

To Determined Using of Herbal Product in Elderly People

Yaşlı Bireylerde Bitkisel Ürün Kullanımının Belirlenmesi

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ABSTRACT Objective: To determine the use of herbal supplements by old people. **Material and Methods:** This descriptive study was a cross-sectional study and conducted between December 30, 2016-March 01, 2017 in Eastern Turkey. Random samples of 185 older participants who agreed to participate in the study took part in structured interviews at geriatrics clinic of the hospital in Turkey. The data were collected from the geriatric individuals owing to a face-to-face interview guided by a questionnaire. The data were analyzed by using with number, percentage and chi-square test. **Results:** Of the 185 subjects (56.2% female), 15.7% (n=29) reported using at least one of the herbal supplement. The mean age of the individuals was 76.24±8.22 (min.63-max.98) years. The most commonly used herbal supplement were stinging nettle (13.8%) and black cummin oil (10.3%). No differences in demographic characteristics were found for users and non-users. A significant difference was found between users and non-users of plant products according to their place of residence, most of the users lived in the provincial capital. We found that herbal supplement use was higher among older women (69% of those who use herbal products are old female person). **Conclusion:** The study shown that 15.7% of old people have used herbal supplements. There is a need for extensive research on the use of plant products by older people.

Keywords: Culture; elderly; herbal product

ÖZET Amaç: Yaşlı bireylerde bitkisel ürün kullanımlarının belirlenmesidir. **Gereç ve Yöntemler:** Tanımlayıcı nitelikteki bu çalışma kesitsel bir çalışmadır ve Doğu Anadolu Bölgesi'nde 30 Aralık 2016-01 Mart 2017 tarihleri arasında gerçekleştirilmiştir. Çalışmaya katılmayı kabul eden 185 yaşlı katılımcı rastgele örneklem yöntemi ile Türkiye'deki bir üniversite hastanesininin geriatri kliniğinden seçilmiş ve yapılandırılmış görüşmelere katılmıştır. Veriler, geriatrik bireylerden bir anket formu ile yüz yüze görüşmelerle toplanmıştır. Veriler, sayı, yüzde ve ki-kare testi kullanılarak analiz edilmiştir. **Bulgular:** Bireylerin çoğu kadın (%56,2) olup, %15,7'si bitkisel takviyelerden en az birini kullandığını bildirmiştir. Bireylerin yaş ortalaması 76,24±8,22 (min.63-max.98) yıl idi. En çok kullanılan bitkiler ısırgan otu (%13,8) ve çörek otu yağı (%10,3) idi. Demografik özelliklerde, bitkisel ürün kullanan ve kullanmayanlar arasında fark bulunmadı. Bitkisel ürün kullananlar ve kullanmayanlar arasında yaşanan yere göre anlamlı bir fark bulunmuştur, bitkisel ürün kullanan bireylerin çoğu il merkezinde yaşamaktadır. Bitkisel ürün kullanımının yaşlı kadınlar arasında daha yaygın olduğunu tespit ettik (bitkisel ürünler kullananların %69'u yaşlı kadın kişilerdir). **Sonuç:** Çalışma, yaşlı insanların %15,7'sinin bitkisel takviyeleri kullandığını göstermiştir. Yaşlıların bitki ürünleri kullanımı hakkında kapsamlı bir araştırmaya ihtiyaç vardır.

Anahtar Kelimeler: Kültür; yaşlı; bitkisel ürün

In spite of developments in conventional treatments, the use of complementary and integrative medicine (CIM) is growing in the whole world. Various CIM methods have been used for different diseases such as liver disease, pain, diabetes, diabetic foot, cancer, hypertension and asthma, and in different age groups.¹⁻⁶ Complementary and integrative one commonly chosen type of CIM is the use of plant products. Plant products are gener-

ally believed to be more natural, harmless and effective, and for this reason their popularity is steadily increasing, and people are seen to be using plant products for many health problems, particularly chronic illnesses.^{7,8} However, alongside the expected positive effects, there are also reports which show that plant products are ineffective or even harmful.⁹⁻¹¹ The World Health Organization (WHO) has also emphasized that some herbal supplements are powerful and not as reliable as people believe them to be. It has also been reported that herbal supplements can be dangerous when taken in combination with modern conventional treatment.¹²

The use of herbal supplements is of greater importance in old people, in whom there are changes in drug absorption, dispersion, metabolism and excretion.¹³ A lot of evidence exists of high and rapidly growing herbal supplement use among the elderly in developed countries.^{14,15} Old people have a distinct position in the adult population because old adults are vulnerable and because their metabolic control systems are more vulnerable to rapid perturbations. Also, due to the onset of age-related disease occurring at this stage of life, they are more likely to be using multiple medications. Plant products which are often seen as harmless or beneficial can have significant toxic side effects when used with medical drugs. Their potency, actions, and toxicity can vary. They may contain various contaminants according to the climate, environment or soil conditions where they are grown.¹⁶ Especially, herbal supplements have been associated with abnormal liver enzymes or hepatitis.¹⁷ Herbal supplements are often overlooked as potential causes of hepatotoxicity because there is no comprehensive and reliable information among health professionals about the toxicity of many herbs.¹⁸ In addition, individuals do not disclose CIM use because they do not consider such information important, physicians do not ask, and patients think they may be misunderstood by traditionally trained physicians.¹⁹ Optimizing complementary and integrative medicine use in the elderly requires educating professionals and old people on what works, and what may interact with other drugs. Among older adults, excessive and inappropriate use of herbal supple-

ments and the high rate of not giving information about the use of herbs to the physicians have been recognized as a significant public health problem.¹⁸

It is thought that knowledge of the plant products which are widely used by old people will create awareness among health professionals, and will prevent old people from suffering harmful effects. The aim of this study was to determine the prevalence and types of herbal supplement usage among Turkish individuals over 65 years of age who live independently in the community.

MATERIAL VE METHODS

DESIGN

A descriptive cross-sectional survey design was used in the study.

RESEARCH SAMPLE

Data collection was conducted between December 30, 2016–March 01, 2017. The research was carried out at the geriatrics clinic of a hospital in Erzurum, Turkey. Elderly individuals using herbal supplements for at least six months, who were aged 65 or over and who agreed to participate were included in the study. Individuals who had communication disorders or major depression were excluded from the study.

The present study included 202 subjects aged ≥ 65 years. One hundred and ninety-two elderly people met the study criteria, but seven refused to participate. For this reason, the final sample consisted of 185 old people.

INSTRUMENT

The data were collected using a questionnaire based on a literature review.^{1,20,21} The questionnaire form was evaluated for content validity by two doctors and three nurses who were experienced in the field of internal medicine. A high level of agreement about the form was reported among the experts.

The form consisted of 34 questions about the socio-demographic characteristics (age, gender, marital status, annual income, level of education, living arrangements, chronic medical conditions,

etc.) of the individuals, their health/disease status and their use of herbal supplements. When the herbal supplements were described, patients were asked about their use of herbal supplements, the duration of use and their reasons for using them. Patients who acknowledged using herbal supplements were asked about the herbal supplement-related resources, the thoughts of the health professional, their expectations from the herbal supplement and whether any side effects or toxicity related to the treatment had occurred.²²

ETHICS

The study was approved by the Institutional Review Board of a Regional Teaching and Research Hospital Ethics Committee (Approval no: 2016/18-128). Information was given to all of the elderly people regarding the aim and the content of the study, and their verbal permission was obtained. The participants provided their informed consent in accordance with the Helsinki Declaration.

PROCEDURES

The data were collected by interview in the clinics by two researchers. Face-to-face interviews were conducted by the researchers. Filling out the form took 20 to 25 minutes for each person. Health status-related characteristics of the participant were obtained from participants' medical files.

DATA ANALYSIS

Data were analyzed using the SPSS 21 packet program for analysis. The analysis included descriptive statistics of the sociodemographic and health information (proportions). $p < 0.05$ was accepted as statistical significance. The data were evaluated using numbers, percentage means, standard deviations, and chi-square test.

The individuals were categorized as either herbal supplement users or non-users. Users of herbal supplements were defined as those who reported usage of at least one herbal supplement.

Descriptive statistics were used to describe demographic characteristics and frequency rates. Pearson's chi-square test was used for comparisons between users and non-users of herbal supplements.

RESULTS

Table 1 summarizes the socio-demographic characteristics of the study individuals. Their mean age was 76.25 ± 8.20 years (range: 65-98 years). A majority of the 185 individuals (56.2%) were females. About two-thirds of respondents had no formal education (69.7%) and a low income (62.7%). A large majority of the participants (94.6%) were married. About half (50.3%) were living in rural communities. Most of the participants (83.2%) had been previously diagnosed with at least one chronic health condition. Almost all of the participants (95.1%) were using a number of drugs at 5 or below (Table 1).

Table 1 shows the use of plant products by old people according to certain variables. It can be seen that there was no statistically significant difference in the use of plant products according to the age, marital status, educational level, profession, income level or perceived level of health of the old people. However, a significant difference was found between users and non-users of plant products according to their place of residence ($\chi^2=8.335$, $p=0.015$), most of the users lived in the provincial capital (Table 1).

Of the 185 subjects, 29 (15.7%) reported some herb supplement use (Table 2). Table 3 shows the plants which the old people preferred to use. It was determined that 65.5% of the old people used plant products singly, and that 34.5% of them used plant products in the form of a mixture. Also, 60% of those who used a mixture of plant products did not exactly know the contents of the mixture which they were using. Examining the route of application or use of plant products, it was seen that the plant products used by 10.3% of the old people were applied to the skin in the form of a cream, while 89.7% took them orally as a nutritional supplement (Table 2).

It was seen that 79.3% of those who used plant products found them beneficial, and that 58.6% of them used them to treat health problems. Also, 44.8% of the old people stated that the plant products which they used had been recommended by family members, and 43.8% said that they collected the plants themselves. Only 24.1% of the old peo-

TABLE 1: Use of herbal supplements according to some characteristics of old individuals.

Characteristics	Total (n=185)	User (n=29) X±SD	Nonuser (n=156) X±SD	t	p
Age (year)	76.25 ± 8.20	75.34±8.415	76.36±8.213	.183	=.545
		%	%	X²	p
Gender					
Female	104 (56.2%)	20 (69.0%)	84 (53.8%)	2.444	.118
Male	81 (43.8%)	9 (31.0%)	72 (46.2%)		
Education level					
Not literate	129 (69.7%)	20 (69%)	109 (69.9%)	.003	.956
Primary school	56 (30.3%)	9 (31%)	47 (30.1%)		
Monthly income					
Income>expense	17 (9.2%)	5 (17.2%)	12 (7.7%)	3.070	.215
Income=expense	52 (28.1%)	6 (20.7%)	46 (29.5%)		
Income<expense	116 (62.7%)	18 (62.1%)	98 (62.8%)		
Marital status					
Married	175 (94.6%)	26 (89.7%)	149 (69.9%)	1.589	.207
Single	10 (5.4%)	3 (10.3%)	7 (30.1%)		
Living place					
City	60 (32.4%)	16 (55.2%)	44 (28.2%)	8.335	.015
Town	32 (17.3%)	3 (10.3%)	29 (18.6%)		
Rural area	93 50.3	10 (34.5%)	83 (53.2%)		
History of chronic illness					
Yes	154 (83.2%)	23 (79.3%)	131 (84.0%)	.344	.557
No	31 (16.8%)	6 (20.7%)	25 (16.0%)		
Number of drug					
< 5	176 (95.1%)	29 (100.0%)	147 (94.2%)	1.575	.209
> 5	9 (4.9%)	0 (0.0%)	9 (5.8%)		

ple said that they had told health workers about their use of plant products, while all of those who used plant products stated that they had experienced no side effects or problems with the products which they used (Table 3).

DISCUSSION

The study estimated the prevalence of herbal supplement use among elderly people in the east region of Turkey. The findings suggest that a little less than a quarter (15.7%) of the elderly people in this district use herbal supplements regularly. In the literature, different studies have found different rates of use of plant products of between 12.9% and 71.9%, and the results of our study are similar.^{15,23-25}

It was seen that a majority (69%) of the individuals in this study who used plant products were female (Table 1). It was seen that in the literature

also, individuals using plant products in similar studies were mostly female.²⁴⁻²⁷ Concerning other sociodemographic data, other studies have found that income level and in particular a high level of education had a positive effect on a trend towards alternative treatments.²⁸⁻³⁰ It is seen that similar results were obtained in various studies conducted with different populations.^{24,31-33} In a study conducted in America with a very large population (45.748 people), it was found that plant products were more used by females than by males, by older people than by younger people, by those with a high level of education than by those with a lower level of education, and by those with a normal body mass index than by those with a high body mass index.³⁴ In the present study, the correlation between the use of plant products by old people and different variables was examined, and it was seen that there was no significant interaction.

TABLE 2: Old peoples' opinions on herbal supplements.

Herbal Supplements	n	%
Herbal supplements use		
User	29	15.7
Non-user	156	84.3
Uses of plants		
Mixture	10	34.5
Single	19	65.5
Know the content of the herbal mixture used (n**=10)		
Yes	4	40.0
No	6	60.0
Application path		
Skin	3	10.3
Taken orally	26	89.7
Finding useful		
Useful	23	79.3
Non-useful	6	20.7
Primary reason*		
To treat health problems	17	58.6
To health	6	20.7
Prevent pain	6	20.7
Offering Herbal supplement *		
Family members	13	44.8
Health professionals	6	20.7
Relatives-friend	10	34.5
Obtained from *		
Herbs and spice seller	8	25.0
Plant collecting	14	43.8
Pharmacy	7	21.9
Order form internet or by phone	3	9.3
Information to health Professional		
Yes	7	24.1
No	22	75.9
Health problem related to the herbal supplement		
Yes	0	0.0
No	29	100.0

*The number of n has changed since there is more than one herbal supplements use.

**The herbal supplements has been evaluated among those who use it as a mixture.

However, it was determined that those who were illiterate or married, those with a poor economic condition, those who lived in the provincial capital and those who had at least one chronic illness used plant products more frequently, although this did not reach the level of statistical significance (Table 1). It was found in the study that there was a significant difference between the use of plant

products and place of residence, and that those living in the provincial capital chose plant products more frequently (Table 1). It is thought that living in the provincial capital made access to plant products easier. Particularly in the east of Turkey where the study was conducted, it is difficult for old people living in rural areas to have access to plant products either by buying them or by collecting them themselves. In the provincial capitals however, the existence of shops such as those selling spices makes access easier.

Another important factor that should be considered by health professionals is the greater difference in the use of herbal supplements in some ethnic groups and living areas than in others. The plant products most frequently used by the old people in this study were stinging nettles and black cumin (Table 2). This could be associated with the existing family, cultural and religion structures of the area where the research was conducted. Stinging nettles are a plant which is found in most places in Turkey, and they are used in some places in food as a vegetable. In traditional culture, they are believed to have both nutritional and curative properties.³⁵ It is not clear what benefits or negative effects stinging nettles may have. The current perception of plant products, that “there’ll be no problem because it’s natural”, may well have influenced the preference for their use.³⁶ Another frequently chosen plant product is black cumin oil. This plant has great religious significance in Muslim societies, and Turkey is a predominantly Muslim society.³⁷ There is a religious tradition (Hadith) which states “Apart from death, there is no disease for which a remedy cannot be found in black cumin”.³⁸ It has been established in studies performed with different cultures that plants such as ginkgo, garlic and Echinacea have been used by different individuals or groups for their cultural or ethnic associations.²⁵⁻²⁷ Each society has its own dynamics and different educational levels, cultural make-up, health systems, and socioeconomic and development levels, which may affect the types of plants used.

Sources of knowledge on plant products are very varied, and it is important to get the right knowledge from the right sources. Today, the ef-

TABLE 3: Distribution of herbal supplements.

English Name	Turkish Name	n*	%
Stinging nettle	ısırgan otu	4	13.8
Black cummin oil	çörekotu yağı	3	10.3
Mint	nane	3	10.3
Sycamore leaf	çınar ağacı yaprağı	2	6.9
Chamomile	papatya	2	6.9
Linden	ihlamur	2	6.9
Knotweed	madımak	2	6.9
Rosemary	biberiye	1	3.4
Hammer	çekic otu	1	3.4
Apricot tea	kayısı çayı	1	3.4
Hibiscus	ebegümeçi	1	3.4
Lemon	limon	1	3.4
Parsley	maydanoz	1	3.4
Wild tea	yaban çayı	1	3.4
Melissa tea	melisa çayı	1	3.4
Quince leaf	ayva yaprağı	1	3.4
Rosehip	kuşburnu	1	3.4
Walnut shell	ceviz kabuğu	1	3.4
Arugula	roka	1	3.4
Koloze	Koloz	1	3.4
Thyme	Kekik	1	3.4
Molasses water	Pekmez suyu	1	3.4
Cinnamon	Tarçın	1	3.4
Passionfruit	Pasiflora	1	3.4

*The number of n has changed since there is more than one herbal supplements use.

fects on health of different plants have been shown on the media as being very positive, and this is another factor supporting the use of plant products in society. In a study by Sagkal et al. (2013), it was found that old people were frequently affected by friends and relatives in choosing the plants which they used.¹⁵ In the present study also, it was seen that family members and relatives and friends were factors affecting the use of plant products (Table 3). This is a serious situation, in that many plant products are known to be potentially hepatotoxic.³⁹ The use of plant products, medications or vitamin supplements without medical supervision can result in toxic hepatitis and even liver failure to the extent of the need for a liver transplant. In addition, plant products have sometimes been exposed to different chemical materials which may cause liver damage and death.^{40,41}

Herbal supplements provide an alternative to medical treatment, and are simply used for various health problems. In particular, it can be found that dissatisfaction with health services, insufficient care services and untreatable health problems affect the trend towards the use of alternative products.⁴² In the present study also, it was seen that most of the old people used plant products to cure health problems (58.6%), and that 79.3% of them found the product which they used to be beneficial (Table 3). In a study by Dedeli et al. (2011) with 453 old people in an old people's support center, it was found that most of the old people chose to use plant products in order to maintain their health.²³

The toxicity of herbal supplements is a serious public health problem. Many studies have reported the interaction between drugs and herbal supplements.^{27,39,43-45} In a systematic review, eleven po-

tential interactions between drugs interactions and herbal supplements were found.⁴⁶ In the present study, the old people stated that they had experienced no side effects from the plant products which they used. An important consideration with regard to toxicity is the mix of plants. It was seen that 34.5% of the old people in our study used plant products in the form of a mixture (Table 3). However, toxic effects can increase particularly when plants are used in mixtures. Plant products used alone or as part of a mixture can have adverse effects on not only the liver but also on gastrointestinal, pulmonary, cardiovascular, renal, hematological, neurological and endocrinal systems and organs.⁴⁰

Considering the sharing of information on plant product use with health personnel, most (75.9%) of the old people in this study did not inform health personnel about their use of these products (Table 3). It was seen in the literature that individuals using plant products usually did not inform health personnel, and that they actively avoided informing them.^{1,15}

CONCLUSION

In conclusion, the results of the current study shown that 15.7% of old people have used herbal supplements. The most commonly used plant products were stinging nettles, black cumin oil and mint. It was determined that the use of herbal supplement approaches by the elderly was not related to sociodemographic characteristics.

It is clear that health professionals are responsible in this regard. Health professionals working with elderly people should routinely ask questions about the use of herbal products. This is very important for the holistic care of the elderly. This suggests the need for a wide-ranging study on the use of plant products by old people. Especially, individuals must be careful regarding the use of herbal supplements, which may possibly interact with medical drugs. It should be remembered that health professionals must have sufficient knowledge about herbal supplements methods the elderly. Professional organizations of health workers also have responsibility to discuss this topic from an understanding point of view.

It is seen that there is a need for greater knowledge about herbal supplements among health professionals such as nurses, doctors, pharmacists, and nutritionists. It is thought that lack of knowledge may be a reason for the lack of effective communication between the health professionals and patients about the use of herbal supplements. Communication between patients and health professionals is important.

LIMITATIONS

The study contains a number of limitations. The study was conducted in a single center, a university hospital. The sample group consisted of old people who volunteered to participate, and the research findings can only be generalized to this group. Another limitation is that the data collection form was not structured as a scale. Additionally, the questionnaire did not include information about the dose frequency of herbs. The study has a cross-sectional design; therefore, the conclusions drawn from the study cannot suggest causation. To understand herbal supplement use in old individuals more profoundly, the study needs to be repeated in different regions with more old people.

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: Emine Karaman, Pınar Tosun Taşar, Yasemin Yıldırım; **Control/Supervision:** Yasemin Yıldırım; **Data Collection and/or Processing:** Pınar Tosun Taşar, Özge Timur, Tuğba Kiper Yılmaz; **Analysis and/or Interpretation:** Emine Karaman, Yasemin Yıldırım; **Literature Review:** Emine Karaman, Pınar Tosun Taşar, Yasemin Yıldırım; **Critical Review:** Emine Karaman, Pınar Tosun Taşar, Yasemin Yıldırım; **References and Fundings:** Emine Karaman, Pınar Tosun Taşar, Yasemin Yıldırım; **Materials:** Emine Karaman, Pınar Tosun Taşar, Yasemin Yıldırım.

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