



RESEARCH ARTICLE

Protection During Covid-19 and Similar Biological/Chemical Disaster the Effect of Peer Education on Improving Behaviours

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ABSTRACT

Introduction/Objectives: The conscious application of prevention methods is crucial for the prevention of Covid-19 and similar epidemics. To this end, some restrictions and bans have been introduced in our country and in the world during the Covid-19 pandemic. However, it is believed that such restrictions and bans are not effective in preventing the spread of epidemic diseases if one is not aware of why they are applied. For this reason, this study aims to improve the protective behaviors of high school students, who are an important group for controlling the disease in the community during the Covid-19 pandemic, during Covid-19 and similar biological/chemical disasters by using the technique of peer education and a web-based educational program.

Methods: The study was a quasi-experimental one-group pretest-posttest model. The study sample consisted of 140 students who were enrolled in the schools where the study was conducted and who met the study criteria. Before the training, students were given the "Personal Information Form" and the "Biological and Chemical Disaster Protective Behavior Assessment Form". After the training, the questionnaire "Covid-19 and similar biological/chemical disasters - protective behavior" was completed again. The study data was analyzed using the SPSS 24.0 statistical program. Descriptive statistics were used to analyze the data obtained.

Results: It was found that more than half of the students participating in the study were female, almost half of them attended 10th grade, and almost half of them had a family income that matched their expenses. After the training, it was found that students' knowledge of social distancing and isolation rules increased and hygiene practices and mask wearing changed positively compared to before the training.

Conclusion: Individuals need to know how to protect themselves from epidemic diseases and know the right practices to minimize the damage caused by epidemic diseases. In this regard, it is recommended that nurses collaborate with different professional groups to increase the awareness and knowledge level of individuals and provide training on epidemic diseases to students. It is also recommended to identify the current situation by repeating the trainings conducted and ensuring that individuals update their knowledge.

Keywords: Covid-19, peer education, disaster, protection

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1. Introduction

Disaster means "great misfortune, calamity, catastrophe, destruction"¹ and causes psychological, biological and social problems to people by preventing them from fulfilling their basic needs such as safety, shelter and food². Disasters in the world are divided into geological (e.g. earthquakes, landslides), climatic (e.g. hail, tornadoes, avalanches, forest fires), biological (e.g. epidemics, insect invasions), social (e.g. war, migration) and technological disasters (e.g. industrial accidents)³. According to this classification, the Covid-19 pandemic, which became a global epidemic in 2019, can be categorised as a biological disaster. This is because the Covid-19 virus has spread rapidly and millions of people have lost their lives due to its ability to be transmitted from person to person. Therefore, the Covid-19 pandemic has become a major public health issue^{4,5}.

It is known that behaviours such as vaccination, wearing masks, physical social distancing and frequent hand washing before and after contact can reduce the risk of transmission during epidemics⁶. The effective implementation of protective behaviours, consisting of mask wearing, social distancing and hygiene practises, is important in a Covid-19 outbreak to ensure its control^{7,8}. In addition to these measures, some restrictions have also been introduced. In particular, to curb the movement of the young population, schools have been suspended in many countries, restrictions have been imposed in places such as cafés, etc. and the young population has been prevented from going out on the streets⁹⁻¹¹. This is because the environments where young people spend time are usually places where there is a high density of people, and these young people are a particular group that socialises closely. Therefore, they can easily cause outbreaks of infectious diseases if they are not controlled in a timely manner¹².

In order to prevent the spread of epidemics in the community, we believe that the development of lasting health behaviours through the provision of health education to individuals is more effective than bans or restrictions in controlling epidemics in the long term. In this regard, when examining the literature in various studies conducted in different years, it was found that the trainings to prevent the transmission of infectious diseases such as measles, mumps and tuberculosis have increased people's knowledge of infectious diseases and their awareness of disease prevention measures¹³⁻¹⁶. However, there are some factors that affect these health trainings and it is important to plan the trainings with these factors in mind. Factors that affect health education include the interest of the group receiving the education and the educator providing the education, the knowledge of the person providing the education, and the physical conditions of the environment¹⁷⁻¹⁸. In addition to these factors, it is assumed that the social interaction between the group to whom the education is directed and the educator can also influence the quality of health education. This is where the concept of peer education comes into play. This is because peer education is an active process that aims to change the knowledge, attitudes, beliefs and skills of young people in a similar social group on a particular topic through educational activities by willing, voluntary and trained peers. For this

reason, we assume that teaching mask, distance and hygiene training using peer education techniques by nursing students from our university will effectively improve the protective behaviour of high school students in epidemic disease

In this context, this study aims to improve the protection behaviors of high school students, who are an important group for controlling the disease in the community during the Covid-19 pandemic, in Covid-19 and similar biological / chemical disasters by using peer education technique and web-based education program.

2. Method

STUDY DESIGN

The research is a one-group pre-test post-test quasi-experimental model.

SAMPLE SIZE

The universe of the research consists of 9th, 10th and 11th grade students of Anatolian high schools in Akdeniz, Toroslar and Yenisehir districts of Mersin province in Turkey. The sample size was determined to be 139 using the "G*Power 3.1.9.7" programme, assuming a $1-\beta=0.95$ power and an $\alpha=0.05$ error level, effect size $f=0.28$. The sample of the study consisted of 155 students who were enrolled in the schools where the study was conducted, who spoke and understood Turkish, who had no visual or hearing problems, and who volunteered to participate in the study.

Before the start of training in the first phase of the project, a meeting was held with representatives of AFAD Mersin Provincial Directorate at the Toros University Faculty of Health Sciences in Turkey. After the meeting, the training content was prepared by covering biological and chemical disasters, Covid-19 and routes of entry into the body, measures to be taken in biological and chemical disasters (such as masks and distance hygiene), behaviour during the disaster, the importance of disaster planning and post-disaster rehabilitation.

Meetings were planned in appropriate time periods as a result of the intensity of the courses and planning of the researchers and the students who will provide peer education. On May 30, 2022, June 2, 2022 and June 10, 2022, the training material prepared by researchers FÖ, BS, NA, AD was explained to the university students in the role of peer educators. Rehearsals were made by having undergraduate students acting as peer educators repeat the presentation to the researchers on the training topics, and the content of the presentation was strengthened in terms of transferring it to the students. Peer educators provided two hours of online training on June 15, 2022 between 19.00-21.00 hours to 9th, 10th and 11th grade students from five high schools who had parental consent and who voluntarily agreed to participate in the study. The training presentations were kept in their systems to be accessible by the students for 6 months.

DATA COLLECTION INSTRUMENT AND COLLECTION OF DATA

Research data was collected using a personal information form and a Covid-19 and similar biological/chemical disaster protective behavior assessment form. The forms

were created by the researchers as a result of the literature review¹⁹⁻²⁴.

Personal information form: It consists of four questions about the students' identifying characteristics: gender, grade level, mother's and father's education, and family income status.

Assessment form for protective behavior during Covid-19 and similar biological/chemical disasters: This questionnaire consists of a total of 20 questions to assess students' knowledge, attitudes, and behavioral characteristics related to masks, distance, and hygiene rules, which are among the protective behaviors during Covid-19 and similar biological/chemical disasters.

DATA COLLECTION

One day before the training began, students were asked to fill out the Personal Information Form and the Covid-19 and Related Biological/Chemical Disasters Protective Behavior Assessment Form online. Six months after the training, students were asked to complete the Covid-19 and similar biological/chemical disaster protective behavior assessment form online again.

DATA EVALUATION

The data of the study were analyzed using SPSS 24.0 statistical program. Descriptive statistics were used in the evaluation of the data obtained.

ETHICAL ASPECTS OF THE STUDY

In addition to the resolution of the Ethics Committee for Scientific Research of the College of Toros dated 09.07.2021 with the number 7/80, authorization to carry out the project was obtained from the Provincial Directorate of National Education. In addition, the subjects participating in the study were informed of the purpose of the research and the consent of the participants and their parents was obtained. This study was conducted in accordance with the principles of the Declaration of Helsinki.

3. Results

It was found that 57.9% of the students participating in the study were female, 42.1% of them attended 10th

grade, 55.7% of their mothers and 38.5% of their fathers had a primary school degree, and 46.5% of them had a family income equal to their expenses (Table 1).

While 64.3% of the students included in the study answered the minimum distance required for social distancing as 1.5-2 meters before the training, 82.9% of the students stated it as 82.9 meters after the training. While 84.3% of the students stated that 84.3% of the students stated all of the social distancing rules (1.5-2 meters social distance should be observed, 3 steps should be left on normal or escalators, at least 1 meter distance should be left on seats and benches) before the training, this rate increased to 100% after the training. While 40% of the students stated that they should be isolated at home for 15 days after contact with someone in quarantine before the training, 50% of the students stated that they should be isolated at home for 10 days after the training. While 37.1% of the students stated that low-risk close contacts with unvaccinated or incomplete Covid-19 vaccine should stay in quarantine for 7 days before the training, 83.6% of the students stated that the quarantine period should be 10 days after the training. Before the training, 84.3% of the students correctly stated that "in general areas, elevators, wards and outpatient clinics in the institution, transition markings should be made in accordance with the social distance rule in order to maintain the distance and prevent accumulation" and this finding increased to 100% after the training. The students participating in the research stated that 96.4% of the students correctly stated the question "the number of people should be limited in waiting rooms and common areas and posted in writing in visible places" before the training and 100% of them answered correctly after the training; 96.4% of the students correctly answered the question "The capacity of elevators should be determined according to the social distancing rule and marked accordingly" before the training. 4% answered the question correctly before the training and 100% answered it correctly after the training; 86.4% answered the question "Warning signs should be placed in front of the normal stairs or escalators to indicate that there should be at least 4 steps between the person in front and the person in front" correctly and 100% answered it incorrectly after the training (Table 2).

Table 1. Distribution of sociodemographic characteristics of students

		n	%
Gender	Female	81	57.9
	Male	59	42.1
Class	9th grade	49	35.0
	10th grade	59	42.1
	11th grade	32	22.9
Mother's education status	Illiterate	28	20.0
	Primary School	78	55.7
	High School	24	17.2
	≥ Undergraduate	10	7.1
Father's education status	Illiterate	14	10.0
	Primary School	54	38.5
	High School	43	30.8
	≥ Undergraduate	29	20.7
Family income status	Income is less than expense	45	32.1
	Income is equal to expense	65	46.5
	Income is more than expense	30	21.4
Toplam		140	100.0

Table 2. Distribution of social distancing and isolation in relation to Covid-19 before and after training (n=140)

		Before Training n (%)	After Training n (%)
The minimum physical distance that should be maintained in environments where people are together in order to maintain social distancing	1 m – 2m	44 (31.4)	24 (17.1)
	2 m – 3m	-	-
	1,5 m – 2 m	90 (64.3)	116 (82.9)
	0,5 m – 1m	6 (4.3)	-
	3 m – 4 m	-	-
What you should bear in mind when applying social distancing rules	Social distance of 1.5-2 meters should be observed.	8 (5.7)	-
	A distance of 3 steps should be left on normal or escalator stairs.	3 (2.1)	-
	A distance of at least 1 meter should be left on seats and benches.	11 (7.9)	-
	All	118 (84.3)	140 (100.0)
The period during which a healthy person is isolated during contact with a person in quarantine	He/she must isolate at home for 10 days.	40 (28.6)	116 (82.9)
	He/she must isolate at home for 5 days.	39 (27.9)	24 (17.1)
	He/she must isolate at home for 15 days.	56 (40.0)	-
	He/she must isolate at home for 21 days.	-	-
	He/she must isolate at home for 17 days.	5 (3.6)	-
Quarantine period for low-risk close contacts who have not been vaccinated or have received incomplete doses of the COVID-19 vaccine	10 days	38 (27.1)	117 (83.6)
	5 days	16 (11.4)	23 (16.4)
	7 days	52 (37.1)	-
	21 days	7 (5.0)	-
	15 days	27 (19.3)	-
Social distancing should be maintained within the facility and crowding avoided by placing appropriate transition markers in common areas, elevators, services and outpatient clinics (T)	True	132 (94.3)	140 (100.0)
	False	8 (5.7)	
The number of people in waiting rooms and common areas should be limited and posted in visible places (T)	True	135 (96.4)	140 (100.0)
	False	5 (3.6)	
The capacity of elevators should be determined according to the social distancing rule and marked accordingly (T)	True	135 (96.4)	140 (100.0)
	False	5 (3.6)	
Warning signs should be placed in front of normal stairs or escalators indicating that a distance of at least 4 steps should be maintained between the person in front and the person in front of them (F)	True	121 (86.4)	
	False	19 (13.6)	140 (100.0)

While 55.7% of students before the training and 82.9% of students after the training stated that the duration of hand washing with soap and water is 20 seconds, 93.6% of students before the training and 100% of students after the training agreed with the question: "Hand washing by rubbing for 20 seconds before and after contact is necessary to ensure hand hygiene and reduce the spread of the Covid-19 outbreak". When asked how to disinfect computer keyboards, telephones and other equipment surfaces, 55.0% of students before the training and 83.6% after the training stated that they should be disinfected with 70% alcohol; 54.3% of

students before the training and 83.5% after the training stated that dirty clothes and textile products should be washed at 60 degrees. It was found that 79.3% of the students agreed with the question "The use of gloves is necessary to ensure hand hygiene and reduce the spread of the Covid-19 outbreak" and 83.6% disagreed after the training. 93.6% of the students before the training and 100% of the students after the training agreed with the question "Hand washing by rubbing for 20 seconds before and after contact is necessary to ensure hand hygiene and reduce the spread of the Covid-19 outbreak" (Table 3).

Table 3. Distribution of hygiene status regarding Covid-19 before and after training (n=140)

		Before Training n (%)	After Training n (%)
Time to wash hands with soap and water	10 seconds	8 (5.7)	
	20 seconds	78 (55.7)	116 (82.9)
	30 seconds	41 (29.3)	24 (17.1)
	40 seconds	4 (2.9)	
	50 seconds	9 (6.4)	

		Before Training	After Training
Washing hands for 20 seconds before and after contact is essential to ensure hand hygiene and reduce outbreak of Covid-19.	I agree	131 (93.6)	140 (100.0)
	I do not agree	9 (6.4)	
Wearing gloves does not provide the necessary hand hygiene to prevent the spread of the Covid-19 pandemic.	I agree	111 (79.3)	23 (16.4)
	I do not agree	29 (20.7)	117 (83.6)
How to disinfect computer keyboards, phones and other device surfaces?	Should be disinfected with 70% alcohol	77 (55.0)	117 (83.6)
	Should be disinfected with 50% alcohol	42 (30.0)	23 (16.4)
	Should be disinfected with bleach containing sodium hypochlorite.	7 (5.0)	
	Should be disinfected with diluted bleach.	11 (7.9)	
	Should be disinfected with undiluted bleach	3 (2.1)	
At what minimum temperature should dirty clothes and textiles be washed?	at 50 degrees	21 (15.0)	23 (16.4)
	at 60 degrees	76 (54.3)	117 (83.5)
	at 70 degrees	15 (10.7)	
	at 80 degrees	11 (7.9)	
	at 90 degrees	17 (12.1)	

While 60.7% of the students before the training stated that the most suitable material for making masks was cotton and 100% cotton after the training. 65% of the students before training and 100% after training stated that the protection of the mask should be according to the number of layers, the fabric it is made of and appropriate filtration standards. 69.3% of students before and 83.6% after training indicated that the mask should be made of a fabric that does not obstruct breathing; 85% before and 100% after training indicated that everyone over the age of 2 should wear a mask; 12.1% before and 83.6% before and 83.6% before and 83.6 after training that it is wrong to keep

the removed mask on the arm, chin or hand; 52.1% before and 100% after training that hands should be washed/rubbed with alcohol-based antiseptic after removing the mask; 83.6% before and 100% after training stated that the mask protects both the wearer and other people; 78.6% before and 100% after training stated that the mask is used to protect oneself and people in the community; 25.7% before and 83.6% after training stated that they wore a mask every time they went out, even when no one was present, when thinking about their habits of wearing the mask in the past week (Table 4).

Table 4. Mask characteristics used during COVID-19 and the distribution of participants' mask-wearing status before and after training (n=140)

		Before Training	After Training
		n (%)	n (%)
The most suitable type of material for making masks (especially the inner layer)	Polyester	37 (26.4)	
	Cotton	85 (60.7)	140 (100.0)
	Wool	4 (2.9)	
	Leather	3 (2.1)	
	Vinyl	11 (7.9)	
Features of the mask to consider	How many floors does it have?	16 (11.4)	
	What material is it made of?	8 (5.7)	
	Is it set by standards to provide adequate filtration?	20 (14.3)	
	All of the above	91 (65.0)	140 (100.0)
	None of the above	5 (3.6)	
Characteristics of the mask materials	The material from which the mask is made has no influence on its effectiveness.	6 (4.3)	
	The thicker the material the mask is made of, the more protection it offers.	13 (9.3)	23 (16.4)
	The mask should be made of a material that does not hinder breathing.	97 (69.3)	117 (83.6)
	Fabrics such as polyester, vinyl, leather or wool can be used as mask fabric.	14 (10.0)	
	If using a mask, it offers the same protection whether it is single-layered, double-layered or triple-layered.	10 (7.1)	
People who should wear a mask during COVID-19	Medical staff only	3 (2.1)	
	Patients only	7 (5.0)	
	Adults only	4 (2.9)	
	Only people at high risk	7 (5.0)	

		Before Training	After Training
		n (%)	n (%)
	Anyone older than 2 years and residing in the community	119 (85.0)	140 (100.0)
Incorrect rules for wearing masks	The mask should be changed if it becomes dirty or damp.	45 (32.1)	
	Hands should be washed/rubbed with an antiseptic solution before removing the mask.	7 (5.0)	
	When removing the mask, you should hold it by the edges without touching the surface.	46 (32.9)	
	Do not touch your face or eyes when removing the mask.	25 (17.9)	23 (16.4)
	The removed mask can rest on your arm, chin or hand.	17 (12.1)	117 (83.6)
What to do after removing the mask?	Washing hands/rubbing with alcohol-based antiseptic	73 (52.1)	140 (100.0)
	Throwing the mask directly into the trash	60 (42.9)	
	Throwing the mask on the ground	3 (2.1)	
	Putting the mask in the pocket	2 (1.4)	
	Placing the mask on the arm	2 (1.4)	
Protective function when the mask is used correctly	Only the person wearing the mask	7 (5.0)	
	Those in front of the person wearing the mask	11 (7.9)	
	A mask protects both the person wearing it and other people.	117 (83.6)	140 (100.0)
	A mask does not provide protection.	3 (2.1)	
	Wearing a mask correctly is not important, but it still protects .	2 (1.4)	
Reasons for using a mask	To avoid punishment	4 (2.9)	
	To protect myself	16 (11.4)	
	To avoid negative reactions in society	5 (3.6)	
	Because it is necessary	5 (3.6)	
	To protect myself and people in society	110 (78.6)	140 (100.0)
Use of the mask in the last week	I always wore a mask when I went out, even if there was no one around	36 (25.7)	117 (83.6)
	I never wore a mask	26 (18.6)	
	I wore a mask 1-2 times	11 (7.9)	
	I only wore a mask during the day in closed/crowded environments	61 (43.6)	23 (16.4)
	I wore it 3-4 times a week	6 (4.3)	

4. Discussion

The aim of peer education is to develop knowledge, skills, attitudes and behaviours related to one's own health through educational activities with a peer counsellor or trainer with similar characteristics (age, educational level, occupation, interests, etc.)²⁵. No study was found in the literature that investigated the effect of peer education on students' protective behaviour during Covid-19 and similar biological/chemical disasters. This emphasises the originality of our study and our research findings are discussed with literature information and descriptive studies.

Social distance or social space is defined as the distance of 1-2.5 meters that people create between themselves based on their location. However, this concept has emerged as one that equates all close or distant relationships in the name of health, made necessary by the Covid-19 pandemic²⁶. The Centers for Disease Control and Prevention (CDC) recommends that the distance between people should be 1.82 meters (6 feet)²⁷. While 64.3% of the students in our study stated before training that the minimum distance should be 1.5-2 metres to maintain social distancing, this proportion rose to

82.9% after training. In our study, it is striking that 100% of the students answered "all" after the training when asked about the rules to be observed when applying social distancing rules. A review of the literature found no study that examined students' knowledge of social distancing. Our research findings emphasise that education is once again important for protecting against and controlling epidemics during disasters, especially during the Covid-19 period.

Isolation is the separation of the persons with infectious diseases from healthy, uninfected individuals²⁸. Social isolation is the absence of social relationships and a very small number of people with whom one can interact regularly²⁹. Quarantine is the restriction of the freedom of movement of a healthy person(s) who is suspected of having been exposed to an infectious disease³⁰. In the guidelines updated by the Ministry of Health of the Republic of Turkey in 2022 for Covid-19, which mutates very quickly and gives rise to new variants, the person(s) with Covid-19 symptoms are isolated for seven days from the onset of symptoms and persons without symptoms for seven days from the first polymerase chain reaction (PCR) test. At the end of the seventh day, the

isolation of people who are asymptomatic or mildly symptomatic and who have not had a fever in the last 24 hours without antipyretic medication is terminated without a PCR test. In the same guideline, a close contact is not quarantined if they have received Covid-19 in the last 3 months or have received a reminder dose. However, if the person is not ill or has not received the reminder dose, a quarantine of 7 days is recommended³¹. In our study, 40% of the students reported the isolation time as 15 days at home before the training, and after the training they answered correctly at a high rate (82.9%) by reporting the isolation time as 10 days at home. It was found that 37.1% of students reported the quarantine period for low-risk close contacts with unvaccinated or incompletely vaccinated Covid-19 vaccine as seven days before the training, while 83.6% of them answered correctly as 10 days after the training. As far as the literature was examined, no study was found that examined students' level of knowledge about isolation and quarantine. As our research data was collected in 2021, our research results were analysed according to the 2020 guidelines of the Ministry of Health on Covid-19. Our research results can be explained by the fact that the training content provided is up-to-date and effective.

While countries' hygiene measures are important to slow and stop the spread of the Covid-19 pandemic, individual hand washing with soap and water for at least 20 seconds is also important for controlling epidemics³². While in our study before training, 55.7% of students stated that hand washing with soap and water for 20 seconds and 93.6% stated that this was necessary to ensure hand hygiene and reduce the outbreak of Covid-19, these rates increased to 82.9% and 100%, respectively, after training. No study was found that examined the results of hygiene training on reducing the Covid-19 outbreak after training. However, one study was found that measured participants' knowledge of hand washing after training. In Temel and Nurlu Temel's study, which involved academics, staff and dental school students, it was found that 85.9% of participants stated that hands should be washed with soap and water for 20 seconds³³. Our research findings are important because they show that education is necessary and effective.

To prevent social transmission and reduce the risk of transmission during the Covid-19 pandemic, sodium hypochlorite (bleach/chlorine) should be used in diluted form and contaminated clothing and bedding should be washed at 60-90 degrees³⁴. In our study, more than half of the students (54.3%) stated that dirty clothes and textiles should be washed at a minimum of 60 degrees before training, while the majority (83.5%) stated that dirty clothes and textiles should be washed at a minimum of 60 degrees after training. As our research results are consistent with the literature, we believe that the training has made a significant difference in the level of knowledge.

Covid-19 is mainly spread by droplets in the air. When people talk, sing, cough or sneeze, these droplets are released into the air and some people can transmit the disease. For this reason, you should wear a mask to protect yourself and others and reduce transmission (this alone is not enough). Also, when choosing a mask, the

inner layer should be made of cotton, the middle layer of non-woven fabric such as polypropylene and the outer layer of non-absorbent material such as polyester or a polyester blend^{35,36}. In our study, 60.7% of students answered the question about the most suitable material for the inner layer of the mask correctly by indicating cotton before training, while all students answered this question correctly after training. In our study, when asked about students' reasons for using masks, it was found that 21.4% of students stated that they use masks to avoid punishment, to protect themselves because it is mandatory and to avoid reactions in society, while all students stated before training that masks should be used to protect themselves and people in society. Our research results once again emphasize the importance of education in controlling epidemics and increasing the level of knowledge and awareness of individuals.

When reviewing the literature, it was found that there are different guidelines or recommendations regarding the age for the use of masks. According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), it is not necessary for children under the age of 5 to wear masks³⁷. However, according to the CDC, anyone aged 2 years and older can wear masks to protect themselves and others from Covid-19³⁸. WHO and UNICEF stated that children under 5 years and children without supervision cannot wear masks properly, and it was felt that there was no problem in lowering the age for wearing masks to two years if supervision is provided, and the lower age limit of two years was given in our training³⁷. While 85% of students in our study stated before the training that everyone two years and older would wear a mask during Covid-19, this proportion increased to 100% after the training. This result is an important and striking finding with regard to our research results.

Removing the mask properly is just as important for protection against epidemics as wearing the mask correctly. The WHO emphasizes that hands should be cleaned with an alcohol-based hand sanitizer or soap and water before touching the mask, that the mask should be removed by holding the strips/straps behind the head or ears without touching the front part of the mask, and that hands should be cleaned again with an alcohol-based antiseptic or soap and water after removal³⁶. In our study, although more than half of the students (52.1%) knew before the training that hands should be cleaned after removing the mask, this rate reached 100% after the training. There is no study in the literature that examines the rules for taking off the mask and the rules for taking off the mask after training. Therefore, we think that our research results will be an important source for the literature.

Limitations

Limitations of this study include the fact that it was conducted in schools in only one district of one province in southern Turkey and that no follow-up measurements were taken to assess the permanence of the change.

5. Conclusion

As a result, biological or chemical epidemics have not only endangered human life, but have also had serious

negative effects on the economy. To minimize these negative effects, people need to know how to protect themselves from epidemics and what they can do to minimize the damage of these diseases. For this reason, nurses have an important responsibility to improve people's awareness and knowledge. In this study conducted in this direction, it is seen that health education improves the level of knowledge of students. According to the results of this study, nurses can collaborate with other professional groups and governmental agencies and educate individuals to protect against epidemics by utilizing the power of technology. It is recommended to update the knowledge of individuals by repeating these trainings in certain years, using the peer education model in their trainings, and evaluating the permanence of behavior change through follow-up measurements.

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Declaration of Interests:

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