

The Consumption Preferences on the Use of Herbal Products in Turkey and Opinions on Pharmacists

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Abstract: ***Background/aim:** Herbal Products (HPs) are generally considered to have fewer side-effects due to their natural origin and long standing use. The aim of this study is to reveal intended use of herbal products or medicinal plants, their procurement, the duration and frequency of use, the person consulted by Turkish people and the consumption habits of individuals on purchasing HPs from pharmacies. **Materials and methods:** This research was conducted by the members of Pharmetic Entrepreneur Pharmacists Association by means of cross-sectional analysis and applied to 410 attendees in 61 pharmacies. Patients over 18 years of age participated in the study and the data was collected from questionnaire results. For this purpose, the pharmacists requested to individuals who came into the pharmacies whether they full the questionnaire which was prepared by us, and if they approve it, they full it in. **Results:** Data from 410 questionnaires, conducted by face to face interviews. Within the last year period, a total of 88.5% of the responders in the survey have been used plant-based drugs for the treatment of the diseases or at least as a chemopreventive agent while 39% of them have been used the plant-based drugs for only a month. During the last year, the most used products were for the treatment of influenza or common cold and dermatological problems with the percentages of 57.8%, 29.3% and 29.4% respectively. **Conclusion:** Suggestion and selling of the phytotherapeutic products by pharmacists or educated people in phytotherapeutic products, at least having related certificates or master degree, even PhD about pharmacognosy-phytotherapy subjects or phytotherapeutics and their effects which means knowledgeable about drugs, drug side effects, drug-drug interactions, particularly interaction between synthetic drugs and phytotherapeutics would be decreased or diminished to observe undesired results.*

Keywords: Herbal medicine; Turkey; pharmacy; prevalence; attitudes; consumption habits

1. Introduction

Herbal products (HPs) defines as any kind of preparation containing either raw or processed ingredients based on one or more herbs used by consumers for self-treatment purposes, illness prevention and/or improving healthy lifestyle, are generally considered as an inseparable part of traditional medicine, particularly in developing countries. However, their importance has been documented in higher-income countries as well (1,2,3,4,5). Predictors that influence the prevalence and attitudes of the population towards HP utilization vary from country to country, from region to region, and among income groups (6,1,7, 8,9). Therefore, they have attracted the attention of producers and marketing strategy-makers from both the pharmaceutical and food industry (7,10,11, 12).

Since Herbal Medicines (HMs) include botanicals and botanical health products and are generally considered as safe due to their natural origin and long standing use (12), they gradually become a popular choice for healthcare. Herbal products in the form of pharmaceuticals and dietary supplements can be purchased by consumers via the internet and phone or TV, without the supervision of physicians and pharmacies. The availability of direct sales of HMs to consumers creates the potential risk of toxicity, misidentification, contamination, deception, interactions with drugs and foods, abuse and over-use of herbal supplements (12, 13, 14, 15).

Herbal medicines are in great demand and are used by approximately 80% of the world's population (11, 16, 17,18). Their popularity is due largely to their presumed safety, efficacy, cultural acceptability, and lesser side effects compared with prescription medications; perhaps most important, they are viewed as cost effective and accessible (16,17).

It is unfortunate fact that, few patients inform their primary care providers about their use of herbal products (16). Pharmacists play a critical role in educating patients and healthcare providers about the available evidence on the efficacy of these products, as well as in making recommendations that are consistent with that evidence (16). By actively embracing the responsibility for counseling individuals on the appropriate use of herbal products, pharmacists will become recognized experts in this rapidly growing area, and will be able to positively influence the quality of care (16, 19, 20).

Although the use of HPs is common in Turkey (20,21,22,23) no detailed questionnaires concerning the reasons, prevalence, demographic and socio-economic data of users, types of HMs used medical conditions, main source of recommendation, purchasing and knowledge-attitudes towards HPs have been performed in Pharmacies.

2. Material and Methods

Our study area, the province of Istanbul, Ankara, and Izmir have been the major poles of growth and development in

Turkey. Istanbul which is home to nearly 18 percent of the population and its population is increasing by nearly 2 percent each year, and in 2013, its settled population reached 14 million. When domestic and international tourists are added to this number, it becomes quite difficult to manage the crowd gathered in Istanbul. This mega city generates 27.5 percent of the country's national income. Out of the total workers in Istanbul, a total of 62 percent are in the services sector and 38 percent are in industrial sectors.

Ankara is home to 6.4 percent of the country's population and its contribution to the national income is 8.5 percent. As would be expected, it is a services sector metropolis. Izmir has a share of 6.6 percent of the national income, but differs from the other two in a sense that 12 percent of its population is part of the agriculture. In Izmir, industry and services have an equal size.

This research was conducted from May 27 to 29, 2015 at 61 pharmacies located in all members of Pharmetic Entrepreneur Pharmacists Association in Istanbul, Ankara and Izmir. Attendees were informed prior to research, verbal consent was obtained from the attendees who volunteered and they were requested to complete the questionnaire prepared by the researchers. Research questionnaire is composed of 20 questions which contain information like socio-demographical data, consumption and frequency of herbal products. They were requested to score questions like product use, place of information and point of purchase preferences from 1 to 7 (1 most preferred, 7 least preferred). This research was conducted

for the purpose of revealing intended use of herbal products or medicinal plants by Turkish people, their procurement, duration and frequency of use, persons consulted and consumption habits. Data was evaluated by the software SPSS 16.0. As statistical method, frequency, arithmetic mean, chi square, Anova and Student t tests were used.

3. Results

Out of 410 attendees who participated the research, 56.3% were female, regarding educational level, 51.2% were graduates of high school or higher. About 88.5 % of attendees stated that they used medicinal plants or herbal products for the purpose of treatment or as a support to treatment within last year while 85% stated that they would recommend to their next of kin products they used for the purpose of treatment or as support to treatment and benefited.

More than one third of the attendees (39%) used herbal products for the purpose of treatment or as support to treatment for a period of less than a month during last year. The products used most within last year were against influenza or common cold, skin diseases and hair problems 57.8%, 29.3% and 29.4% respectively (Table 1). Around 35% of the attendees stated that they were influenced by programs, advertisements, news etc. of non-physician or non-pharmacist people in the media.

Table 1: Distribution of medicinal plant/herbal products used by the attendees during last one year

Product type	Number n: (410)	% (100)
Skin condition	120	29.3
Common cold	237	57.8
Obesity / being overweight	101	24.6
Cardiovascular diseases	73	17.8
Chronic diseases (such as diabetes, blood pressure, asthma)	70	17.1
Urinary tract diseases	70	17.1
Hemorrhoid treatment	50	12.2
Hair diseases	121	29.5
Sexual problems	52	12.7
Mental problems and sleep disorder	106	25.9
Joint disorders	85	20.7
Cancer treatment	27	6.6

Although rates of using herbal products for the purpose of treatment or as a support to treatment within the last one year were 90.4% for females and 86% for males, this difference was not found to be significant statistically ($p > 0.05$). Males who attended the research stated that they used herbal products or medicinal plants for the purpose of treatment or as a support to treatment against cardiovascular diseases, and sexual problems within the last year more in comparison to females ($p < 0.05$) However, no statistical differences could be found between gender and rates of other medical herbal products used ($p > 0.05$) (Table 2).

It was determined that out of the attendees, 93.3% with high school and higher education and 83.2% of those with sub-high school education used herbal products for the purpose of treatment or as a support to treatment within the last year ($p < 0.05$) 34.8% of those with education level of high school and higher stated that they preferred to use herbal products against skin disease and 34.3% against hair diseases ($p < 0.05$) (Table 2).

Table 2: Distribution of Medicinal Plants/Herbal Products used by the Attendees During Last Year according to Gender and Educational Level

Product Use	Gender		P	Educational Level		p
	Male (178) %	Female (230) %		Below High School	High School and Higher	
Product Use Within last year	86.0	90.4	.164	83.7	93.3	0.002
Product type						
Skin problems	29.1	29.4	1.000	23.2	34.8	0.012
Common cold	57.0	58.4	0.840	54.5	60.5	0.213
Obesity / being overweight	21.2	27.3	0.167	21.7	27.6	0.171
Cardiovascular diseases	22.3	14.3	0.038	14.6	21.0	0.121
Chronic diseases (such as diabetes, blood pressure, asthma)	20.1	14.7	0.186	14.1	19.5	0.186
Urinary tract diseases	17.9	16.5	0.791	17.2	17.1	1.000
Hemorrhoid treatment	13.4	11.3	0.545	14.1	10.5	0.292
Hair diseases	30.2	29.0	0.828	24.7	34.3	0.039
Sexual problems	21.2	6.1	0.000	15.2	10.5	0.182
Solution for mental problems and sleep disorder	25.7	26.0	1.000	24.7	26.7	0.734
Joint disorders	23.5	18.6	0.269	23.2	18.1	0.221
Cancer treatment	8.9	4.8	.109	6.6	6.7	1.000

Nearly 43% (42.9%) of the attendees stated that they buy products for skin diseases from Mall pharmacies and 16.5% from city center pharmacies (p<0.05).

Rates of medicinal herbal product use against skin diseases, cardiovascular disease, chronic diseases and cancer at city center pharmacies were found at lower rates in comparison to other pharmacies (p<0.05) (Table 3).

Table 3: Distribution of Product Types Sold by Pharmacies According to their Location

Product type	Mall	Locality Neighborhood	City center	Across family health center	Across hospital	p
Skin conditions	42.9	33.1	16.5	19.4	32.7	0.003
Common cold	62.5	60.8	51.5	61.1	52.7	0.488
Obesity / being overweight	32.1	25.3	22.7	22.2	20.0	0.611
Cardiovascular diseases	23.2	18.1	8.2	25.0	23.6	0.045
Chronic diseases (such as diabetes, blood pressure, asthma)	10.7	20.5	7.2	22.2	27.3	0.006
Urinary tract diseases	21.4	17.5	10.3	22.2	20.0	0.297
Hemorrhoid treatment	5.4	13.9	9.3	19.4	14.5	0.223
Hair diseases	41.1	29.5	26.8	22.2	27.3	0.288
Sexual problems	12.5	15.1	7.2	16.7	12.7	0.408
Mental relaxant and solution for sleep disorder	37.5	26.5	18.6	22.2	27.3	1.360
Joint disorders	25.0	16.9	19.6	30.6	23.6	0.332
Cancer treatment	1.8	8.4	1.0	11.1	12.7	0.014

About 10.2% of the attendees stated that they used medicinal herbal products as a medication for treating diseases, one third of attendees (33.2%) as support regardless of medication and 29.0% for a healthy life (Table 4).

Table 4: Distribution of Answers of attendees to the Question Generally for what Purpose you Use Medicinal Plants and/or Medicinal Herbal Products

Purpose of Using Medicinal Plants and/or Medicinal Herbal Products	%
I use for disease treatment as medication	10,2
I use for disease treatment as medication –I use as support besides medication I use	3.4
I use for disease treatment as medication- I use as support besides medication I use I prefer for healthy life	8.0
I use for disease treatment as medication-	2.7
- I use as support besides medication.	33.2
- I use as support besides medication. I prefer for healthy life	10.2
I prefer for healthy life	29.0
- I do not prefer using herbal products	3.2

It was observed that attendees with high school or higher education prefer internet more both for obtaining information and for purchases($p<0.05$) .

When scores of preferring herbal and/or medicinal herbal products for the purpose of treatment or support for treatment in the event of having various medical problems based on gender and educational levels were compared, female attendees stated they would prefer to use herbal products as mental relaxants and for sleep issues, male attendees stated for sexual problems ($p<0.05$).

The attendees stated that they prefer pharmacists most with 2.08 ± 1.90 points as professional group they obtain consultancy about herbal products they use for the purpose of treatment or support for treatment and pharmacies most with 1.69 ± 1.31 points as point of purchase of medicinal plants and/or medicinal herbal products (Table 5).

Table 5: Point averages of places the Attendees take advice about use of herbs and/or medicinal herbal products used for treatment or support for treatment

Point averages of places the Attendees prefer to take advice about use of herbs and/or medicinal herbal products	
Doctor	2.90± 2.399
Pharmacist	2.08± 1.908
Herbalist	4.88 ±2.382
Visual and Print Media	5.06± 2.169
Internet	4.70± 2.317
Kith and Kin	4.72 ±2.377
Other	6.41± 1.616
Point averages of places the Attendees prefer to purchase medicinal plants and/or medicinal herbal products	
Pharmacist	1.69 ± 1.317
Herbalist	3.13 ±1.756
Internet	3.98 ±1.447
Supermarket personal care stores	4.09 ± 1.359
Other	4.49 ±1.185

The attendees who participated the research stated that they spent TRY 5-50000 in total per person within the last year, in average TRY 700 for medicinal plants or herbal products they use for the purpose of treatment or support for treatment. It was found that according to location of pharmacies, the highest amount in median was spent at Mall pharmacies (median: TRY 350) (Table6).

Table 6: Distribution of median values of costs paid by the attendees according to pharmacy locations and medical problems

Pharmacy locations	Median	Min-max
Mall	350,00	10-5000
Locality Neighborhood	200,00	5-15000
City center	200,00	5-5000
Across family health center (Across mall)	300,00	5-2000
Across hospital	200,00	5-50000
Total	250,00	5-50000

4. Discussion

It was observed that there are many survey reviews in various countries about points of view of various segments of population, physicians and other healthcare workers on herbal products. Even if some survey studies have performed in Turkey also, it stands out that there is insufficiency in this regard currently. This research will contribute to revealing point of view of Turkish people through scientific surveys.

The rate of using medicinal plants or herbal products for the purpose of treatment or support for treatment is high in the study. Martins Ekor (2007) also supported that the use of herbal medicinal products and supplements has increased tremendously over the past three decades with not less than 80% of people worldwide relying on them for some part of primary healthcare (18). Another study has stated that use of herbal and other natural treatments has been reported to be increasing in the United States and Canada (24). Educational level of the survey participants is high, and they closely follow written and visual media.

The study we conduct at three large provinces show that people with high educational levels prefer more herbal products for the purpose of treatment or support for treatment. A total of 85% of the attendees stated that they would recommend to their next of kin products they used for the purpose of treatment or as support to treatment and benefited.

However 1/3 of the attendees stated that they were influenced by programs, advertisements, news etc. of non-physician on non-pharmacist people in the media. The Regulation on Traditional and Alternative Medicine Practices published at the Official Gazette on 27 October 2014 in Turkey would increase rates of use of TAT (25). Participation of pharmacists more actively in such practices would prevent many negative impacts from emerging.

A total of 34.8% of those with education level of high school and higher stated that they preferred to use herbal products for the treatment or support for treatment of skin diseases and 34.3% against hair diseases ($p < 0.05$). On the other hand, no statistical difference was found between rates of other medicinal herbal products used and educational level ($p > 0.05$)

The study shows usage rates of herbal products for the purpose of treatment or support for treatment within the last year was 90.4% for females and 86% for males whereas this difference was not found to be significant statistically ($p > 0.05$). Another study also supported that women had a higher probability of using herbal medicine and/or food supplements in comparison with men (26).

It was determined that female attendees and attendees with high school or higher education received recommendations about use of plants and/or medicinal herbal products they use as treatment or support for treatment mostly from doctors, again male attendees with high school or higher education preferred internet ($p < 0.05$).

It was determined that male attendees mostly prefer internet for purchasing plants and/or medicinal herbal products they use for treatment or support for treatment, the attendees with high school and higher education prefer purchasing products from herbalists less ($p < 0.05$).

When points of the attendees for preferring use of herbal and/or medicinal herbal products for the purpose of treatment or support for treatment in the event of having various medical conditions based on gender and educational levels are compared, female attendees prefer as mental relaxants and for sleep issues, male attendees stated for cardiovascular diseases sexual problems ($p < 0.05$). However, no statistical difference was found between rates of other medicinal herbal products used and gender ($p > 0.05$).

Only 10.2 % of the attendees stated that they used medicinal herbal products they use as medication for treating diseases while 33.2% as support beside medication and 29.0% for a healthy life.

Nearly half of the attendees (42.9%) state that they purchase products for skin diseases from Mall pharmacy and 16.5% from pharmacies located at city center ($p < 0.05$). Rates of medicinal herbal product use for the purpose of treatment or for support of treatment against skin disease, cardiovascular diseases, chronic diseases and cancer at city center pharmacies were found to be lower in comparison to other pharmacies ($p < 0.05$).

The attendees who participated the research stated that they spent TRY 5-50000 in total per person within the last year, in average TRY 700 for medicinal plants or herbal products they use for the purpose of treatment or support for treatment. It was found that according to location of pharmacies, the highest amount in median was spent at Mall pharmacies (median: TRY 350).

A study conducted shows that total monthly cost of product for patients using herbal products was less than TRY 50. Annual amount was TRY 600 (27). In our research, the attendees who participated the research stated that they spent TRY 5-50000 in total per person within the last year, in average TRY 700 for medicinal plants or herbal products they use for the purpose of treatment or support for treatment.

5. Conclusions

The fact that the study was conducted in 3 large cities and high educational level of the attendees caused us to obtain results showing more conscious approach towards medicinal plants and herbal products. It was seen that the attendees mostly consult with pharmacies and they generally prefer pharmacies for product procurement and they paid attention to quality of products purchased.

Supply by pharmacies who got undergraduate education on medicinal plants, who are familiar with plants, aware of their impact and deem them as medication would minimize potential side effects and interactions with medications used by patients.

Many survey studies determine that patients do not mention herbal treatments they use in addition to conventional medication to their physician is most probably due to the belief that physician does not know such preparations, does not trust herbal medications and accordingly they may prevent the patient from use. Actually, this datum shows us how much physicians have an important role in phytotherapy. It is obvious that recommendation of herbal medications by physicians would be extremely effective in the eyes of public and risks arising from misuse would be minimized.

The survey study revealed that guidance of people in the media by non-specialist persons about treatment with herbal medications and herbs to the extent of exploitation and providing the people with false information is extremely damaging.

Similar survey studies conducted in other countries showed that the majority of herbal medication users are females. Our survey found approximately similar levels for male and female attendees. It was determined that

educational level and rates of using herbal medication indicates correlation in many studies. Our survey results illustrate that as educational level increases, rate of using herbal medication increases.

On the other hand, survey studies show that rate of using herbal medication increases in people with high financial income levels. Since herbal medications are usually expensive, this may be associated with increase of usage rate in the group with high purchasing power.

Even if it is shown that habits of the society for using herbal preparations are prevalent, arrangements related to quality control and analyses of such preparations is not at adequate level which creates problems.

This study determined for the first time annual expenditure figures of Turkish people in herbal product use. This may be deemed an indicator that the people have faith in herbal medications and do not abstain from spending money. Accordingly, in the sense of protecting public health, it is a requirement the Ministries promptly issue arrangements needed for availability in the market of herbal products in the quality the people deserve without confusion of authority, fully drawing framework for food supplements and herbal medication concepts and herbs to be used, necessary activities should be made.

The Regulation on Traditional and Alternative Medicine Practices published at the Official Gazette on 27 October 2014 in Turkey would increase rates of use of TAT. Participation of pharmacists more actively in such practices would prevent many negative impacts from emerging.

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