in the sale and advertisements of herbal products with therapeutic properties.

In our study, when the patients were asked whether they would like to receive consultancy about herbal products, about half (50.5%) stated that they did not want to receive counseling, while some of the patients were undecided about this issue (37.5%), others (12%) stated that they wanted to get

counseling. However, when asked who should give counseling to patients regarding herbal products, most of the patients think that doctors (68%) and pharmacists (27.5%) should provide them. These results actually suggested that if the patients were given professional consultancy before using herbal products, the number of people using the products without consulting a doctor could decrease. More studies are needed to support this prediction.

When we questioned the use of herbal products for oral and dental health, it was found that 19% of the patients had used herbal products for this purpose before. Similarly, in the study conducted by Abebe et al. with dentistry patients, this rate was found to be 12.6%.<sup>25</sup> In the study of Yoon et al., it was stated that 65% of the patients who applied to the dentistry faculty used herbal products.<sup>26</sup> However, in these studies, the use of herbal products in general was questioned and no specific question was asked about their use for oral and dental health.

In our study, the majority of the patients stated that they believed that herbal products would protect or cure diseases. Approximately half of the patients disagreed with the opinion that treatment can only be provided with medicines and herbal products can only be supportive. When we evaluate these opinions, it is seen that patients generally find herbal products beneficial.

Soner et al. found in their study that 53.2% of participants believed herbal remedies were harmless, had fewer side effects, or were completely safe.<sup>27</sup> In our study, 38% of the patients did not agree with the view that herbal products do not have harmful effects, but some of the remaining patients partially agreed with this view or remained undecided. These results actually suggest that patients do not have enough information about toxic plants or their toxicity in inappropriate use. Similarly, in the present study 31% of the patients disagreed with the opinion that herbal products can affect the process negatively or prevent the treatment by changing the effectiveness of the treatment while receiving any treatment. In addition, some of the patients disagree with the opinion that

medicines and herbal products may interact, or their indecisive opinions indicate that there is a deficiency in this regard.

41% of the patients disagreed with the opinion that herbal products should not be used in the treatment of serious diseases. 26% of the patients stated that herbal products can be used as therapeutic or preventive in diseases that involve long treatment processes such as cancer. Some of the patients partially agreed with this view and some remained undecided. This result suggests that some patients consider herbal products quite safe and ignore possible side effects. However, the use of complementary therapies and herbal products in such patient groups should be used under the supervision of a doctor.

Mutlu et al. stated in their study on cancer patients that 62% of the cases used complementary and alternative medicine methods.<sup>28</sup> In another study conducted on cancer patients, herbal products were reported to constitute 95% of complementary and alternative medicine methods and *Urtica dioica* (nettle) was specified as the most commonly used herbal product.<sup>29</sup> In our study, while the patients were positive about the use of herbal products in cancer treatment, approximately 30% of the patients stated that they partially or completely agreed with the opinion that herbs could be used as a last resort.

Considering the patients' attitudes towards the application of herbal products in the field of dentistry, most of the patients expressed a positive opinion. Only 2.5% of the patients disagreed with the opinion that herbal products would benefit oral and dental diseases. Other patients think that herbal products will be useful in dental diseases. In addition, they found herbal products useful in preventive dentistry, and they gave a very positive opinion about the use of herbal-based paste or mouthwash. These results show that dentists should be better equipped with phytotherapy practices and herbal products as in other branches. The results of our study show that patients are willing to use more natural and holistic treatments in the treatment of oral and dental diseases. This shows that it will be beneficial for dentists to

integrate natural treatment methods and herbal products into treatment protocols.

### **Limitation of the study**

The patients' use of herbal products and their attitudes towards the products were questioned. Although results have been obtained regarding which plants are used frequently, it has not been asked which plant they use for which diseases. In addition, the study covers a limited patient population. For this reason, it should be investigated which plants are preferred for which disease in a larger patient population. In addition, more comprehensive studies should be conducted examining the benefit and harm profiles of herbal products.

### **Conclusions**

In our study, it was observed that patients who applied to the faculty of dentistry had a positive approach towards phytotherapy and herbal products. Considering to the increasing popularity of phytotherapy and other holistic treatment approaches, it clearly shows that dentists may encounter patients using herbal products while performing their profession.

It is very important for dentists to routinely ask patients about the use of herbal products during dental anamnesis and inform patients about the risks and benefits of these products to obtain better treatment results. In order to ensure that patients benefit from phytotherapy at an optimum level and to prevent damages that may occur as a result of their misuse, it will be beneficial to provide evidence-based training for doctors and dentists that will increase their basic knowledge and skill levels in phytotherapy.

### **Ethics Committee Approval**

Ethical permission was obtained from the Non-Interventional Research Ethics Committee in the province where the study was conducted (2019/7-18) and written permission was obtained from the institution. The research was conducted according to the principles of the Declaration of Helsinki.

### **Informed Consent**

Informed consent forms were obtained from all participants included in the study.

## Authors' Contributions

Conception – M.E., B.E.; Design – M.E., M.K., S.Y.; Supervision – M.K., S.Y.; Materials – B.E.; M.K.; Data Collection and/or Processing- M.Y.K., B.E.; Analysis and/or Interpretation – M.E., B.E.; Literature Review – B.E., M.Y.K., M.E.; Writer – M.E., B.E.; Critical Review –M.K., S.Y.

## Conflict of Interest

No conflict of interest was declared by the authors.

## Financial Disclosure

No financial disclosure was declared by the authors.

## Statements

The results of this research have not been presented previously.

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