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Research Article

Determination of Protection Methods from Communicable Diseases

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Abstract

Background: Determining the measures taken by adults against infectious diseases is important for the development of measures to be taken against epidemic diseases. The data to be obtained will pave the way for policy makers to evaluate whether the measures taken are incomplete or erroneous or to what extent they are applicable.

Methods: This study consists of people over the age of 18 who agreed to participate in the research in the Central Anatolia region of Turkey. The study was completed with 526 participants. Data were collected with a form prepared by the researcher. Descriptive statistics were used in the analysis of the data.

Results: The mean age of the participants was 41±2.7 years, 67.3% were women, 46.42% were living in the city, 91.25% were unemployed, 48%, 66 of them had income equal to their expenses, 95% .43 of them are married. 7.79% of adults have chronic diseases, 62.35% obey curfews, 81.36% use masks, 9.89% magnesium and calcium, 6.84% chestnut, 6% It was determined that 6.84 of them used honey and 7.79% of them used zinc.

Conclusion: Participants in the research are willing to strengthen the immune system and use supplements in this regard, mass media raises awareness about products that are claimed to strengthen immunity, but they are not aware of the harm of these products. It is not put into use without the approval of official institutions and is used without investigating its long-term effects. It has been determined that individuals can create strong defenses by adding their own precautions to infectious disease measures. Adults should be informed about the use of supplements, vitamins and minerals.

Keywords: infectious disease; prevention health; prevention; healthy life; defense; health behavior

Introduction

Disease can be described as all of the conditions that prevent the living thing from performing its basic life functions and that slow down or make the body functions dysfunctional. Infectious disease is a type of disease that has the capacity to infect a large number of living things by transferring the disease from its source to another living thing by various methods and continuing the cycle. The World Health Organization examines all the ongoing infectious diseases around the world together with local governments and publishes status reports at various times. Difficulties in accessing clean water, economic crises and wars also limit protection against infectious diseases and limit the growth rate and welfare of the population. Millions of people have died in epidemics known throughout history. More than 6 million people died in the COVID 19 pandemic alone. Especially the COVID 19 pandemic, which started in December 2019, has shown how quickly infectious diseases can spread and what measures can be taken. As a result of the rapid spread of a contagious disease, measures that make life difficult such as curfew, distance, and mask requirement have caused life to stop [1-3]. Although the measures against COVID 19 have been relaxed in different countries of the world, the threat is still not over. Personal precautions against diseases continue to be taken. The monkeypox virus, which has emerged recently and has started to be seen in dozens of countries, infects people and causes death. According to the spread of the disease, countries shape their own measures. In short, infectious diseases emerging today spread in a short time and before one ends, another begins. It can be said that one of the biggest gains of COVID 19 is the development of methods of protection from diseases among people. Since diseases can be transmitted by contact from various surfaces, many measures such as cleaning the surfaces with disinfectants, washing hands with soap and water frequently, washing clothes with detergents at a temperature of at least $60C^0$, wearing a mask, not being in closed environments or airing frequently have entered our lives and started to direct our home and social life. [4-5]. During all this time, not only personal gains, but also the importance of consuming supplementary food products, vegetables and fruits, and the value of nutrition with milk and dairy products and proteins have come to light.

In addition, there are different methods of protection from diseases in places such as Turkey in the Mediterranean and Middle East regions, where various nations have lived throughout history, and where cultural accumulations from ancestors are concentrated. For this reason, it is very important what methods the society uses to protect itself from infectious diseases after a contagious disease has just passed.

The aim of this study is to determine the methods used in the prevention of infectious diseases and to present these methods to the scientific world by passing them to the literature.

Methods

Type of Study: This descriptive cross-sectional study was conducted with individuals over the age of 18 who applied to a public hospital in the Central Anatolia Region of Turkey for any reason, to determine the methods of protection from infectious diseases.

Sample: The research was conducted with people who applied to a university hospital in the Central Anatolia Region of Turkey and agreed to participate in the research. The research was conducted with adults over the age of 18, who can speak and understand Turkish, and who do not have any psychological disorders or physical disabilities. All adults who agreed to participate in the study without sampling were included in the study. The study was completed with 526 people. The data obtained in this study were considered to be true information because of the fact that the data obtained after the intense period of the pandemic process and the fear of administrative sanctions for violating the relevant health bans during the pandemic process disappeared.

Data Collection Tools: Data were collected by the researcher using a questionnaire prepared in line with the literature. It consists of 17 questions about demographic characteristics (age, gender, class, marital status, etc.) and methods of protection from infectious diseases of the people participating in the study.

Application of Data Collection Tools: Data were collected by the researcher by face-to-face interview method using a questionnaire form.

Evaluation of Data: Data were evaluated using numbers, percentages, mean, and standard deviations on the computer.

Results

Of the participants, 67.3% were women, mean age was 41±2.7 years, 46.42% lived in the city, 90.49% had a nuclear family, 91.25% were unemployed, 48.66% Their income is equal to their expenses, 95.43% of them are married (Table 1).

Table 1 shows the distribution of the study participants on demographic data.

Caracteristics			
		n	%
Age average	41±2,7		
Gender	Woman	354	67,3
	Man	172	32,7
Place of residence	Village-district	70	13,30
	City	402	46,42
	Big city	54	10,28
Family form	Nuclear family	476	90,49
	Extended family	50	9,51
Working status	Employed	46	8,75
	Inoperative	480	91,25
Income status	Income lower than expenses	224	42,58
	Income equal to expenses	256	48,66
	Income more than expenses	46	8,76
Marital Status	Single	24	4,56
	Married	502	95,43

Table 1. Distribution of some demographic data of the participants

shows the data of the study participants on infectious diseases.

			n	%
Presence of Chronic Disease		Yes	41	7,79
		No	485	92,20
Status of Obtaining Information on Infectious Diseases		Yes	224	42,58
		No	302	57,42
From Illness During COVID19 Changes Made to Protect	I Complied With Curfew Restrictions	Yes	328	62,35
		No	198	37,64
	I Canceled Visits at Home	Yes	428	81,36
		No	98	18,63
Prevention Methods from Infectious Diseases	I Used Mask	Yes	428	81,36
		No	98	18,63
	I Carried Hand Sanitizer	Yes	102	19,39
		No	424	80,61
	I Used Gloves	Yes	186	35,36
		No	340	64,64
	I Washed the Laundry at least 60 C0.	Yes	502	95,44
		No	24	4,56
	I placed an order at the address.	Yes	358	68,06
		No	168	31,94
	I Didn't Use Public Transport	Yes	450	85,55
		No	76	14,45
	I Didn't Go to Public Places	Yes	254	48,29
		No	272	51,71
	I Followed Social Distancing	Yes	526	100,00
		No	0	0,00
Supplementary Foods Used to Prevent Communicable Disease	Vitamin D		68	12,93
	B Vitamins		54	10,27
	C vitamin		79	15,02
	Chamomile Tea		18	3,42
	Black Cumin Seed		57	10,84
	Sage		45	8,56
	rosehip		48	9,13
	Mint and lemon tea		186	35,36
	Blackhead Grass		54	10,27
	Linden Tea		88	16,73
	Thyme		84	15,97
	Ginger		73	13,88
	Turmeric		71	13,50
	Tablet with Magnesium and Calcium		52	9,89
	Zinc-containing Tablet		41	7,79
	Ferrous Tablet		87	16,54
	Copper-containing Tablet		12	2,28
	Omega 3 and 6		68	12,93
	Chestnut Honey		36	6,84
	Bee pollen		82	15,59
	Bee milk		14	2,66

Table 2: Distribution of the characteristics of the participants regarding the methods of protection from infectious diseases

Discussion

Although the effects of COVID 19, which started at the end of 2019 and affected the whole world, differed, it led to changes in lifestyles among all people. Many different models have been made to prevent the transmission

of the disease. Even mathematical formulas have been developed [6]. One of the most effective ways to prevent diseases in the upper and lower respiratory tract is the use of masks. Mask use has peaked in the COVID 19 pandemic and there has been a shortage of disposable masks all over the world. The countries even sent the mask as a gift to show that they support each other and establish good relations. In our study, it was determined that 81.3% of the participants used masks. Franz et al. (2022) and Scott et al. (2021), in their study, determined the rate of mask use between 37-98%. Mask usage rates are relatively high in Turkey and it can be stated that the majority of people care about using masks [7-8].

Of course, as there are many studies on the prevention of diseases by using masks during the pandemic period, many studies have also been conducted showing the harms of the mask [9-10]. In particular, it has many different effects such as the release of CO_2, the uptake of O_2, the rates of decomposition from the lungs, the PCO_2 and PO_2 values, and the increase in the pH of the blood due to CO_2. In fact, all these effects are effects that can be reduced by maximizing curfews and social distance rules. Another habit is to carry disinfectant in a pocket or handbag. The transfer of microbes from the hands has been known for centuries. Especially in Turkish culture, there are many social traditions such as offering the liquid, which is described as ethyl alcohol-based cologne, to be rubbed on the hands, offering cologne when leaving the washbasin in public washrooms, and continuing this treat on intercity buses. Most disinfectant ingredients consist of alcohol, partly surfactant, and other chemicals that cause cell lysis.

19.39% of the participants in our study reported that they used hand sanitizer. Israel et al. (2020) reported that hand hygiene was given importance during COVID 19 and there was an increase in hand hygiene requirement compliance rates. In the related literature, no study has been found showing the frequency of hand disinfectant use [11].

In addition, it can be evaluated that the increase in the use of gloves prevents the increase in the use of hand disinfectant as necessary. In addition, it has been evaluated that the majority of the population is Muslim and drinking alcohol is prohibited by the religion of Islam, that some users think that it is not completely appropriate to handle alcohol, which may prevent this practice, and that some users do not use it because the residues of the surfactant on their hands cause discomfort [12-13]. In our study, it was observed that 95.44% of the participants applied the recommendation made by the Turkish Ministry of Health to wash the clothes in a washing machine with detergent at at least 60 °C, and this is a very high rate. Washing clothes at a temperature of at least 60 °C with a detergent that aims to kill bacteria by destroying the structure of the membrane and the sheath of viruses is seen as a powerful process to prevent COVID 19 virus transmission. It has also been determined that exposures to similar temperatures with different durations show these effects in studies conducted to carry out COVID 19 inactivity [14-16]. The importance of social distance, the implementation of curfews and quarantine measures for patients caused the emergence of different sectors or the growth of existing business lines by leaps and bounds. Some of these are grocery shopping and food services to homes. 68.02% of the participants in the study added "not going to the market" to their COVID 19 precautions and did not join the crowd. In addition, the restriction of the working hours of the markets, which is one of the wrong additional precautions, caused excessive density in some hours and it was stated that the markets could become the center of contamination at some points [17-19]. Again, the service hours of public transportation vehicles were changed and reduced, in this way, it was aimed to prevent social mobility. 100% of the participants stated that they adhered to social distancing. However, it has been stated in studies that the social distance is at least 1.5 meters and that it should be increased depending on the direction and severity of the airflow [20-22]. Some of the measures taken against COVID 19 are the fact of strengthening the immune system. To protect against COVID 19 and all other diseases, strengthening immunity is the only protection or to overcome diseases with the least damage. For this reason, people wanted to strengthen the immune system by using various vitamins, minerals and herbal drinks/foods.

He stated that 12.93% of the people in Central Anatolia of Turkey, where the research was conducted, use vitamin D, 10.27% use B vitamins, and 15.02% use vitamin C. In many studies, there are data that vitamin intake reduces the rates of contracting COVID 19 disease and hospitalization. It can be evaluated that increasing health literacy and sharing information about vitamins in mass media during the pandemic increase the use of supplemental vitamins [23-28].

In addition, cytokines, which have a stimulating role in diseases, can be activated by various stimulants. They are important biological molecules that protect the body by responding to diseases in T cells and macrophages. The presence of antioxidant properties of chamomile tea and its calming effect on living things [29],

Black cumin strengthens cognitive capacity and increases antioxidant capacity [30] and

The effect of sage tea on various cancers and improving blood lipid levels has been shown in various studies. [31-32]

In addition, the most major content of rosehip tea is vitamin C, and there are antioxidants and phenolic contents [33-34].

It has been stated that the vitamin C, flavonoids, tannins, polyphenols and saponins it contains, and the antimicrobial, antifungal, anesthetic, anthelmintic and antioxidant properties of mint reduce the resistance of E. coli to penicillin [35-39].

Blackbash has antiseptic, expectorant, anti-inflammatory, antioxidant, antimicrobial, analgesic, insecticidal, diuretic, and carminative properties [40-43].

The most important features of linden are that it contains iron, manganese, zinc, copper elements and flavonoid and phenolic content [44-45].

It has been reported that thyme plant reduces the resistance of E. coli to penicillin, and that thyme is good for insomnia, has antimicrobial properties, and contains phenolic compounds [46-48].

The ginger plant is used in the treatment of nausea, vomiting and poisoning, as well as in the treatment of pain relief. In addition to this information, ginger has antioxidant, anti-inflammatory and antitumor properties, and its effectiveness in cardiovascular, neurological and respiratory diseases is still under investigation [49-52].

It has been evaluated that turmeric improves cognitive functions, reduces lipid oxidation, plays an active role against cancer, has a healing effect in non-alcoholic fatty liver disease, and can also cause liver damage in complete opposition to these effects [53-56].

It has been shown that the use of magnesium-containing tablets reduces the level of C-reactive protein, reduces the level of NO, reduces the risk of preeclampsia in pregnant women, contributes to the improvement of glycemic structure in patients with Type 2 diabetes, reduces UV-B and ROS-induced effects, and regulates blood serum Ca and Parathyroid hormone levels [57 -59].

It has been stated that calcium tablets improve bone osteoporosis, pregnancy hypertensive disorders, and when taken together with vitamin D, it helps to treat cardiovascular diseases, calcium supplementation reduces urate level in gout patients, and is protective against cancer [60-64].

Zinc is necessary for the production, storage and release of the hormone insulin. Zinc deficiency is common in diabetic patients. Zinc supplementation has been shown to reduce the death rate of primary effusion lymphoma cells after radiation exposure, decrease CRP and hs-CRP levels, strengthen oxidant capacity in pigs, increase appetite in children and strengthen their hair, in order for pancreatic islet cells to perform their duties better in diabetic patients, and also on cognitive activity. It has been stated that it increases the levels of neurotrophic factors originating from [65-69].

In addition to its role in hemoglobin production, it has been stated that with its use from birth, iron contributes to high hemoglobin, high body weight and greater motor development in infants, reduces anemia, but may increase the risk of death in children with HIV [70-71]. It has been stated that copper supplementation improves sperm quality, has functions in blood pressure control, connective tissues, electron transfer, myelin formation, regulation of hormone synthesis and blood coagulation, and cardiovascular diseases [72-73].

It has been stated that patients with high omega 3 blood levels have a lower risk of stroke. People with omega 6 levels higher than omega 3 were considered to have a higher risk of stroke. In addition to all these, omega 3 and omega 6 have a curative effect on dry eye disease, the use of omega 3 and omega 6 in 1:1 and 1:4 ratios is beneficial for chronic inflammatory and

autoimmune diseases, but different combination ratios may harm the living thing. It has been shown that people with higher levels of omega 3 may be prone to obesity. As additional information, it has been evaluated that chemotherapy-induced toxicity can be achieved by reducing the Omega 6/Omega 3 ratio [74-78].

Chestnut honey reduces neuronal damage caused by a high-fat diet, increases antioxidant capacity when consumed with propolis, decreases DNA synthesis in hepatocellular carcinoma cells, and is one of the foods with the highest kynurenic acid content. effects have been shown [79-82].

It has been stated that royal jelly and pollen can reduce IgE levels, reduce histopathological damage, balance bioamines, have a positive effect on intestinal microbiota, prevent bone resorption, increase muscle building speed when combined with exercise, and drone milk has effects on fertility, although it is not supported by clinical studies [83-85].

In the study, it was determined that many different methods and supplementary food products were used to protect against infectious diseases. These methods and products have a protective effect against many diseases and strengthen the immune system. However, in addition to all these positive effects, the study that determines the effects of using molecules for a long time and without dose adjustment is limited. Continuous and high-level stimulation of tissues can cause damage. An example of this is liver damage that may develop due to long-term use of turmeric. Many elements such as iron, zinc, copper and magnesium obtained from herbal teas must remain in balance in a sharp line to ensure homeostasis. It has been reported that excess copper accumulation causes Wilson's disease, and when it is taken together with zinc, copper deficiency can be experienced by absorbing a small amount, excess calcium can accumulate with decrease in kidney functions, and the balance between omega 3 and 6 can lead to many diseases, especially cardiovascular damage.

Conclusion

As a result, different methods have been developed depending on the geography in order to protect against infectious diseases. The use cases and durations of these methods vary. An important finding obtained from the study is the awareness of the necessity of strengthening the immune system of the COVID 19 pandemic. However, it seems normal to cause harm while trying to strengthen the immune system. For this reason, the methods and supplements used must be approved by official authorities. Otherwise, the intensity and result of the interaction of molecules with each other cannot be determined exactly.

Social awareness of the awareness that each supplement product and method can be harmful as well as beneficial should be created.

Declarations

Ethics approval and consent to participate

Ethical Dimension of the Study: In order to conduct the study, ethics committee approval was obtained from the Yozgat Bozok University Ethics Committee with the decision number 37/03, and permission from the institution where the research would be conducted. All stages of the study were carried out in accordance with the Declaration of Helsinki. Verbal and then written consent was obtained from the research participants. An informed consent form was signed by all participants.

Consent for publication

Not applicable.

Competing interests

Has not declared any conflict of interest.

Abbreviations

PCO2 The partial pressure of carbon dioxide
PO_2 The partial pressure of oxygen
CRP C reactive protein
HIV Human Immunodeficiency Virus
NO Nitric oxide
UV-B Ultraviolet B rays
ROS Reactive oxygen species
Ca Calcium

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Authors' contributions

The author read and approved the final manuscript.

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Availability of data and materials

Coded, de-identifed data will be made available upon reasonable request to the corresponding author.

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