 https://doi.org/10.35232/estudamhsd.634610

EVALUATING THE KNOWLEDGE AND OPINIONS OF INDIVIDUALS OVER THE AGE OF 18 CONCERNING INFECTIOUS DISEASES

Aliye Bulut[1], Çağla Yiğitbaş[2], Ömer Bayhan[1]

1- Bingöl University Faculty of Health Sciences Department of Nursing
2- Giresun University Faculty of Health Sciences Department of Midwifery

Abstract
Infectious disease is a social health problem that occurs with the direct or indirect transfer of a specific infectious agent or its toxic products from a source to a susceptible person. This study was conducted to determine the knowledge, and opinions of individuals living in the city center of Bingol about infectious diseases. The population of this descriptive and cross-sectional study consisted of individuals aged 18 years and over living in the city of Bingol. The study was completed with 638 people. The variables of age, educational level and profession in the study made a difference in terms of the statuses about knowledge, attitude and opinions ($p<0.05$). Briefly all the parts of the system from family physicians to patients, from family health centers to community health centers, from primary care to laboratories, and from cities to countries have responsibilities in the fight against infectious diseases.
Keywords: Infectious diseases, knowledge level, adulthood.

18 YAŞ ÜSTÜ ERİŞKİNLERİN, BULAŞICI HASTALIKLAR KONUSUNDAKİ BİLGİ ve GÖRÜŞLERİNİN DEĞERLENDİRİLMESİ
Bulaşıcı hastalık, özel bir enfeksiyöz etkenin ya da onun toksik ürünlerinin, bir kaynaktan duyarlı kişiye doğrudan ya da dolaylı olarak geçmesiyle oluşan, toplumsal bir sağlık sorunudur. Bu araştırma, Bingöl il merkezinde yaşayan bireylerin, bulaşıcı hastalıklar konusundaki bilgi ve görüşlerini tespit etmek amacıyla yapılmıştır. Tanımlayıcı kesitsel tipte olan çalışmanın evrenini Bingöl İlinde yaşayan 18 yaş ve üstü bireyler oluşturmuştur. Araştırma 638 kişi ile tamamlanmıştır. Çalışmada, yaş, eğitim düzeyi ve meslek değişkenlerinin bilgi, tutum ve görüşle ilgili olarak ele alınan durumlar açısından fark oluşturduğu görülmüştür ($p<0.05$). Bulaşıcı hastalıklarla mücadelede, aile hekimlerinden hastalara, aile sağlığı merkezlerinden toplum sağlığı merkezlerine, birinci basamaktan laboratuvarlara, şehirlerden ülkelere, kısaca sistemin birlikte hareket eden tüm parçalarına sorumluluk düşmektedir.
Anahtar kelimeler: Bulaşıcı hastalıklar, bilgi düzeyi, erişkin.

Sorumlu Yazar / Corresponding Author: *Asst. Prof. Dr. Aliye Bulut*
Bingol University, Faculty of Health Sciences, Department of Nursing. Bingöl/ Turkey.
e-posta / e-mail: *aliyedemirok@yahoo.com*
Geliş tarihi / Received : *18.10.2019,* ***Kabul Tarihi / Accepted:*** *25.12.2019*

Nasıl Atıf Yaparım / How to Cite: *Bulut A, Yiğitbaş Ç, Bayhan Ö. Evaluating The Knowledge and Opinions of Individuals Over The Age of 18 Concerning Infectious Diseases. ESTUDAM Public Health Journal. 2020;5(1):1-9.*

Introduction

Infectious disease is a social health problem that occurs with the direct or indirect transfer of a specific infectious agent or its toxic products from a source to a susceptible person (1). All of the living creatures such as human, animals, and plants or nonliving creatures such as soil on which the agent lives, is dependent in order to survive, multiplies to pass to a sensitive host are called as infection source (2). Many micro-organisms seen in the society can live, develop and multiply on humans or animals without giving any clinical signs. This condition is called as infection. When the micro-organism causes fever, vomiting, weakness and similar symptoms, it is called as infectious disease (1).

In order for the society to be healthy, it is required to protect the health of the individuals constituting the society. For this purpose, diseases should be prevented, early diagnosis and treatment services should be given to patients (3). However, infectious diseases can reach to extents that threaten society by infecting healthy people in a variety of ways. The damages infectious disease can bring to society can be summarized as the deterioration of the social life of the society, disruption of health services, death and sequelae, economic losses and the ease of international spread of the diseases. Due to their potential to cause outbreaks that may affect large masses, detecting and reporting infectious diseases are of great importance in order to take measures to protect public health (4).

Infectious diseases are among the top ten causes of death worldwide. In 2016, more than half of all deaths in low-income countries were caused by infectious diseases and diarrheal diseases and tuberculosis are among the top ten causes of death worldwide. Although less than 7.0% of deaths in high-income countries were associated with infectious diseases in 2016, lower respiratory infections which caused 3 million deaths in 2016 worldwide were determined to be among the leading causes of death in all income groups. In 2016, diarrheal diseases caused 1.4 million deaths. Tuberculosis, which is among the top ten causes of death worldwide, is estimated to cause 1.3 million deaths worldwide. Although HIV/AIDS is not among the top 10 causes of death in the world, it is estimated that 1 million people died worldwide in 2016 due to HIV/AIDS (5).

When disease burden studies in Turkey about infectious diseases are considered, it is observed that there is a decrease in infectious disease burden but there is an increase in non-infectious disease burden. Many factors such as urbanization, industrialization, air pollution, rapid population growth, inequality in income distribution, unhealthy nutrition and technological developments can be regarded as several factors behind why infectious diseases have still been encountered. As a result of these factors, the implementation of protection and control measures becomes more difficult and infectious diseases continue to be seen (6).

We wanted to show that infectious diseases are a common problem not only in Turkey but also in humanity by giving study examples all around the world. Briefly all the parts of the system from family physicians to patients, from family health centers to community health centers, from primary care to laboratories, and from cities to countries have responsibilities in the fight against infectious diseases.

This study was conducted to determine the knowledge, attitude, and opinions of individuals over 18 years of age living in the city center of Bingol about infectious diseases.

Material and Method

The population of this descriptive and cross-sectional study consisted of individuals aged 18 years and over living in the city of Bingol. After the calculation made by using Turkish Statistical Institute (TSI) database, the population consisting of individuals aged 18 years and over was found to be 125.468 for 2018. After the sample selection formula from the group with known population [$(n=Nt^2pq/d^2(N-1)+t^2pq)$, (N=125 468, p=0.5, q=0.5, d=0.04), t=1.96)], the minimum sample size was calculated as 597 at the confidence interval of 95% for number of individuals required to be included in the population. The study was completed with 638 people against the risk of possible losses (incomplete filling, giving multiple answers etc.). The data of the study were completed between January and April 2019 after obtaining ethical approval and institutional permissions. The participants consisted of people who volunteered to participate in the study according to the improbable sampling method and met the study inclusion criteria. The number of samples targeted by random home visits was reached. The data were collected through face-to-face interview method using the questionnaire developed by the researchers in accordance with the literature.

The Inclusion Criteria for the Sample Group: Being 18 years old and over, having cognitive competence (time, space orientation), and being voluntary to participate in the study.

Data Collection Tools: The questionnaire prepared by the researchers upon the related literature was applied to the participants who met the inclusion criteria. The questionnaire consists of a total of 25 questions. The first seven questions contain demographic characteristics. The remaining questions are intended to determine if they had infectious disease or not and to identify their knowledge, attitudes and opinions about these diseases (for example, the source of your information about infectious diseases, do you pay attention to the fliers about infectious diseases in the healthcare institutions, which one(s) of the followings are the method(s) of protection from infectious diseases? Etc.).

Independent Variables of the Study: Descriptive characteristics and health histories.

Dependent Variables of the Study: Variables questioning knowledge, attitudes, and opinions about infectious diseases.

Data Assessment: The obtained data were evaluated via Statistical Package for the Social Sciences-22 (SPSS-22) program and error checks, tables and statistical analyses were performed. Descriptive data were given as percentage and mean ±standard deviation and since the data are categorical in analytic analysis, chi-square was used. Type 1 error level was determined as 0.05.

Ethical Principles and Approvals of the Study: In order to conduct the study, written consent was obtained from Bingol University Scientific Researches and Publication Ethics Committee. Permission from Public Health Directorate of the province where the study was conducted was also obtained. The participants were also informed verbally and with a document attached to the questionnaire in accordance with the Criteria of the Declaration of Helsinki.

Data Collection: After obtaining the institutional permissions, the study was conducted with 638 people meeting the inclusion conditions according to improbable sampling method. It took about 40 minutes to complete a questionnaire. After the data collection, the participants were informed about the health problems they wondered in the questionnaire within the scope of preventive health counseling.

Results

Of the participants, 34.0% were in the age range of 26-35 years and 46.4% were female. The rate of those who were university graduates was 43.3% (Table 1).

It was found that 11.9% of the participants in this study stated that they did not have any knowledge about infectious diseases. The first three information sources related to infectious diseases were educational institutions, health institutions, and printed and visual media, respectively. The participants stated that they had the knowledge mostly about the flu (64.6%). A great majority (81.0%) of the participants stated that vaccine was important in prevention (Table 2).

Table 1: Some characteristics of the participants (n=638).

Characteristics	Number	%
Age (years)		
18-25	229	35.9
26-35	216	33.9
36 years and over	193	30.2
Gender		
Male	342	53.6
Female	296	46.4
The residence place where he/she resided for the longest time		
Village	32	5.0
District	406	63.6
Province	200	31.4
Educational Level		
Illiterate	18	2.8
Primary school graduate	53	8.3
Secondary school graduate	107	16.8
High school graduate	184	28.8
University graduate	276	43.3
Profession		
Housewife	74	11.6
Officer	123	19.3
Worker	88	13.8
Artisan	88	13.8
Student	157	24.6
Healthcare professional	81	12.7
Unemployed	27	4.2
Having difficulty in accessing health services		
Yes	119	18.7
No	519	81.3
Getting any infectious disease		
Yes	472	74.0
No	166	26.0
Having any chronic infectious disease		
Yes	46	7.2
No	592	92.8

Table 2: The participants' knowledge about infectious diseases (n=638).

Characteristics	Number	%
Having knowledge about infectious diseases		
Yes	562	88.1
No	76	11.9
Information sources about infectious diseases (n=624)		
School	236	37.8
Written and visual media	167	26.8
Circle of friends	14	2.2
Health professionals	169	27.1
Family	38	6.1
Most known infectious disease		
Measles	197	30.9
Diphtheria	29	4.5
Flu	412	64.6
Most known notification mandatory infectious disease (n=636)		
Cholera	138	21.7
Rabies	373	58.6
Tuberculosis	22	3.5
Plague	636	16.2
How do infectious diseases infect?		
By air	437	68.5
By contact	116	18.2
By food and drinks	85	13.3
Who are most likely to get infected with infectious disease?		
Those who went to the epidemic location	263	41.2
Those whose families got infected with an infectious disease	157	24.6
Those with weak immunity	218	34.2
Knowledge about prevention methods		
Vaccine	517	81.0
Adequate nutrition	67	10.5
Personal hygiene	54	8.5
institution which is responsible for the report and notification of infectious diseases?		
Ministry of Justice	12	1.9
Ministry of environment and urban planning	17	2.6
Ministry of Health	609	95.5

As seen in Table 3, 69.6% of the participants stated that they paid attention to information about infectious diseases in health institutions. However, the rate of those who found this informing sufficient was 54.4% and the rate of those who found the works of health institutions about infectious disease sufficient was 53.6%. 2.8% of the participants considered the treatment of infectious diseases insignificant. The rate of those who wanted to participate in training studies about infectious diseases was 49.7% (Table 3).

Table 3: Some attitudes and opinions of the participants about infectious diseases (n=638).

Characteristics	Number	%
Status of paying attention on the letters about infectious diseases in healthcare institutions		
Yes	444	69.6
No	194	30.4
Is infectious disease informing sufficient in healthcare institutions? (n=632)		
Yes	344	54.4
No	238	45.6
Do you think the works of the public institutions operating in the field of infectious diseases are sufficient? (n=632)		
Yes	339	53.6
No	293	46.4
What to do to increase the knowledge about infectious diseases? (n=635)		
Educational seminars should be given	285	44.9
Attention should be given to personal hygiene	224	35.3
People should pay attention to their diet	126	19.8
How important are written and visual media in terms of raising awareness about infectious diseases?		
Very important	410	64.3
Important	212	33.2
Undecided	13	2.0
Unimportant	3	0.5
How important is the treatment of infectious diseases?		
Very important	420	65.8
Important	200	31.4
Unimportant	18	2.8
Would you like to participate in training studies on infectious diseases?		
Yes	317	49.7
No	321	50.3

As seen in Table 4, the variables of age (high in those aged between 26-35 years), educational level (high in those with university degree) and profession (high in healthcare professionals) in the study made a difference in terms of the statuses about knowledge, attitude and opinions ($p<0.05$). In terms of paying attention about the information about infectious diseases, the rates of women and those without chronic infectious diseases were found to be higher ($p<0.05$). In terms of seeing the treatment of infectious diseases important, the rate of those without infectious disease history was determined to be higher ($p<0.05$). In addition, the variables of gender, having difficulties in accessing healthcare services and having any chronic disease were found to be insignificant in terms of having knowledge about infectious diseases ($p>0.05$).

Table 4: Distribution of the participants according to some characteristics of their knowledge, attitudes, and opinions on infectious diseases (n=638).

Characteristics	Having Information about Infectious Disease		Test value	Paying attention to the texts about infectious diseases		Test value	Thinking the Treatment of Infectious Diseases Important		Test value
	Yes Number (%)*	No Number (%)*		Yes Number (%)*	No Number (%)*		Important Number (%)*	Unimportant Number (%)*	
Age									
Between 18-25 years	191 (83.4)	38 (16.6)	χ^2=12.151 **p=0.002**	172 (75.1)	57 (24.9)	χ^2=39.82 **p=0.001**	182 (79.5)	47 (20.5)	χ^2=53.26 **p=0.001**
Between 26-35 years	203 (94.0)	13 (6.0)		171 (79.2)	45 (20.8)		149 (69.0)	67 (31.0)	
36 years and older	170 (88.1)	23 (11.9)		101 (52.3)	92 (47.7)		89 (46.1)	104 (53.9)	
Gender									
Male	308 (90.3)	33 (9.7)	χ^2=2.79 p=0.09	224 (65.7)	117 (34.3)	χ^2=5.34 **p=0.02**	224 (65.7)	117 (34.3)	χ^2=0.02 p=0.86
Kadın	253 (86.1)	41 (13.9)		218 (74.1)	76 (25.9)		195 (66.3)	99 (33.7)	
The longest place of residence									
Province	184 (93.4)	13 (6.6)	χ^2=31.21 **p=0.001**	132 (67.0)	65 (33.0)	χ^2=1.21 p=0.54	122 (61.9)	75 (38.1)	χ^2=3.47 p=0.17
District	356 (88.3)	47 (11.7)		284 (70.5)	119 (29.5)		267 (66.3)	136 (33.7)	
Village	19 (59.4)	13 (40.6)		24 (75.0)	8 (25.0)		25 (78.1)	7 (21.9)	
Educational Level									
Illiterate	9 (50.0)	9 (50.0)	χ^2=66.78 **p=0.001**	5 (27.8)	13 (72.2)	χ^2=83.45 **p=0.001**	12 (66.7)	6 (33.3)	χ^2=121.32 **p=0.001**
Primary school graduate	40 (75.5)	13 (24.5)		24 (45.3)	29 (54.7)		21 (39.6)	32 (60.4)	
Secondary school graduate	101 (94.4)	6 (5.6)		55 (51.4)	52 (48.6)		30 (28.0)	77 (72.0)	
High school graduate	148 (80.4)	36 (19.6)		122 (66.3)	62 (33.7)		128 (69.6)	56 (30.4)	
University graduate	266 (96.4)	10 (3.6)		238 (86.2)	38 (13.8)		229 (83.0)	47 (17.0)	
Profession									
Housewife	59 (79.7)	15 (20.3)	χ^2=42.47 **p=0.001**	40 (54.1)	34 (45.9)	χ^2=93.42 **p=0.001**	32 (43.2)	42 (56.8)	χ^2=123.84 p=0.001
Officer	117 (95.1)	6 (4.9)		106 (86.2)	17 (13.8)		97 (78.9)	26 (21.1)	
Employee	83 (94.3)	5 (5.7)		44 (50.0)	44 (50.0)		38 (43.2)	50 (56.8)	
Artisan	75 (85.2)	13 (14.8)		50 (56.8)	38 (43.2)		34 (38.6)	54 (61.4)	
Student	123 (78.3)	34 (21.7)		112 (71.3)	45 (28.7)		124 (79.0)	33 (21.0)	
Healthcare professional	81 (100.0)	0 (0.0)		81 (100.0)	0 (0.0)		79 (97.5)	2 (2.5)	
Unemployed	26 (96.3)	1 (3.7)		11 (40.7)	16 (59.3)		16 (59.3)	11 (40.7)	
Having difficulty in accessing health services									
Yes	102 (85.7)	17 (14.3)	χ^2=1.03 p=0.31	76 (63.9)	43 (36.1)	χ^2=2.26 p=0.13	84 (70.6)	35 (29.4)	χ^2=1.47 p=0.22
No	462 (89.0)	57 (11.0)		368 (70.9)	151 (29.1)		336 (64.7)	183 (35.3)	
Pre-existing any infection diseases									
Yes	445 (94.3)	27 (5.7)	χ^2=61.13 **p=0.001**	328 (69.5)	144 (30.5)	χ^2=0.009 p=0.92	283 (60.0)	189 (40.0)	χ^2=27.81 **p=0.001**
No	119 (71.7)	47 (28.3)		116 (69.9)	50 (30.1)		137 (82.5)	29 (17.5)	
Having any chronic infectious disease									
Yes	40 (87.0)	6 (13.0)	χ^2=0.10 p=0.75	20 (43.5)	26 (56.5)	χ^2=15.97 **p=0.001**	26 (56.5)	20 (43.5)	χ^2=1.91 p=0.16
No	524 (88.5)	68 (11.5)		424 (71.6)	168 (28.4)		394 (66.6)	198 (33.4=	

Discussion

This study was conducted to determine the knowledge, and opinions of 18-year-old and older individuals living in the city center of Bingol about infectious diseases.

The first three information sources about infectious diseases were educational institutions, health institutions and printed and visual media. The participants stated that they had the knowledge mostly about the flu (64.6%). A great majority of the participants (81.0%) stated that vaccination was important in prevention. It has been determined in the literature that the highest vaccination rate is observed in children aged between 6-17 years (7-10). In the study conducted by Hemingway et al., with children aged between 60 months and 5 years, 31% of children with a chronic disease were found not to be vaccinated (11). Especially for children with chronic diseases, it is inevitable to catch the flu epidemic, to experience the symptoms severely and to have the complications. Therefore, it can be said that the parents of children with chronic diseases ignore this situation.

It was found that 69.6% of the participants paid attention to information about infectious diseases in health institutions. However, while the rate of those who found this informing adequate was 54.4%, the rate of those who found the works of health institutions related to infectious diseases sufficient was 53.6%. 2.8% of the participants in the study considered the treatment of infectious diseases insignificant. The participants give great importance to the treatment of infectious disease. The rate of those who wanted to participate in educational works for infectious diseases was 49.7%.

It was observed in the study that age (high in those aged between 26-35 years), educational level (high in university graduates) and occupation (high in healthcare professionals) variables led to a difference in terms of the cases considered about knowledge, attitude, and opinion ($p<0.05$). In terms of paying attention to the information about infectious diseases, the rates of those who were female and had no chronic infectious diseases were found to higher ($p<0.05$). In terms of seeing the treatment of infectious diseases important, the rate of those who did not have the history of infectious disease was higher ($p<0.05$). 53.9% of infectious diseases in the study by Keskinler ÜD (12) and 56.6% of infectious diseases in the study by İbrahim İE and Uçku R (13). were determined to be seen in men. Due to their more active roles in social life, it is expected that NIDs are more common in men. In addition, it was found in the study that the variables of gender, having difficulties in accessing healthcare services and having any chronic disease were not important in terms of having knowledge about infectious diseases, ($p>0.05$).

Furthermore, when the literature is examined, it is seen that the related studies have examined the knowledge levels of the participants about the notification systems for the notifiable diseases or about Sexually Transmitted Diseases or Hepatitis B disease related to infectious disease (13-17). Besides, there is no study examining the opinions and knowledge levels of participants about infectious diseases in general meaning.

Conclusion

Consequently, after measuring the consciousness level of the participants, it was realized that there was actually a consciousness level. When the options were presented, the majority of the participants were able to give the correct answer. However, when the name of the disease was mentioned and its characteristics were asked, less than half of the participants had difficulty. In addition, participants found the information works of the healthcare institutions adequate but the rate of those who wanted to participate in the educational activities of healthcare institutions was 49.7%.

The study was limited with 638 individuals in Bingol Province. In order to reach more definitive and general results and to better analyze these results, the study can be conducted across Turkey.

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