



Medicinal and Aromatic Plants Consumption Habits of Consumers in the Coronavirus Pandemic

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ABSTRACT: Living conditions in Turkey has been changed considerably during Covid-19 pandemic. This phase has changed people's normal lives, habits such as eating, resting, and shopping and pushed them to different pursuits. This study aimed to obtain data on the consumption preferences of medicinal and aromatic plants. The survey was conducted in the autumn of 2020. Choices and health services that are effective in the consumption of Medicinal and Aromatic Plant (MAP) of consumers are estimated by statistics and logit regression model to the data obtained from the surveys. It was determined that the coronavirus pandemic increased the consumption of medicinal and aromatic plants by 76%. The plants with the highest consumption during the pandemic were recorded as rosehip, linden, mint, and ginger. Green tea and udhindi were the most consumed medicinal and aromatic plants per month. According to logit regression analysis results; age, duration of use, price, benefit, side effect, access to the chemical, additive, and hope variables increased the consumption of medicinal and aromatic plants and the likelihood of purchasing during the pandemic. It is thought that consumption of MAPs will become widespread and increase during the pandemic.

Key words: Consumption, Covid-19, Pandemic, Medicinal and Aromatic Plants, Logit Regression, Tendency

Koronavirüsü Salgınında Tüketicilerin Tıbbi ve Aromatik Bitkileri Tüketim Alışkanlıkları

ÖZ: Türkiye'de koronavirüs süreci ile hızla değişen yaşam koşulları insanların normal yaşantılarını, rutin beslenme, dinlenme, alışveriş vb. alışkanlıklarını değiştirmiş onları farklı arayışlara itmiştir. Bu doğrultuda yapılan araştırmada tüketicilerin tıbbi ve aromatik bitkiler (TAB) tüketim tercihlerine ilişkin verilerin elde edilmesi amaçlanmıştır. 2020 yılı sonbahar aylarında anket çalışması yapılmış, tüketicilerin tıbbi ve aromatik bitkilerin tüketimlerinde etkili olan seçim ve yaklaşımları ile ilgili yargıları anketlerle elde edilen veriler ışığında tanımlayıcı istatistikler ve logit regresyon modeli ile tahmin edilmiştir. Koronavirüs salgınının tıbbi ve aromatik bitki tüketimini %76 oranında artırdığı tespit edilmiştir. Pandemi döneminde en çok tüketilen bitkiler kuşburnu, ıhlamur, nane ve zencefil olarak belirlenmiştir. Aylık miktar olarak en fazla tüketilen bitkiler ise yeşilçay ve udhindi olmuştur. Logit regresyon analiz sonuçlarına göre yaş, tıbbi ve aromatik bitki kullanım süresi, tıbbi ve aromatik bitki fiyatı, tıbbi ve aromatik bitkiyi faydalı bulma, yan etki, kimyasala erişim, katkı maddesi ve umut değişkenlerinin salgın süresince tıbbi ve aromatik bitki tüketimini ve satın alınma olasılığını artırdığı belirlenmiştir. Salgın önlenebilene kadar tıbbi ve aromatik bitki tüketiminin yaygınlaşacağı ve artacağı düşünülmektedir.

Anahtar Kelimeler: Tüketim, Covid-19, Salgın, Tıbbi ve Aromatik Bitki, Logit Regrasyon, Eğilim

INTRODUCTION

The Covid-19 pandemic, which got on the world agenda in the first months of 2020 and was perceived to threaten human life in Turkey as of March 2020, has negatively affected the whole world in many ways.

Among other negative results, the coronavirus pandemic caused radical changes in many areas from economy to health, from education to agriculture, from production to consumption in a very short time and it continues to do so. The pandemic, which

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continues to spread with deadly threats, particularly affects the healthcare systems and the economies.

The struggle with the pandemic goes on and especially during summer spreads at full speed, affecting all areas of life. Many security measures are still being taken to protect public health. In addition to paying attention to the triad of social distance, masks, and hygiene, people are also looking for an alternative to protect the metabolism, strengthen the immune system, increase body resistance, reduce stress, relieve intense psychological pressure, relax, and try to overcome this process with the least damage.

Traditional medicine is defined as all the information that different cultures have developed with their beliefs, cultures, and experiences to protect health (Haidan et al., 2016). The oldest book about medicinal and aromatic plants whose therapeutic and healing effects are by Chinese ruler Shin Nong was written in 3700 BC. The healing effect of plants has also been found in the works of Hippocrates from İstanköy, Dioscorides from Adana, Galen from Bergama, Biruni from Turkmenistan, and Ibn-i Sina who was born in Bukhara. These important historic figures stated that plants are used in the treatment of many diseases. Medicinal and aromatic plants have been used to prevent various ailments or to cure diseases since the first day of human beings.

Treatment with herbs, folk remedies, which started with the history of humanity, are practices that have survived until today (Baytop, 1999). It is seen that the frequency of using herbal products is quite common in the world and Turkey (Gamsizkan et al., 2012). Medicinal and aromatic plants, which are mostly used for human and animal treatment, are also consumed for healthy nutrition, sweetening foods, fragrance, cosmetics, and personal care (Tutenocakli, 2002; Arslan et al., 2015; Kadioglu and Kadioglu, 2014).

According to the data of the World Health Organization (WHO), approximately 20,000 plants are used for medicinal purposes (WHO, 2012). Especially in recent years, the use of medicinal and aromatic plants has been increasing day by day, with the increasing demand for natural products. After the Covid-19 pandemic, it is stated that there may be herbal treatments that can overcome this pandemic in far eastern countries such as China, Bangladesh, Japan, South Korea, North Korea, which have developed knowledge about the treatment with herbs, as in ancient times (Kanika et al., 2020). The use of herbs offers an alternative to protect or defeat contamination (Balachandar et al., 2020). Studies have determined that many plant species in the region are used in the treatment of different diseases (Kadioglu and Kadioglu, 2014; Kadioglu et al., 2021). Therefore, it is seen that the public is looking for an alternative to combat the epidemic and that the treatment with

medicinal and aromatic herbs comes to the fore. Where many plant species are used for therapeutic purposes, the epidemic is struggled by consuming MAP. With this assumption, this study was conducted in order to determine the factors affecting the consumption of medicinal and aromatic plants and to reveal the consumption preferences of consumers during the pandemic process.

MATERIAL AND METHOD

In the research, consumers residing in Erzurum province Palandöken, Yakutiye and Aziziye settlements constitute the main mass. The most appropriate data collection method to determine the factors that affect consumers' MAPs use is the survey method. Due to the time and epidemic problem, it is necessary to provide data with a sufficient number of survey studies that can reflect the main mass. Sample size; (used when the frequency of the event is wanted to be examined and the number of people is known) have been determined by the formula below (Sumbuloglu and Sumbuloglu, 2010).

$$n = \frac{t^2 N p q}{N d^2 + t^2 p q} \quad (1)$$

It was calculated as $n = 246$ and the data were recorded by interviewing 246 people. Here; $t = 95\%$ ($\alpha/2 = 0.025$) t-table value (1.96) corresponding to significance level, $N =$ main mass size (Aziziye, Palandöken, Yakutiye population data for 2019 (422.832) (TURKSTAT, 2020), $p =$ MAP is the probability of consuming (0.8), $q =$ the probability of not consuming MAP (0.2), $d =$ the accepted error rate in the sampling (0.05). In the study of the determination of MAP consumption habits (Kadioglu et al., 2021) conducted in the same field in 2014, the rate of MAP usage was found to be 83%. Therefore, p value = 0.80 $q = 1 - 0.80$. The study due to the problems of face-to-face interviews due to the epidemic, the questionnaires were distributed and collected. The survey study, which was distributed proportionally to the neighborhoods, was delivered to the residents of the neighborhoods in conjunction with the headman of the neighborhoods and continued until the desired number was reached. The data obtained from consumers were analyzed and interpreted by applying descriptive statistics and logit regression model estimation. IBM SPSS 22 for Windows package program is used for statistical analysis.

Logit regression analysis: In identifying the factors that affect the consumers preferences for the consumption of medicinal and aromatic plants, logit regression analysis, an econometric model, was used in order to identify which factor will be effective and at what rate. For this purpose, Binary Logit Model, also known as 0-1 model, was preferred. The purpose

of using logit regression analysis is to establish a model that allows the relationship between the dependent variable and the independent variable to be defined (Hosmer and Lemeshow, 2001). In this way, the nonlinear logit regression model has become linear with respect to both the parameters and the variables.

Limitations of the study

The research was carried out among the participants in Erzurum city center. The research results are limited to the province where the survey was conducted and could not be disseminated throughout the country. In addition, the survey was conducted in the autumn of 2020 and since consumer behavior will change over time (Tek, 1997; Jones, 2020), the results should be evaluated by considering the dates of the survey.

RESULTS AND DISCUSSION

In the research, one person from each of 246 households provided survey data. 216 households stated that they use MAP for health and 30 for other purposes (cosmetics, aroma, food, pleasurable). The demographic characteristics of the consumers consuming MAPs for health purposes, the medicinal and aromatic plants they use, and the reasons for their

use, the logit regression analysis estimates of their consumption behavior were examined.

Demographic characteristics of MAP consumers: 36.6% of the consumers who participated in the survey are male and 63.4% are female. Approximately 35.6% of the consumer were in the 29-39 age range and 75.9% as married. When the educational status of the participants is examined, it is striking that 29.6% of them have an undergraduate degree. When their employment status is examined, it is seen that 32.4% of them are government employees and 28.7% are tradespeople, 68.1% of them have ≤ 4 family members, and 46% of them have an income in the range TRY 3.001–4.500, their monthly food expenditures are TRY 1.001–1.500, and their monthly health and MAP expenditures are between TRY 500 and less. In addition, in the distribution by place of birth, it has been noted that a large part of the consumers (56%) were born in the rural areas. When the relationship between demographic and socio-economic characteristics and MAP consumption is examined; there is a significant relationship with gender at 10%, age, and place of birth at 5% with monthly food expenditures at a 1% significance level (Table 1).

Table 1. Socio-economic and demographic factors affecting MAPs consumption

		Non-consumers (%)	Consumers (%)	Chi-square (p value)
Gender	Male	20.0	36.6	3.200 (0.074)*
	Female	80.0	63.4	
Marital Status	Married	66.7	75.9	1.198 (0.274)
	Single	33.3	24.1	
Age of Consumers	18-28	40.0	22.2	9.817 (0.044)**
	29-39	36.7	35.6	
	40-51	3.3	22.7	
	52-62	3.3	8.4	
	62 – more 62	16.7	11.1	
Education Level	Primary School	16.7	23.1	2.932 (0.569)
	Middle School	23.3	29.2	
	High School	13.3	9.3	
	Undergraduate	30.0	29.6	
	Postgraduate	16.7	8.8	
Distribution by Profession Groups	Government employees	33.3	32.4	8.219 (0.223)
	Worker	10.0	17.1	
	Tradespeople	26.7	28.7	
	Retired	13.3	6.0	
	Self-employment	16.7	15.7	
Place of Birth	Urban	66.7	44.0	5.445 (0,020)**
	Rural	33.6	56.0	
Number of Family Members	≤ 4	60.0	68.1	0.774 (0.379)
	> 4	40.0	31.9	
Montly Income	3000 and less	23.3	20.0	4.432 (0.218)
	3001-4500	30.0	46.0	
	4501-6000	16.7	18.0	
	6000 and more	30.0	16.0	

Continuation of Table 1

Monthly Food Expenses	1000 and less			25.188
		10.0	35.6	(0.000)***
	1001-1500	53.3	44.9	
	1501-2500	6.7	12.5	
	2501 and more	30.0	6.9	
Monthly Health Expenses	500 and less	23.3	45.8	5.936 (0.115)
	501-1000	40.0	31.9	
	1001-2000	16.7	10.6	
	2001 and more	20	11.7	
Monthly MAP expenses of MAP consumers				
		n	%	
	500 and less	118	54.6	
	501-1000	39	18.1	
	1001-2000	32	14.8	
	2001 and more	27	12.5	

*** 0.01, ** 0.05, *0.10 shows significant significance at the level.

MAPs used by consumers and their reasons for use: In general, it has been determined that 50.9% of medicinal and aromatic plant consumers consume MAPs for health purposes. Twenty-five percent (25%) of consumers are using MAPs for their immunity. It has been seen that 16.7% of them consume to strengthen or protect their health, relieve sleep problems. Ten point six percent (10.6%) of the participants stated that they were using MAPs to reduce their stress (Figure 1).

It has been determined that 56 herbs are used to strengthen the immune system and eliminate sleep problems. Among these, the most consumed medicinal and aromatic plants were listed as rosehip, linden, mint, ginseng, and the least consumed plant was tarragon. (Figure 2).

On the other hand, MAPs, which were consumed more than 150 g per month, were green tea, udihindi, pomegranate, ginger, and nettle (Figure 3). The anise plant has the least amount of consumption (49.5 g/month).

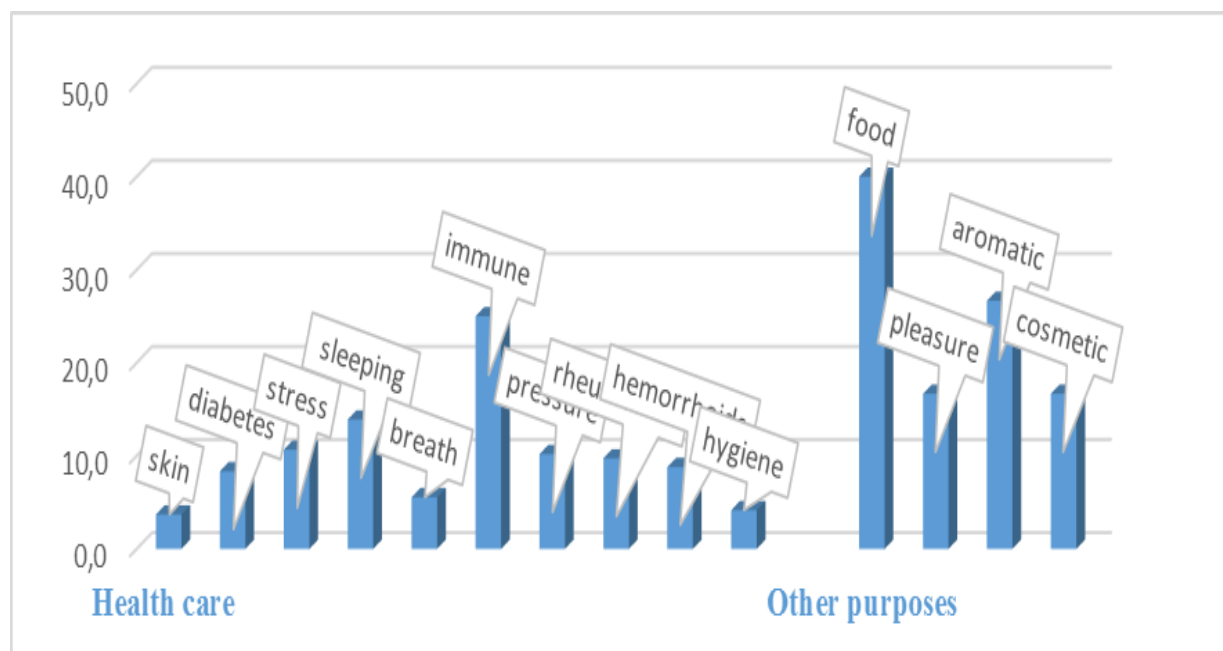


Figure 1. Purpose of using medicinal and aromatic plants

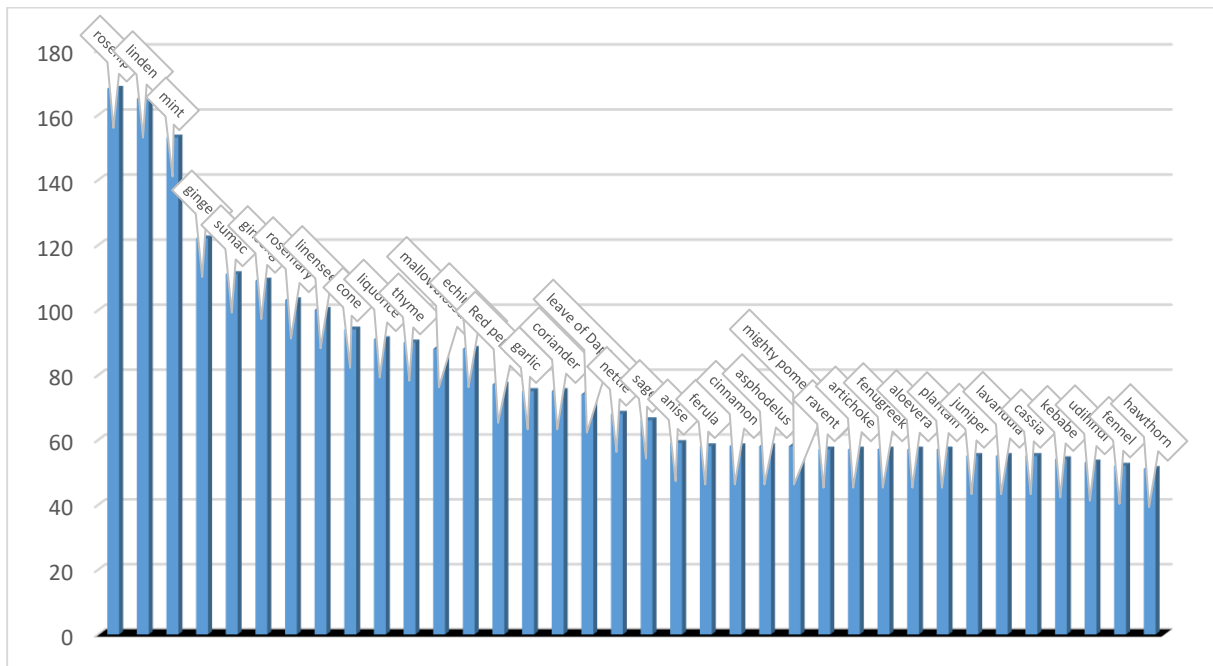


Figure 2. MAPs used during the epidemic (by number of consumers)

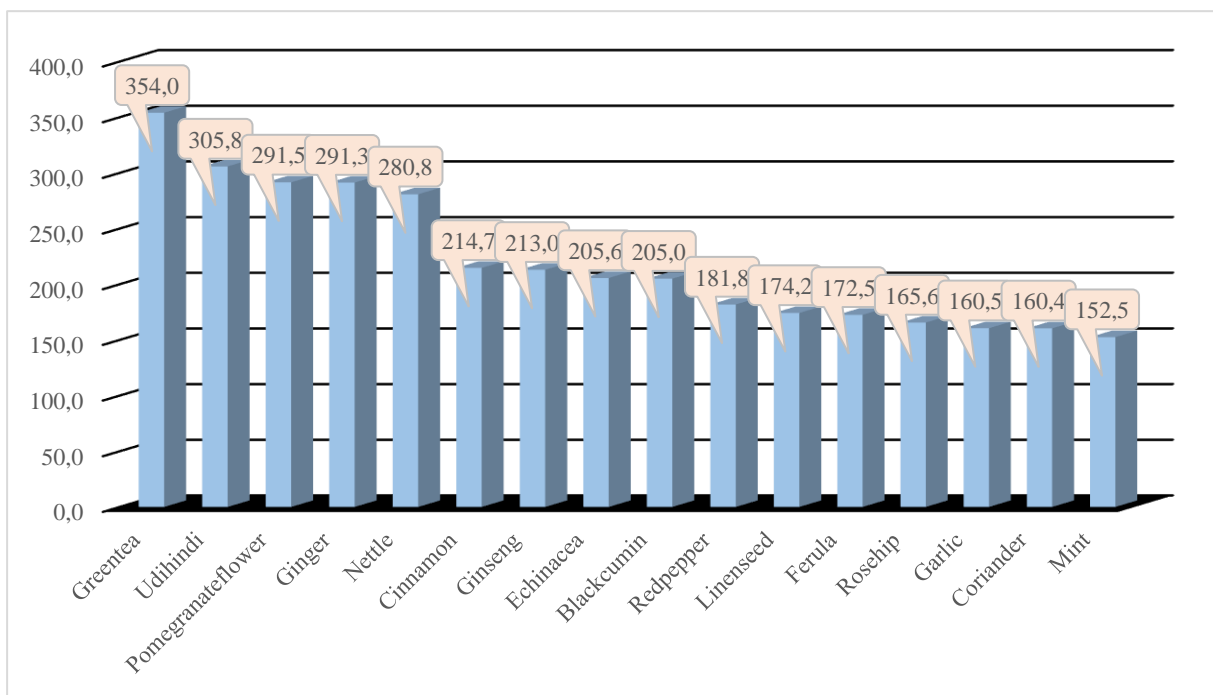


Figure 3. MAPs with a monthly consumption of more than 150g

It has been found that the rate of collecting medicinal and aromatic plants from nature is about 59%. About 50% of the people who consume MAP or MAP products do their shopping and consume MAPs

mostly as an herb. Consumers buy herbs mostly from the herbalists (48.1%) and they buy MAP products (oil/cream/ointment, extract, etc.) mostly from pharmacies (34.3%) (Table 2).

Table 2. Where medicinal and aromatic herbs are purchased

The places where herbaes are bought		Where medicinal and aromatic plant products are purchased	
Places of purchase	%	Places of purchase	%
Market	24.1	Market	20.8
Herbalist	48.1	Herbalist	25.5
Local market	13.0	Internet	19.4
Internet	14.8	Pharmacy	34.3

One of the questions directed at the participants was “Has the Coronavirus pandemic affected your MAP consumption?”. Through the answers to this question, it has been found that the pandemic increased MAP consumption by 76%. Coronavirus pandemic has caused stress and anxiety in consumers at the rate of 29%, nutritional problems at the rate of 28%, and sleep problems at the rate of 21%. At the time when there was no vaccine or drug to overcome the pandemic, experts’ warnings to protect and strengthen immunity among being careful about social

distance, masks and hygiene were taken seriously. Experts’ also emphasize the importance of being psychologically comfortable and peaceful to protect mental health and also help building a strong immunity (Ozcakmak and Var, 2020; Anonymous, 2020). Therefore, public try to avoide stress using MAPs that regulate sleep and increase body resistance. Consuming nutritious foods and MAPs induce regular sleep, help coping with te stress and increases resistance to infections (Table 3).

Table 3. Has the Coronavirus epidemi affected your MAP consumption?

Has the Coronavirus epidemi affected your MAP consumption?		How it affected?	
	%		%
Has increased	75.9	My chronic ailments have increased	16.2
Not changed	24.1	I have sleep problems	21.3
		I have nutritional problems (weight loss-weight gain)	27.8
		I have psychological problems (stress-anxiety)	29.2
		Did not affect	5.5

Logit regression analysis of consumer behavior: Binary logit regression analysis was used to estimate consumer behavior in the study. In the logit model used in the consumer analysis of the research, the dependant variable was specified as the consumption of medicinal aromatic plants. The independent variables of the model are age (Cage), medicinal and aromatic plant usage time (Mut), medicinal and aromatic plant price (Mpp), finding the medicinal and aromatic plant useful (Mfu), side effect (Mse), access to the chemical (Mac), no additives in the medicinal and aromatic plants (Mna) and having no hope (Cnh). Independent (explanatory) variables in the model consist of continuous and discrete variables. The functional form of the regression model that predicts the effect of factors affecting the study is as follows:

$$Y = f(X_{Cage}, X_{Mut}, X_{Mpp}, X_{Mfu}, X_{Mse}, X_{Mac}, X_{Mna}, X_{Cnh})$$

To find the most suitable model, an initial model was created by first considering the theoretical and hypothetical structure of the subject. Then, the most suitable model was found out with the stepwise (Forward-Wald) method. To test that the chosen model is the most suitable, in the regression analysis it was examined whether certain variables contributed to explanatory power by evaluating them in their presence or absence. Since each of the variables of the analyzed logit regression model was found to be significant and the model passed the goodness of fit tests, the odds ratios of the model were interpreted (Table 4).

Table 4. Optimal binary logit regression model results

Variables	β -Coefficient	Standart error	Wald	Significant (p)	Odds Ratio
MCage	1.965	0.509	14.869	0.000*	7.132
Mut	-1.069	0.323	10.931	0.001*	0.344
Mpp	-0.717	0.269	7.100	0.008*	0.488
Mfu	1.127	0.411	7.513	0.006*	3.086
Mse	-0.722	0.310	12.100	0.004*	0.500
Mac	-0.541	0.274	3.888	0.049**	0.582
Mna	-0.579	0.221	6.855	0.009*	0.560
Cnh	-2.198	0.540	16.577	0.000*	0.111
	-2LL 72.781	H-L X²	11.100	X² 109.65	

*P value significant at 1% level, ** P value significant at 5% level

Age, the first independent variable in the model, is significant at the 1% level and it has a positive value. Considering whether there is a relationship between the consumption of medicinal and aromatic plants and the age of the consumer, it is included in the model. The age is a discrete variable expressing the age groups of consumers. The odds ratio found as 7.132 for the age variable indicates that this factor is an important variable. This can be interpreted as that as age increases, the possibility of consuming medicinal and aromatic plants will be 7.132 times higher. It can be said that the claims that the disease does not affect young people affect MAPs consumption. The Mut variable is a discrete variable that expresses the duration of medicinal and aromatic plant use. The coefficient of this variable is negative and the statistical significance level of the variable is 1%. The odds betting ratio is 0.344. The coefficient takes a negative value at an odds ratio value close to zero. To be able to make interpretations, the Odds ratio should be corrected as 1/odds ratio (Kalayci, 2006). The odds ratio of the Mut variable is 0.344, the corrected odds ratio is $1/0.344=2.91$. In other words, it can be said that as the duration of use decreases, the probability of consuming medicinal and aromatic plants is 2.91 times more than the probability of not consuming medicinal and aromatic plants. Namely, it can be said that as the duration of use decreases, the consumption rate of medicinal and aromatic plants increases. Considering that too much of everything is harmful, it can be said that short-term use is healthier.

The Mpp variable, which compares medicinal and aromatic plant prices and consumer purchases, is discrete and has a negative direction. The odds ratio of the variable is 0.488 and the corrected odds ratio is 2.05. This can be interpreted as the price must be low for MAP consumption. In other words, the consumption of medicinal and aromatic plants

increases as the MAP price decreases. As the MAP price decreases, it can be said that the consumption rate is 2.05 times higher than the non-consumption rate. The Mfu variable is a question variable about beliefs about whether medicinal and aromatic plant consumption is beneficial against coronavirus. Those who respond positively to this question are those who believe that the consumption of medicinal and aromatic plants is beneficial against the coronavirus. It was found that the variable was statistically significant at the 1% level. The odds ratio is 3.086 and no correction is required. One unit increase in the tendency to believe that the consumption of medicinal and aromatic plants is beneficial against coronavirus will increase the probability of consuming medicinal and aromatic plants 3.086 times. The lack of chemical medication against the coronavirus causes despair in limiting consumers' access to chemical medication. As stated below, as access and hope decrease, consumers turn to alternative medicine, and MAP consumption increases.

The variable Mse, which expresses the belief that consumed medicinal aromatic plants have side effects, is a discrete variable and the variable coefficient is negative. The variable Mse, which was statistically significant at the 1% level, was answered as yes, no, or partially. The corrected odds ratio of the variable Mse is 2. In other words, it can be said that the ratio of those who believe that medicinal and aromatic herbs do not have side effects is 2 times more than those who believe they have side effects. Namely, it can be said that as the probability of believing that medicinal and aromatic plants have side effects decreases, the probability of consumption increases 2 times more. Mac variable expresses that consumers do not have access to the chemicals, as no drug or vaccine against covid 19 has yet been found. In other words, it can be said that as access to chemicals decreases, the

consumption of medicinal and aromatic plants will increase 1.72 times more. The variable of this factor was found to be statistically significant at the 5% level. The adjusted odds ratio is 1.72. As stated above, as access to chemicals decreases, MAP consumption increases.

The Mna variable was included in the model to demonstrate the probability that the absence of additives in medicinal and aromatic plant products may affect purchasing. The Tna variable is discrete. The variable of this factor was found to be significant at the 1% level. The variable has a negative value and its corrected odds ratio is 1.79. In other words, a 1-unit increase in medicinal and aromatic plant products not containing additives can be interpreted as the probability of purchasing medicinal and aromatic plants will increase by 1.72 times. Namely, it can be said that the presence of additives in medicinal and aromatic plant products will reduce the possibility of consumption by 1.79 times. This result shows that the consumers prefer additive-free medicinal and aromatic herbal products. Consumers state that additives carry elements that threaten health. Cnh variable is a discrete variable and has a negative direction. The variable, which is statistically significant at 1%, expresses the hopes of consumers during the Covid-19 pandemic. It can be said that the lack of any treatment against the Covid-19 leads to a decrease in hope, and consequently, the consumption of MAP, which is used as an alternative treatment, is increasing. The adjusted odds ratio is 9, and it can be stated that as hope decreases, the probability of consuming MAP is 9 times more than the probability of not consuming.

In traditional medicine, there is a belief that the remedy of a disease seen in a region is also definitely found in the same region. Knowing that there are plants that can be a source of healing for all kinds of diseases in our country, where four seasons are experienced simultaneously with rich flora and fauna, creates hope and trust in people. Since the beginning of human history, plants and extracts created from herbs have been used for therapeutic purposes. Plants are the origin of many drugs used in modern medicine today. With the study conducted, the consumption of MAPs consumption during the pandemic was examined and it was observed that the results obtained were in parallel with other studies. In 2014, in a study conducted in Erzurum on the determination of MAP consumption habits, it was stated that 83% of consumers purchased MAPs from herbalists, 54% of consumers preferred to consume MAPs for health purposes, as age increased and when the folded substance of MAP products was less, consumption increased (Kadioglu et al., 2021). There is a separate section for plants used in medicine in China, where 40% of the total drug consumption consists of herbal

medicines, many herbal medicines used alone or in combination with traditional medicines are used with accurate and early diagnosis, and many It has been reported that herbal medicine is also available (Zhang, 1999; Ernst, 2009; Sewel et al., 2014). The data obtained as a result of the study showed that additive-free products are preferred, the plants are collected from nature and herbal products are purchased from pharmacies. Natural and safe consumption increases MAP consumption. At the same time, herbal products can be obtained from pharmacies most safely. The use of herbal products is increasing worldwide. Using MAPs could provide a new approach to defeating viral infections and their transmission. Among other precautions to overcome the pandemic, it is stated that immunity should be strengthened and it is necessary to be psychologically comfortable and peaceful. Therefore, the public is trying to overcome this period by using MAPs that regulate sleep and increase body resistance. In the study conducted by Weiren et al. (2020), it was stated that since there is no vaccine or antiviral treatment module developed for the treatment of Covid-19 at the time, traditional medicines that have been used before can be used. It has been stated that the progression of the disease can be achieved by isolation and hygiene, and that food or nutritional supplements can be used to support the immunity (Muslu and Ersu, 2020). Jones (2020) stated as a result of his study that there would be significant differences in consumption before and after the pandemic. In another study conducted to determine changing consumer behavior the pandemic, it was stated that purchasing priorities changed (Çevik Tekin, 2020). In another study conducted to see the effect of the Covid-19 on consumer behavior in the United States, they stated that they would continue to take personal precautions even if coronavirus measures are relaxed (KANTAR, 2020). MAP consumption is expected to increase with age, and elderly people consume more because they know the use and benefit of MAPs. People born and raised in rural areas affect their MAP consumption because they know MAP, are familiar with its use, and collect and use MAPs from nature. Also, it is known that women tend to consume MAP more than men. The research findings obtained are in parallel with other studies. In another study examining the MAP consumption habits in Erzurum province, it was stated that 50.3% of the MAP consumers are women and 46.1% of the MAP consumers are elderly (Kadioglu et al., 2021). Giddens (2005) and Hunt and Lightly (2010) stated in their studies that women use MAPs more than men. In another study, it was stated that rural-urban differences also affect consumption habits and preferences (Guthrie et al., 1995). In the study conducted by KANTAR, it was found that countries worried about coronavirus include Turkey and Spain, and the anxiety level increases with

advanced age (KANTAR, 2020). According to the Ipsos research, the consumption of cologne, vinegar, and pasta increased during the Covid-19 pandemic, followed by the consumption of pickles with the belief that it increases immunity (IPSOS, 2020). In the research commissioned by DELOITTE consulting company, it was found that the consumption of supportive health products such as honey, vitamins, and herbal products as an additional supplement in the health field increased, in addition to the consumption of gloves and masks (DELOITTE, 2020).

Since ancient times, the belief that herbal treatment, which has benefited from plants to obtain nutrients and health, heals and protects diseases from diseases has increased. In our study examining MAP consumption during the pandemic. It has been determined that participants mainly consume MAP for health purposes, strengthening the immune system, and for sleep and stress problems. It has been determined that the most preferred plants are rosehip, lime, mint, and ginger and they are collected from nature. It has been determined that the plants they buy MAP products from pharmacies and consume more than 150 grams per month. The mostly consumed herbs are green tea and udi hindi. The absence of any vaccine or drug at the beginning of the pandemic increased the belief/hope of consumers that protective measures should be taken against the pandemic with herbal treatment.

CONCLUSIONS

As a result, it has been determined that as the age and benefit variables of MAP consumption increase and as the variables of price, side effect, duration of use, contribution content, access, and hope decrease, consumption increases. Until vaccine or medicine to cope with the pandemic has been found, the tendency towards traditional medicine and herbal treatment increased in our country as well as in the whole world. It has become widespread knowledge that medicinal herbs can help people, directly or indirectly, to feel good and protect from contamination. It is common to believe that the use of traditional medicines and treatments are no harm. What matters is that people feel more comfortable, peaceful, and powerful. It was inevitable that MAPs were preferred and their consumption increased or the product range expanded to overcome the process by strengthening the immune system, preserving body resistance, and without demoralization. It is thought that the use of MAPs as a protective measure will continue until the pandemic ends.

Statement of Conflict of Interest

We declare that there are no conflicts of interest among the authors.

Authors' Contributions

BK, leading the study used in the writing of the article, evaluating the data, statistical analysis and writing the article. SK, statistical analysis and writing of the article, preparation and conduct of surveys. All authors have read and approved the last article.

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