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Research Article

Use and Beliefs about Effects of Spices on Health in Adults

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Abstract

Aim: This research was planned and conducted to evaluate the use of some spice types for health and beliefs about effects of spices on health of adults between the aged 18-64.

Materials and methods: Participants were asked to fill out a questionnaire form by face to face interview in order to determine their general characteristics and use of spices with regard to their health.

Result: Totally, 95.6% (Male: 96.2%, Female: 95.3%, p>0,05) adds spice to their foods and 36.9%(Male: 37.5%, Female: 36.6%, p>0,05) to their beverages. While their reasons for using spice were evaluated, it was determined it was added, most commonly, to flavor (45.6%), to make it smell good (15.3%) and because it is healthy (12.2%). Moreover, 88.1% (Male: 86.0%, Female: 89.0%, p>0,05) of the individuals think that spices have positive effects on health. The health problems on which spices are thought to have positive effects in descending order, however, are flu/common cold (71.2%), cough (55.3%), digestive system diseases (41.0%) and obesity (20.8%). 79.2% of the individuals with a chronic disease diagnosed by a physician use spice. 70.8% and 82.9%, respectively, of male and female individuals with a chronic disease use spice. Totally, 93.2% of those without any chronic disease, 96.5% of males and 92.5% of females use spices. Statistically significant difference was determined between frequencies of spice use in individuals with or without a chronic disease among all individuals and both genders ($p<0.05$).

Conclusion: Frequency of spice use among Turkish adult individuals is common and spices are thought to be used for health and to have positive effects. While gender is not an important determinant in spice use among Turkish adult individuals, it may be an important determinant of status of having a chronic disease.

Keywords: Spice; Health; Adults

Introduction

Spices play an important role as flavouring coloring or preserving agents in the diet and are used throughout the world [1]. Spices refer to the dried part of a plant that contain volatile oils or aromatic flavours such as, buds (cloves), bark (cinnamon), root (ginger), berries (black pepper), seeds (cumin, coriander) [1,2].

While consumption of spices is generally higher in Asian countries [3], there has been an increasing trend in their intake in other countries because of food habits, preference for various ethnic and spicy foods and some health benefits [4,5].

Various phytochemicals present in spices have been recognized to have health promoting benefits [6]. Phytochemicals are bioactive plant compounds that can be used as antioxidant, antimicrobial, antibacterial, anticancer agents and are reported to prevent cancer, cardiovascular and inflammatory diseases [6]. In some *in vivo* and animal studies, it was shown that spices can have antioxidant, antimicrobial, anti-inflammatory, gastro-protective, antidepressant and antiaging activities [4,7]. Due to these reported health effect, spices are commonly considered and used as medicinal plants by consumers [4].

This research was planned and conducted to evaluate the use of some spice types for health and beliefs about effects of spices on health of adults between the aged 18-64.

Material and Methods

Subjects

The data were collected in Turkey. The research was conducted on 1125 adults (244 males and 781 females, 28.0±10.64 years) aged between 18 and 64. Clear explanations were provided for the individuals with regard to the purpose of the study, after which informed consent was obtained from all participants in accordance with the Declaration of Helsinki (World Medical Association).

Data collection

Participants were asked to fill out a questionnaire form by means of face to face interview in order to determine their general characteristics and spice habits with regard to their health. In the questionnaire form, in the first section information concerning general information and medical status of individuals is included. In the second section status of spice use, reasons for their preference and their beliefs about health effects of spices were investigated.

Statistical evaluation

All statistical analyses were performed using SPSS (The Statistical Package for Social Sciences) Version 22.0 (SPSS Inc., Chicago, IL, USA). Counts, percentage (%), and mean ± standard deviation (SD) values were taken for the evaluation of the data. For comparison of general characteristics, chronic disease status, status use, reasons and medical beliefs of spice by gender, chi-square test was used. Status of spice use was also compared by status of having a chronic disease by using chi-square test. Questions in which more than one choice was marked were analyzed by multiple response method. P<0.05 was determined as the level of significance for all of the analyses.

Result

Table 1: Evaluation of individuals' general characteristics and chronic disease status.

	Male (n: 244)		Female (n: 781)		Total (n: 1125)			
	n	%	n	%	n	%	χ^2	p
Marital Status								
Single	200	58.1	548	70.2	748	66.5	16.285	p<0.05
Married	144	41.9	233	29.8	377	33.5		
Place of Residence								
Urban	251	73	571	73.1	822	73.1	0.003	p>0.05
Rural	93	27	210	26.9	303	26.9		
Status of having a Chronic Disease								
Yes	58	16.9	151	19.3	209	18.6	0.966	p>0.05
No	286	83.1	630	80.7	916	81.4		
Diagnosed Chronic Diseases*								
Digestive system diseases	20	25.3	39	18.9	59	20.7	0.029	p>0.05
Endocrinological diseases	3	3.8	52	25.3	55	19.3		
Diabetes	14	17.7	25	12.2	39	13.7		
Hypertension	15	19	24	11.6	39	13.7		
Cardiovascular diseases	12	15.2	24	11.6	36	12.6		
Musculoskeletal diseases	6	7.6	29	14.1	35	12.3		
Mental problems	6	7.6	8	3.9	14	4.9		
Cancer	3	3.8	5	2.4	8	2.8		

*More than one choice is marked.

In Table 1 some general characteristics and chronic disease status of individuals are represented. According to this; 66.5% of the individuals are married. 73.1% were residing in urban and 26.9% in rural areas. 18.6% (Male: 16.9%; Female: 19.3%) of the individuals had a chronic disease that were diagnosed by a physician. Diseases diagnosed by a physician in all individuals in a descending order, however, are digestive system diseases (20.7%), endocrinological diseases (19.3%), diabetes (!3.7%), hypertension (13.7%), cardiovascular diseases (12.6%), musculoskeletal diseases (12.3%), mental problems (4.9%) and cancer (4.9%) (Table 1). No statistically significant difference was determined between residence, status of having a chronic disease and diagnosed diseases by gender (p>0.05).

In Table 2 individuals' statuses of adding spice to foods and beverages, and their reasons are represented. According to this; 95.6% (Male: 96.2%; Female: 95.3%) adds spice to their foods and 36.9% (Male: 37.5%, Female: 36.6%) to their beverages. While their reasons for using spice were evaluated, it was determined it was added, most commonly, to flavor (45.6%), to make it smell good (15.3%), for making presentation of foods better (12.2%), and because it is healthy (12.2%) (Table 2). No statistically significant difference was determined between adding spice to foods and beverages, and reason for spice use by gender (p>0.05).

Table 2: Individuals status of adding spice to foods/beverages and reasons.

	Male (n: 244)		Female (n: 781)		Total (n: 1125)			
	n	%	n	%	n	%	χ^2	p
Status of Adding Spice to Foods								
Adding	331	96.2	744	95.3	1075	95.6	0.517	p>0.05
Not adding	13	3.8	37	4.7	50	4.4		
Status of Adding Spice to Beverages								
Adding	129	37.5	286	36.6	415	36.9	0.079	p>0.05
Not adding	215	62.5	495	63.4	710	63.1		

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Reasons for Spice use*								
To flavor	316	53.5	733	42.9	1049	45.6	0.246	p>0.05
To make it smell good	76	12.9	275	16.1	351	15.3		
For making presentation of foods better	44	7.4	246	14.4	290	12.6		
Because it is healthy	88	14.9	193	11.3	281	12.2		
To color	32	5.4	189	11.1	221	9.6		
To enhance nutritional value	30	5.1	62	3.6	92	4		
For extension of shelf-life of foods	5	0.8	9	0.5	14	0.6		

*More than one choice is marked.

İndividuals' beliefs about health effects of spices are represented in Table 3. According to this, 88.1% (Male: 86.0%, Female: 89.0%) of the individuals think that spices have positive effects on health. The health problems on which spices are thought to have positive effects in descending order, however, are flu/common cold (71.2%), cough (55.3%), digestive system diseases (41.0%), obesity (20.8%), diabetes (14.4%), cardiovascular diseases (14.2%) and cancer (8.0%) (Table 4). No statistically significant difference was determined between status of thinking that spices have positive effects on health and the health problems they think there are positive effects on by gender (p>0.05) (Table 3).

Table 3: Beliefs about effects of spices on health.

	Male (n: 244)		Female (n: 781)		Total (n: 1125)			
	n	%	n	%	Count	%	χ^2	p
Positive Effect of Spice on Health								
Yes	296	86	695	89	991	88.1	1.97	p>0.05
No	48	14	86	11	134	11.9		
Health Problems in which they are Believed to be Effective*								
Flu/common cold	234	68	567	72.6	801	71.2	1.64	p>0.05
Cough	186	54.1	436	55.8	622	55.3		
Digestive system diseases	135	39.2	326	41.7	461	41		
Obesity	60	17.4	174	22.3	234	20.8		
Diabetes	42	12.2	120	15.4	162	14.4		
Cardiovascular diseases	51	14.8	109	14	160	14.2		
Cancer	26	7.6	64	8.2	90	8		

*More than one choice is marked.

Frequencies of use of spices in foods and beverages by individuals' statuses of having a chronic disease are represented in Table 4. According to this, 79.2% of the individuals with a chronic disease diagnosed by a physician use spice. 70.8% and 82.9%, respectively, of male and female individuals with a chronic disease use spice. Totally, 93.2% of those without any chronic disease, 96.5% of males and 92.5% of females use spices. A statistically significant difference was determined between frequencies of spice use in individuals with or without a chronic disease among all individuals and both genders (p<0.05).

Table 4: Status of spice use of individuals according to having a chronic disease*.

	Male				Female				Total			
	Using Spice		Not Using Spice		Using Spice		Not Using Spice		Using Spice		Not Using Spice	
	n	%	n	%	n	%	n	%	n	%	n	%
Chronic disease												
Yes	17	70.8	7	29.2	58	82.9	12	17.1	75	79.8	19	20.2
No	110	96.5	4	3.5	221	92.5	18	7.5	331	93.8	22	6.2
	χ^2=17.793, p<0.05				χ^2=5.706, p<0.05				χ^2=17.416, p<0.05			

*In evaluation of frequencies of spice use, behaviors of adding spice to foods and beverages were evaluated together.

Discussion

Spices are herbal products or mixture of these, which are used to give taste, seasoning and aroma to foods [8]. Their pleasant odor, flavor-enhancing and appetizing effects are frequently used in gastronomy. In fact, spices have had the opportunity to be frequently used as pursuant to religious beliefs and for treatment of diseases since the early ages [4,8]. In this study, adult individuals' spice use in relation to health and their beliefs about effects of spices on health were evaluated.

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In conclusion of this study, it was determined that majority of the individuals (95.6%) added spice to their foods and, to a lesser extent (39.6%), to their beverages, and frequency of adding spice did not differ by gender (Table 2). Being such as to support this, in a study conducted with Turkish women, it was determined that 94.6% of the women added spice [8]. These studies have shed light on that frequency of spice use is extremely high in Turkish society.

To date, as a result of orientations to natural diet, use of some spices as antimicrobial, anti-oxidative, hypotensive, analgesic and sedative has been increased [9]. As an important finding in this study, it was determined that Turkish adult individuals used spices for health third most commonly after being used to give taste and smell (Table 2). In Turkey, most commonly black pepper, cumin, thyme, clove, ginger, pimento, mint, red pepper and aniseed were used traditionally for a variety of purposes [10]. In a previous study, however, it was determined that Turkish women frequently used garden sage, mint and thyme spices for herbal treatment [8]. In the present study, use of all kinds of spices for health, without investigating spices individually, were investigated and it was determined that, regardless of the gender, majority of the individuals (88.1%) thought that spices have positive effects on health (Table 3).

In some societies, spices have been traditionally used in wound healing, treatment of gastrointestinal symptoms, diabetes, rheumatic disorders, rhinitis, common cold and pain [11,12]. It was determined with this study that Turkish adult individuals think spices have positive effects most commonly on flu/common cold, cough and digestive system (Table 3). In some previous studies, these thoughts of Turkish adult individuals have been scientifically proven [12-14]. It has been determined that many Chinese medical herbs have effects similar to antiviral medications in treatment and prevention of influenza, and they are partially effective in treatment of sore throat [13,14]. Again, it has been supported that spices enhance digestion by stimulating via salivary and gastric secretions. In addition to this, it was also determined that they may reduce gastrointestinal cancers by shortening transit time of foods through the gastrointestinal tract [12].

In this study, use of spices, reasons for use and beliefs about health did not differ by gender in general. However, as an interesting finding, status of having a chronic disease was determined to reduce frequencies of spice use in both genders partially (Table 4). Although studies generally report that spices are used for prevention and treatment of some diseases [11,12,15], this study has shed light on that individuals may experience even a little confusion about spice use in presence of a chronic disease.

In conclusion, while frequency of spice use among Turkish adult individuals is common, spices are thought to be used for health and to have positive effects. While factor of gender is not an important determinant in spice use among Turkish adult individuals, it may be an important determinant of status of having a chronic disease. It is necessary to conduct much more studies on this issue.

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