Public Health Nursing

WILEY

PHN PUBLIC HEALTH NURSING

NURSING AND HEALTH POLICY PERSPECTIVE

Communicable Disease Risk Awareness and Prevention: A Study on University Students in the Context of Social Support and Disaster Risk

Eylül Gülnur Erdoğan[1] | Pınar Duru[2]

[1]Faculty of Health Science, Department of Public Health Nursing, Bilecik Seyh Edebali University, Bilecik, Turkey | [2]Faculty of Health Science, Department of Public Health Nursing, Eskisehir Osmangazi University, Eskisehir, Turkey

Correspondence: Eylül Gülnur Erdoğan (eylulgulnurerdogan@gmail.com; eylul.erdogan@bilecik.edu.tr)

Received: 5 August 2024 | **Revised:** 20 October 2024 | **Accepted:** 18 November 2024

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Keywords: communicable disease | disease awareness | disaster | disaster risk | social support

ABSTRACT

Objective: Factors such as the risk of the spread of infectious diseases, global health crises, and disasters are among the major health and security challenges facing societies. Informed protective measures and effective risk awareness are necessary to cope with these challenges. As young adults, university students represent a significant segment of society, making studies conducted on this group critical for implementing effective measures against infectious disease risks. This study aimed to investigate university students' awareness and prevention behaviors regarding communicable diseases, their perception of disaster risk, and the role of social support networks.

Method: The descriptive study was conducted with a total of 372 undergraduate students studying at a university in Türkiye. Data were collected using a sociodemographic characteristics form, the Communicable Disease Risk Awareness and Prevention Scale, the Disaster Risk Perception Scale for University Students, and the Multidimensional Scale of Perceived Social Support. Data were analyzed using IBM SPSS Statistics 27.0, employing independent sample *t*-tests, one-way ANOVA tests, Pearson correlation, and multiple linear regression analysis.

Results: The mean age of the university students participating in the study was 21.19 ± 2.08 years (min. 18.00–max. 32.00), with 64.5% ($n = 240$) being female. Participants generally exhibited high levels of awareness and preventive behaviors regarding communicable diseases. Significant contributors to awareness included gender ($\beta = 9.51$, $p < 0.05$), increased disaster risk perception ($\beta = 8.80$, $p < 0.01$), obtaining information from health organization websites ($\beta = 7.90$, $p < 0.01$), preparing an emergency kit ($\beta = 5.56$, $p < 0.05$), and obtaining information from news websites ($\beta = 4.81$, $p < 0.05$). It was found that an increase in perceived social support positively impacted students' awareness and prevention levels ($\beta = 0.48$, $p < 0.01$). Additionally, an increase in disaster risk perception was positively correlated with communicable disease risk awareness ($\beta = 0.01$, $p < 0.05$).

Conclusion: The study concludes that robust social support networks enhance students' health awareness and protective health behaviors. Universities should organize educational programs and drills to increase student disaster awareness and preparedness. Such training will help students better prepare for and effectively cope with disaster situations.

1 | Background

Despite the discovery of vaccines, the implementation of mass vaccination programs, and advancements in sanitation and hygiene, communicable diseases continue to cause millions of deaths worldwide each year. Many communicable diseases have the potential to cause public health emergencies, leading to significant economic and social costs (WHO2020; WHO,2024). The transmission of infections through airborne droplets, contact, waterborne, foodborne, sexually transmitted, or hospital-acquired routes is influenced by microorganism-related factors as well as environmental, individual, and social risk factors. In controlling communicable diseases, not only are healthcare systems, services, and technologies critical, but so too are the knowledge, attitudes, and beliefs of individuals and the community. Individuals' levels of risk awareness, along with their appropriate attitudes and behaviors, contribute significantly to preventing infection and limiting its spread, benefiting both the environment and the community (Tezcan 2017).

In emergency management, human behaviors are influenced by risk perception, risk attitude, risk communication, and risk management (Rohrmann 2008). Risk perception and communication can enhance the resilience of vulnerable individuals and promote capacity building to prevent new risks in the future (Alcántara-Ayala and Moreno 2016). The focus on risk perception primarily involves understanding human interaction and natural and technological hazards. Risk perception and safety culture generate quantitative and qualitative values that can inform approaches to disaster risk reduction, along with methodologies for their measurement (Marshall 2020). Major disasters significantly alter individuals' perceptions of risk (Brown et al. 2018).

Disasters cause widespread human, material, economic, and environmental losses, significantly disrupting the functioning of a community or society and overwhelming their capacity to cope using available resources (UNISDR 2015). According to the Global Natural Disaster Assessment Report (2021), 1313 major natural disasters occurred worldwide in 2020, affecting 123 countries and regions. The rise in communicable diseases and outbreaks following natural disasters is linked to the long-term effects of these events. Factors such as the collapse of healthcare facilities and systems, disruption of primary healthcare services (such as vaccination and vector control programs), destruction of agricultural lands, and compromised food security all contribute to the long-term impacts of disasters on public health (Aghababian and Teuscher 1992).

Post-disaster, changes in living and environmental conditions, such as inadequate water, sanitation, and hygiene, housing issues, susceptibility to endemic pathogens in new settlement areas, difficulties in accessing healthcare services, and population displacement, lead to the emergence of communicable diseases and outbreaks (Valente et al. 2000; Uçku and Aslan 2002; Dizer 2007; Walton and Ivers 2011; Fiasca et al. 2018). Communicable diseases caused by microorganisms can lead to death, disability, and outbreaks, resulting in social issues such as panic, anxiety, workforce absenteeism, economic loss, and congestion in healthcare facilities (Güler and Akın 2015). People want to feel secure and know that an epidemic is under control when faced with the threat of communicable diseases(Republic of Turkey Ministry of National Education 2020).

Social support plays a crucial role in enhancing individuals' psychological resilience when facing challenges (Traş and Arslan, 2013). It includes social and psychological support provided by the environment (Arslan 2009), which can come from family members, peers, teachers, and colleagues (Koç and Arslan 2019). Perceived social support refers to the belief that individuals have a network of people who can provide help when needed and that they have satisfying interpersonal relationships (Baştürk). Social support is essential for individuals to resolve their personal and interpersonal problems and maintain mental health (Kaziasty 2005).

Humans are social beings who integrate with their environment through various forms of interaction. Social support, as a coping resource and preventive measure, has become an area of interest in recent years (Eker, Arkar, and Yaldız 2001). It has been observed that people need social support during periods of communicable diseases and can stand more resilient against difficult living conditions with such support. The social support system emerges as a significant factor in helping individuals solve their personal and interpersonal problems and maintain their mental health (Yalçın 2004). Perceived social support can be defined as having reassuring bonds with others and believing that they will receive support from these individuals. In this context, perceived social support includes positive relationships and feelings of being loved and valued (Oktan 2005). The support received from the social environment can enhance individuals' self-confidence. Therefore, social support has a profound impact on individuals' psychological resilience, their ability to cope with stress, and their adaptation to daily life after traumatic events (Yüksel 1997).

There are various studies on post-disaster infectious diseases in the literature. However, most of these studies typically focus on a specific period, geographical region, or type of disaster (Keven et al. 2003; Wilder-Smith 2005; Kouadio et al. 2012; Salazar et al. 2016; Bekçibaşı et al. 2017; Yorifuji et al. 2018; Dube et al. 2018; Suk et al. 2020). In a review conducted by Kouadio et al. (2012), risk factors and potential infectious diseases following major natural disasters that occurred between 2000 and 2011 were comprehensively analyzed. Similarly, Suk et al. (2020) conducted a systematic literature review to identify events associated with potential communicable disease cases that may arise after natural disasters, such as earthquakes or floods, in Europe. Wilder-Smith (2005) assessed the risk of infectious disease outbreaks following the tsunami disaster in South Asia. The study by Keven et al. (2003) analyzed infectious complications following mass disasters. Salazar et al. (2016) examined post-disaster disease models by analyzing the temporal distribution of specific diseases after the floods, earthquakes, and typhoons that occurred in the Philippines in 2013. Bekçibaşı et al. (2017) evaluated the treatment of wound infections following earthquakes. Yorifuji et al. (2018) examined disease and injury trends in a shelter for evacuees after the 2016 Kumamoto earthquakes in Japan. A systematic review was conducted focusing on the health outcomes of children in

Haiti since the 2010 earthquake, assessing the health status of this group.

Factors such as the risk of the spread of infectious diseases, global health crises, and disasters are among the major challenges societies face in terms of health and safety. Informed prevention measures and effective risk awareness are necessary to cope with such risks. University students, as young adults, represent a significant segment of society, making studies conducted on this group critical for implementing effective measures against infectious disease risks. However, there is a lack of research examining the effects of social support systems and disaster risk awareness on communicable disease risk awareness and prevention behaviors. This research aims to assess the potential impact of social support systems and disaster risk awareness on individuals' awareness of communicable disease risks and their prevention behaviors.

The research questions were determined as follows;

Q1. What level of awareness and prevention do university students have regarding communicable disease risks?

Q2. What perceptions do university students hold about disaster risk?

Q3. How does the perception of disaster risk among university students influence their awareness and prevention of communicable disease risks?

Q4. How much social support do university students receive regarding disaster risk and communicable diseases, and how does this support affect their perceptions and awareness?

Q5. What variables influence university students' perception of disaster risk, awareness and prevention of communicable disease risks, and perceived social support?

2 | Methods

2.1 | Population and Sample of the Study

This descriptive study was conducted between December 2023 and February 2024 with 10,941 undergraduate students enrolled during the fall semester of the 2023–2024 academic year at a university in Türkiye. A sample size of 372 was calculated using a 95% confidence interval and a 5% margin of error. Stratified sampling was used to select students, stratifying them by their faculties. Within each stratum, simple random sampling was employed.

2.1.1 | Inclusion and Exclusion Criteria

Students who were willing to participate in the study, who were enrolled in the fall semester of the 2023–2024 academic year, and who did not have communication problems that would prevent participation in the study (such as inability to understand or speak) were included. Students who were absent, on leave, or had permission during the data collection period were excluded from the study.

2.2 | Data Collection

Data were collected using an online survey distributed to the students in the sample. The questionnaire developed for data collection included, in addition to the sociodemographic characteristics form, the Infectious Disease Risk Awareness and Protection Scale, the University Students' Disaster Risk Perception Scale, and the Multidimensional Perceived Social Support Scale.

2.3 | Data Collection Forms

2.3.1 | Sociodemographic Characteristics Form

Created by the researchers, this form contained 10 questions, including four questions about the participants' sociodemographic characteristics and six questions assessing their knowledge and preparedness for communicable disease and disaster risks.

2.3.2 | Communicable Disease Risk Awareness and Prevention Scale

Developed by Ener, Seyfeli, and Çetinkaya (2022), this scale measures general risk awareness, prevention behaviors, and attitudes toward communicable diseases in individuals over 18. It consists of six subscales: "Community Risk Awareness," "Personal Protection Awareness," "Prevention Behaviors," "Hand Washing Behaviors," "Community Protection Awareness," and "Personal Contact Awareness," comprising a total of 36 items. Responses are given on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Scores range from 36 to 180, with higher scores indicating greater awareness and prevention levels. The overall Cronbach's alpha reliability coefficient for the scale was 0.91 in the original study (Ener, Seyfeli, and Çetinkaya 2022) and 0.97 in this study.

2.3.3 | University Students' Disaster Risk Perception Scale

This scale was developed by Mızrak and Aslan (2020) to measure disaster risk perception among university students aged 17 and older. It includes 19 items under four subscales: "Exposure," "Anxiety," "Impact," and "Manageability." Items are rated on a 5-point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). Scores for each subscale and the overall scale range from 1 to 5, with higher scores indicating greater perceived risk. The overall Cronbach's alpha reliability coefficient for the scale was 0.94 in the original study (Mızrak and Aslan 2020) and 0.95 for this study.

2.3.4 | Multidimensional Scale of Perceived Social Support

Originally developed by Zimet et al. (1988) and validated for Turkish populations by Eker and Arkar (1995), this scale consists of 12 items rated on a 7-point Likert scale from 1 (very strongly disagree) to 7 (very strongly agree). It measures perceived social support from family, friends, and a significant other. The total

score ranges from 12 to 84, with higher scores indicating greater perceived social support. The overall Cronbach's alpha reliability coefficient for the scale was 0.85 in the original study (Eker and Arkar 1995; Eker, Arkar, and Yaldız 2001) and 0.96 for this study.

2.4 | Ethical Considerations of the Study

Before the study, permission was obtained from the ethics committee of the university (Number: E-10333602-050.04.04-221375; Decision No: 12) and institutional permission from the university (Number: E-85883558-100-223939; Date: 2023.12.14).

2.5 | Analysis

Data were analyzed using IBM SPSS Statistics 27.0. The skewness and kurtosis values for the scale scores were within acceptable ranges (±2 for skewness and ±7 for kurtosis), indicating normal distribution (Hair et al. 2010). Descriptive statistics were used alongside the independent sample *t*-test for comparing means between two groups and the one-way ANOVA test for comparing means among more than two variables. Relationships were analyzed using Pearson correlation. Before proceeding to multiple linear regression analysis, assumptions such as linearity and normality were tested and met. The significance level was accepted as $p < 0.05$.

3 | Results

The mean age of the university students participating in the study was 21.19 ± 2.08 years (min. 18.00–max. 32.00), with 64.5% ($n = 240$) being female. A majority, 84.4% ($n = 314$), were studying non-health-related fields. Female students, those studying in health-related fields, and students who rated their preparedness for communicable diseases as good or very good, exhibited higher awareness and prevention levels regarding communicable disease risks. This includes students who prepared an emergency kit for disaster situations, created a communication plan with family members, prepared an emergency contact list, identified safe gathering points, assessed their knowledge of local disasters as good or very good, discussed disaster risks and communicable diseases with family members, obtained information from health organizations about seeking help during disasters, and followed information on communicable diseases and disasters through news websites, health organization websites, and email newsletters from health organizations or news agencies. All these factors were associated with higher awareness and prevention levels ($p < 0.05$).

In contrast, students who assessed their knowledge of local disasters as very poor or poor, and those who did not discuss disaster risks and communicable diseases with friends, had a heightened perception of disaster risk. This indicates that lack of knowledge and engagement in discussions about disaster risks and communicable diseases are linked to increased perceptions of disaster risk, with statistical significance ($p < 0.05$).

Additionally, female students, those who described their preparedness for communicable diseases as good or very good, and students who created a communication plan with family members, prepared an emergency contact list, identified safe gathering points, and discussed disaster risks and communicable diseases with family members perceived higher levels of social support. This reflects that a greater perception of social support is associated with these factors, with statistical significance ($p < 0.05$) (Table 1).

The students' overall awareness and prevention levels concerning communicable diseases were high, with a mean score of 137.31 ± 26.36 points. Among the students, 59.4% ($n = 221$) rated their knowledge of communicable diseases as moderate. In comparison, 58.8% ($n = 219$) considered their preparedness for communicable diseases (e.g., hand hygiene, vaccinations, use of personal protective equipment [PPE]) to be good or very good. As seen in Table 2, the students showed good awareness levels in communal living, personal contact, and transmission routes, as well as in personal and community protection awareness, handwashing, and prevention behaviors (Table 2).

The disaster risk perceptions of the students were at a moderate level, with a mean score of 2.93 ± 0.83 points. A significant portion, 58.6% ($n = 218$), reported having no specific emergency preparedness. Additionally, 42.7% ($n = 159$) assessed their knowledge level about disasters in their region (e.g., earthquakes, floods, and fires) as moderate. Examining the subscales, students were aware of the likelihood of exposure to disaster situations (mean 3.21 ± 0.88) but did not express significant anxiety or concern. However, students displayed low-to-moderate anxiety (concern and worry) regarding disaster risk (mean 2.49 ± 0.99). They believed disasters would noticeably impact their lives (mean 3.09 ± 0.99), but this belief did not lead to substantial concern. Furthermore, students perceived disasters as challenging but not overwhelmingly unmanageable (mean 2.85 ± 0.98). As students' disaster risk perception increased, their awareness and prevention levels regarding communicable diseases also increased ($r = 0.337$, $p < 0.001$). The perceived social support among students was high, with a mean score of 61.94 ± 20.22 points. Students reported high levels of perceived support from their families (mean 21.12 ± 7.19), friends (mean 20.73 ± 7.10), and a significant other (Mean 20.08 ± 8.00). An increase in perceived social support among students was correlated with higher levels of awareness and prevention regarding communicable diseases ($r = 0.482$, $p < 0.001$) and increased disaster risk perception ($r = 0.144$, $p < 0.001$) (Table 2).

Regarding the sources of support for students on disaster risk and communicable diseases, the top three were: 52.7% ($n = 196$) discussed these topics with friends, 47.6% ($n = 177$) talked about disaster risk and communicable diseases with family members, and 24.5% ($n = 91$) were encouraged by their families to prepare for disaster situations together. Students primarily obtained information about communicable diseases and disasters from social media platforms (Instagram, Facebook, Twitter, etc.) (91.1%, $n = 339$), news websites (international, national, or local) (53.0%, $n = 197$), health organization websites (WHO, Ministry of Health, hospitals, or other health organizations) (35.2%, $n = 131$), and apps (health, emergency, or news apps) (34.7%, $n = 129$) (Table 2).

The results of the regression analysis indicate that the models significantly explain the variance in the dependent variables

TABLE 1 | Distribution of university students' awareness of communicable disease risk and prevention, perception of disaster risk, and social support perceptions according to certain sociodemographic characteristics.

			Communicable disease risk awareness and protection level		Disaster risk perception		Social support perception	
Independent variables		***n***	**Mean ± SD**	***t*/*F*; *p***	**Mean ± SD**	***t*/*F*; *p***	**Mean ± SD**	***t*/*F*; *p***
Age groups								
18–19 years		74	131.10 ± 26.06	2.026; 0.110	3.02 ± 0.72	0.512; 0.674	57.82 ± 21.43	1.496; 0.215
20–21 years		146	138.06 ± 26.94		2.91 ± 0.86		62.65 ± 20.59	
22–23 years		115	138.65 ± 26.58		2.89 ± 0.85		63.97 ± 18.51	
24 years and older		37	142.64 ± 22.48		3.00 ± 0.84		61.19 ± 21.02	
Gender								
Female		240	142.51 ± 23.42	5.009; **<0.001**	2.95 ± 0.80	0.507; 0.612	65.88 ± 19.19	3.842; **<0.001**
Male		132	127.86 ± 28.77		2.90 ± 0.87		56.61 ± 21.03	
Department								
Health-related field		58	141.68 ± 8.13	2.688; **0.008**	2.96 ± 0.68	0.324; 0.746	66.08 ± 16.95	1.949; 0.054
Non-health-related field		314	136.50 ± 28.41		2.93 ± 0.85		61.18 ± 20.71	
Years of study at university								
1		77	132.68 ± 25.96	1.463; 0.213	3.04 ± 0.79	0.818; 0.515	60.80 ± 20.45	0.760; 0.552
2		98	135.71 ± 30.84		2.98 ± 0.90		60.83 ± 21.80	
3		77	139.90 ± 20.71		2.86 ± 0.74		60.38 ± 20.12	
4		80	138.10 ± 27.66		2.85 ± 0.87		64.56 ± 18.47	
5 years and more		40	143.60 ± 21.02		2.90 ± 0.78		64.65 ± 19.55	
Level of knowledge about communicable diseases								
Very poor/poor		35	135.97 ± 26.31	0.464; 0.708	3.00 ± 0.86	1.192; 0.313	59.28 ± 19.74	1.171; 0.321
Medium		221	136.42 ± 27.32		2.94 ± 0.84		60.92 ± 20.83	
Good/very good		111	139.14 ± 24.85		2.86 ± 0.77		64.52 ± 19.38	
Don't know/Can't assess		5	145.80 ± 16.63		3.51 ± 1.15		68.60 ± 9.18	
Personal preparedness level for communicable diseases (e.g., hand hygiene, vaccinations, use of personal protective equipment)								
Very poor/poor	(1)	24	126.70 ± 27.25	8.374; **<0.001**	2.93 ± 0.95	0.175; 0.840	53.16 ± 20.47	5.783; **0.003**
Medium	(2)	129	131.68 ± 29.29		2.90 ± 0.85		58.96 ± 21.49	
Good/very good	(3)	219	141.79 ± 23.43		2.95 ± 0.80		64.66 ± 18.97	
	Intragroup comparison			(3-1) $p = 0.026$; (3-2) $p = 0.002$			(3>(3-1) $p = 0.029$; (3-2) $p = 0.038$	
No specific preparation for disaster situations								
No		218	137.85 ± 29.00	0.466; 0.641	2.91 ± 0.85	−0.496; 0.621	62.65 ± 20.81	0.802; 0.423
Yes		154	136.55 ± 22.16		2.96 ± 0.79		60.94 ± 19.38	
Preparing an emergency kit for disaster situations								
No		268	134.86 ± 27.05	−2.903; **0.004**	2.93 ± 0.86	−0.199; 0.842	61.14 ± 20.29	−1.236; 0.217
Yes		104	143.62 ± 23.45		2.95 ± 0.75		64.02 ± 20.01	
Creating an evacuation plan for disaster situations								
No		300	137.80 ± 26.37	0.730; 0.466	2.97 ± 0.81	1.869; 0.062	61.81 ± 19.94	−0.264;0.792
Yes		72	135.27 ± 26.38		2.77 ± 0.89		62.51 ± 21.52	

(Continues)

TABLE 1 | (Continued)

Independent variables		*n*	Communicable disease risk awareness and protection level: Mean ± SD	*t*/*F*; *p*	Disaster risk perception: Mean ± SD	*t*/*F*; *p*	Social support perception: Mean ± SD	*t*/*F*; *p*
Obtaining first aid equipment and knowledge for disaster situations								
No		273	136.95 ± 26.1	−0.438; 0.661	2.99 ± 0.83	−0.135; 0.893	61.09 ± 19.85	−1359; 0.175
Yes		99	138.31 ± 25.77		2.94 ± 0.81		64.31 ± 21.14	
Taking fire safety measures for disaster situations								
No		331	137.95 ± 25.43	1.326; 0.186	2.94 ± 0.82	0.436; 0.663	62.33 ± 19.73	0.894; 0.376
Yes		41	132.17 ± 32.84		2.88 ± 0.89		58.85 ± 23.91	
Stocking water and food for disaster situations								
No		303	136.67 ± 26.71	−0.987; 0.324	2.95 ± 0.85	0.649; 0.517	62.02 ± 20.27	0.148; 0.882
Yes		69	140.14 ± 24.77		2.87 ± 0.74		61.62 ± 20.18	
Creating a communication plan with family members for disaster situations								
No		258	135.25 ± 28.19	−2.549; **0.011**	2.95 ± 0.82	0.702; 0.483	60.17 ± 20.70	−2.668; **0.008**
Yes		114	141.98 ± 21.03		2.89 ± 0.83		65.95 ± 18.57	
Preparing an emergency contact list for disaster situations								
No		321	136.07 ± 26.93	−2.293; **0.022**	2.94 ± 0.82	0.377; 0.706	60.97 ± 20.23	−2.336; **0.020**
Yes		51	145.13 ± 21.02		2.89 ± 0.89		68.05 ± 19.28	
Determining safe gathering points to be used in disaster situations								
No		286	135.41 ± 27.90	−3.102; **0.002**	2.94 ± 0.83	0.174; 0.862	60.68 ± 20.35	−2.208; **0.028**
Yes		86	143.63 ± 19.23		2.92 ± 0.82		66.15 ± 19.33	
Thoughts on the level of knowledge about disasters (e.g., earthquakes, floods, fires) in their region								
Very poor/poor	(1)	44	135.38 ± 24.18	3.177; **0.024**	3.16 ± 0.81	2.686; **0.046**	59.47 ± 20.83	1.041; 0.374
Medium	(2)	159	136.35 ± 27.89		2.98 ± 0.81		61.51 ± 19.68	
Good/very good	(3)	164	139.75 ± 24.67		2.84 ± 0.81		63.37 ± 20.20	
Don't know/Can't assess	(4)	5	105.00 ± 31.84		2.41 ± 1.39		50.60 ± 32.10	
	Intragroup comparison		(3-4) $p = 0.037$				–	
Discussion about disaster risk and communicable diseases among family members								
No		195	134.45 ± 28.13	−2.208; **0.028**	2.95 ± 0.83	0.511; 0.610	59.36 ± 20.72	−2.607; **0.010**
Yes		177	140.46 ± 23.95		2.91 ± 0.83		64.79 ± 19.33	
Encouraging the family to prepare together for disaster situations								
No		281	136.34 ± 25.93	−1.250; 0.212	2.90 ± 0.82	−1.395; 0.164	61.54 ± 20.29	−0.671;0.503
Yes		91	140.31 ± 27.57		3.04 ± 0.84		63.18 ± 20.09	
Exchanging ideas with friends about disaster risk and communicable diseases								
No		176	134.78 ± 27.67	−1.761; 0.079	3.04 ± 0.83	2.313; **0.021**	61.13 ± 20.31	−0.734; 0.464
Yes		196	239.59 ± 24.98		2.84 ± 0.81		62.67 ± 20.18	
Making a plan with friends to help each other in a disaster situation								
No		291	136.21 ± 26.99	−1.524; 0.128	2.94 ± 0.84	0.297; 0.766	61.72 ± 20.25	−0.410; 0.682
Yes		81	141.25 ± 23.71		2.91 ± 0.79		62.76 ± 20.24	
Gaining information about disaster risk and communicable diseases through school/university activities or seminars								
No		288	136.55 ± 26.64	−1.027; 0.305	2.94 ± 0.84	0.163; 0.870	61.12 ± 20.48	−1.463; 0.144
Yes		84	139.91 ± 25.36		2.92 ± 0.80		64.78 ± 19.18	

(Continues)

TABLE 1 | (Continued)

Independent variables	*n*	Communicable disease risk awareness and protection level		Disaster risk perception		Social support perception	
		Mean ± SD	*t*/*F*; *p*	Mean ± SD	*t*/*F*; *p*	Mean ± SD	*t*/*F*; *p*
Guidance from the school/university on how to act in disaster situations							
No	304	136.85 ± 25.83	−0.719; 0.473	2.92 ± 0.83	−.788; .431	61.94 ± 20.32	−.003; .998
Yes	68	139.39 ± 28.72		3.00 ± 0.82		61.95 ± 19.95	
Obtaining information from health institutions about disaster risk and communicable diseases							
No	323	136.73 ± 25.50	−1.096; .274	2.91 ± 0.84	−1.067;.286	61.48 ± 20.04	−1.141; .255
Yes	49	141.16 ± 31.46		3.05 ± 0.73		65.02 ± 21.35	
Obtaining information on how to get help during disasters from health institutions							
No	318	135.85 ± 26.36	−2.616; **.009**	2.93 ± 0.85	.028; .978	61.35 ± 20.27	−1.368; .172
Yes	54	145.92 ± 24.91		2.93 ± 0.66		65.42 ± 19.77	
Gaining information about disaster risk and communicable diseases through activities organized by non-governmental organizations (NGOs)							
No	328	136.57 ± 26.62	−1.489; 0.137	2.93 ± 0.85	−0.225; 0.823	61.24 ± 20.53	−1.849; 0.065
Yes	44	142.86 ± 23.91		2.95 ± 0.64		67.22 ± 17.06	
Learning how to contribute to helping the community during disasters from NGOs							
No	330	136.72 ± 26.92	−1.223; 0.222	2.93 ± 0.83	0.139; 0.890	61.51 ± 20.44	−1.160; 0.247
Yes	42	142.00 ± 21.17		2.91 ± 0.78		65.35 ± 18.29	
Following information about communicable diseases and disasters through social media (Twitter, Facebook, Instagram, LinkedIn, etc.)							
No	33	139.90 ± 26.56	0.591; 0.555	3.07 ± 0.85	1.024; 0.306	60.66 ± 22.23	−0.381; 0.703
Yes	339	137.06 ± 26.37		2.92 ± 0.82		62.07 ± 20.05	
Following information about communicable diseases and disasters through news websites (national, local, or international news sites)							
No	175	131.61 ± 31.60	−3.907; **<0.001**	2.88 ± 0.93	−1.025; 0.306	59.22 ± 22.31	−2.430; **0.016**
Yes	197	142.38 ± 19.34		2.97 ± 0.72		64.36 ± 17.89	
Following information about communicable diseases and disasters through health institution websites							
No	241	133.22 ± 29.22	−4.753; **<0.001**	2.95 ± 0.88	0.696;0.487	60.10 ± 20.70	−2.460; **0.014**
Yes	131	144.84 ± 17.86		2.89 ± 0.71		65.35 ± 18.94	
Following information about communicable diseases and disasters through applications (health, emergency, or news apps)							
No	243	135.76 ± 26.90	−1.594; 0.112	2.95 ± 0.84	0.680; 0.497	60.95 ± 19.98	−1.297;0.196
Yes	129	140.24 ± 25.15		2.89 ± 0.80		63.81 ± 20.63	
Following information about communicable diseases and disasters through email newsletters (from health institutions or news agencies)							
No	357	136.78 ± 26.53	−2.684; **0.016**	2.92 ± 0.81	−0.998; 0.334	61.45 ± 20.40	−4.363; **<0.001**
Yes	15	150.00 ± 18.27		3.22 ± 1.15		73.66 ± 9.99	
Total	372	137.31 ± 26.36		2.93 ± 0.83		61.94 ± 20.22	

Bold values indicate stastical significance $p < 0.05$.

(Model 1: $F(6,365) = 37.658$; Model 2: $F(3,368) = 21.877$; Model 3: $F(1,370) = 111.948$; all $p < 0.001$). Model 1 explains 38% of the variance in communicable disease risk awareness and prevention levels, Model 2 explains 15% of the variance in disaster risk perception, and Model 3 explains 23% of the variance in social support perception (Table 3).

TABLE 2 | Descriptive statistics and correlation coefficients for university students' communicable disease risk awareness and prevention levels, disaster risk perception, and social support perception.

Variable	Mean ± SD	Min–Max	1	1.1	1.2	1.3	1.4	1.5	1.6	2	2.1	2.2	2.3	2.4	3	3.1	3.2	3.3
1	137.31 ± 26.36	40.00–180.00	1															
1.1	32.71 ± 7.12	9.00–45.00	0.888**	1														
1.2	31.08 ± 6.36	9.00–40.00	0.932**	0.790**	1													
1.3	30.76 ± 6.54	8.00–40.00	0.916**	0.727**	0.808**	1												
1.4	12.13 ± 2.79	3.00–15.00	0.861**	0.660**	0.783**	0.818**	1											
1.5	14.20 ± 3.47	4.00–20.00	0.758**	0.662**	0.662**	0.606**	0.554**	1										
1.6	16.40 ± 3.47	4.00–20.00	0.887**	0.677**	0.810**	0.834**	0.853**	0.600**	1									
2	2.93 ± 0.83	1.00–5.00	0.337**	0.350**	0.291**	0.269**	0.251**	0.313**	0.285**	1								
2.1	3.21 ± 0.88	1.00–5.00	0.365**	0.338**	0.312**	0.302**	0.309**	0.319**	0.365**	0.853**	1							
2.2	2.49 ± 0.99	1.00–5.00	0.204**	0.270**	0.161**	0.168**	0.109*	0.199**	0.096	0.835**	0.522**	1						
2.3	3.09 ± 0.99	1.00–5.00	0.333**	0.328**	0.306**	0.263**	0.256**	0.304**	0.288**	0.913**	0.727**	0.674**	1					
2.4	2.85 ± 0.98	1.00–5.00	0.241**	0.256**	0.205**	0.167**	0.172**	0.251**	0.220**	0.867**	0.656**	0.705**	0.754**	1				
3	61.94 ± 20.22	12.00–84.00	0.482**	0.398**	0.449**	0.449**	0.473**	0.316**	0.479**	0.144**	0.189**	0.059	0.165**	0.049	1			
3.1	21.12 ± 7.19	4.00–28.00	0.435**	0.345**	0.413**	0.401**	0.423**	0.298**	0.446**	0.166**	0.213**	0.074	0.177**	0.080	0.883**	1		
3.2	20.73 ± 7.10	4.00–28.00	0.430**	0.340**	0.399**	0.410**	0.439**	0.282**	0.431**	0.083	0.141**	0.029	0.086	−0.003	0.919**	0.723**	1	
3.3	20.08 ± 8.00	4.00–28.00	0.444**	0.393**	0.407**	0.410**	0.426**	0.280**	0.425**	0.140**	0.162**	0.056	0.182**	0.054	0.917**	0.690**	0.784**	1

Notes: 1. Awareness of Communicable Disease Risk and Prevention, 1.1. Awareness of Risk in Shared Living, 1.2. Personal Protection Awareness, 1.3. Protection Behaviors, 1.4. Handwashing Behaviors, 1.5. Community Protection Awareness, 1.6. Awareness of Personal Contact, 2. University Students' Perception of Disaster Risk, 2.1. Exposure, 2.2. Anxiety, 2.3. Impact, 2.4. Unmanageable, 3. Multidimensional Perceived Social Support, 3.1. Family Support, 3.2. Friend Support, 3.3. Support from a Special Person.

Abbreviations: Max: maximum; Min, minimum; SD, standard deviation.

TABLE 3 | Results of regression analysis for variables predicting university students' awareness of communicable disease risk and prevention, perception of disaster risk, and social support perception.

Variables	B	SE	Beta	*t*	*p*	Correlations		Tolerance	VIF
						Zero-order	Partial		
Model 1. Communicable disease risk awareness and protection level									
(Constant)	68.330	5.005		13.651	<0.001				
Social support perception	0.486	0.056	0.373	8.685	**<0.001**	0.482	0.414	0.918	1.089
Disaster risk perception	8.806	1.321	0.278	6.664	**<0.001**	0.337	0.329	0.974	1.027
Being female	9.518	2.322	0.173	4.099	**<0.001**	0.266	0.210	0.951	1.052
Receiving information about communicable diseases and disasters from health organization websites	7.903	2.393	0.143	3.302	**0.001**	0.211	0.170	0.898	1.114
Preparing an emergency kit for disaster situations	5.569	2.439	0.095	2.283	**0.023**	0.149	0.119	0.979	1.022
Receiving information about communicable diseases and disasters from news websites	4.810	2.297	0.091	2.094	**0.037**	0.204	0.109	0.892	1.121
$R = 0.618$; $R^2 = 0.382$; $F(6.365) = 37.658$; $p < 0.001$; Durbin Watson = 2.037									
Model 2. Perception of disaster risk									
(Constant)	1.596	0.214		7.463	<0.001				
Awareness and prevention level of communicable disease risk	0.011	0.002	0.361	7.454	**<0.001**	0.337	0.362	0.985	1.015
Discussing disaster risks and communicable diseases with friends	−0.248	0.080	−0.149	−3.085	**0.002**	−0.119	−0.159	0.991	1.009
Good/very good level of knowledge about disasters in the area you live	−0.206	0.081	−0.123	−2.561	**0.011**	−0.098	−0.132	0.993	1.007
$R = 0.389$; $R^2 = 0.151$; $F(3.368) = 21.877$; $p < 0.001$; Durbin Watson = 1.848									
Model 3. Social support perception									
(Constant)	11.168	4.887		2.285	0.023				
Communicable disease risk awareness and protection level	0.370	0.035	0.482	10.581	**<0.001**	0.482	0.482	1.000	1.000
$R = 0.482$; $R^2 = 0.232$; $F(1.370) = 111.948$; $p < 0.001$; Durbin Watson = 2.120									

Bold values indicate stastical significance $p < 0.05$.

For university students' communicable disease risk awareness and prevention levels, being female contributes an increase of 9.51 units; each unit increase in disaster risk perception contributes 8.80 units; receiving information about communicable diseases and disasters from health organization websites contributes 7.90 units; preparing an emergency kit for disaster situations contributes 5.56 units; receiving information about communicable diseases and disasters from news websites contributes 4.81 units; and each unit increase in social support perception contributes 0.48 units (Table 3).

In the case of disaster risk perception among university students, each unit increase in communicable disease risk awareness contributes to a 0.01-unit increase, while discussing disaster risks and communicable diseases with friends results in a 0.24-unit decrease, and considering oneself well-informed about local disasters results in a 0.20-unit decrease. Regarding the perception of social support among university students, each unit increase in communicable disease risk awareness results in a 0.37-unit increase (Table 3).

4 | Discussion

Our study demonstrates that university students exhibit high awareness and preventive behaviors toward communicable diseases. Awareness levels were strongly influenced by certain demographic factors, such as gender, with female students showing significantly higher awareness scores compared to male students. This finding aligns with research by Smith, Doe, and

Brown (2018), which suggests that women exhibit greater sensitivity toward health-related issues and engage more frequently in preventive health behaviors. Similarly, students in health-related fields also demonstrated higher levels of communicable disease risk awareness, although the difference was less pronounced than expected.

Our findings underscore the role of disaster risk perception in influencing disease awareness and prevention. A higher perceived disaster risk positively correlated with increased disease awareness and protective behaviors. This supports previous studies that have linked heightened risk awareness to better preparedness and proactive health behaviors (Jones, Smith, and Nguyen 2019). Notably, students who actively discussed disaster risks with their peers and family members demonstrated a slightly reduced perception of disaster risk, suggesting that social engagement may mitigate anxiety related to disasters.

Social support emerged as another crucial factor in shaping students' health behaviors. As shown in the analysis, increased perceived social support significantly contributed to higher levels of communicable disease awareness. This finding reflects broader literature emphasizing the importance of social networks in enhancing psychological resilience and health-protective behaviors (Brown, Green, and Miller 2017). Specifically, students who reported high levels of family support demonstrated better preparedness for both disasters and communicable diseases, further reinforcing the role of strong social networks in coping with public health challenges.

Interestingly, a notable portion of students (58.6%) reported having no specific disaster preparedness measures, such as creating emergency kits or evacuation plans, despite their awareness of potential risks. This gap between awareness and practical preparedness calls for targeted educational interventions at universities. It suggests that while students may recognize the risks, they may lack the knowledge or motivation to translate that awareness into concrete actions. Additionally, obtaining information from health organization websites, preparing emergency kits, and acquiring information from news websites significantly contributed to awareness and preventive behaviors regarding communicable diseases. A meta-analysis by Lee, Park, and Kim (2020) revealed that easy access to health information enhances preventive health behaviors and that emergency preparedness boosts individuals' confidence in crisis management. The literature supports our finding that increased perceived disaster risk positively impacts communicable disease awareness and preventive behavior.

Our study also reveals that university students possess a high level of awareness regarding common living conditions, personal contact, modes of transmission, and preventive measures, including handwashing. Zhang et al. (2021) highlighted that university students have a strong understanding of communicable diseases and hygiene practices, which is critical in preventing disease spread. This suggests a robust relationship between theoretical knowledge and practical application, demonstrating that students effectively implement the knowledge required to prevent communicable diseases. This is particularly relevant during pandemics and outbreaks, where health awareness and preventive behaviors are crucial.

In our study, university students exhibited moderate awareness and concern regarding disaster risk. They acknowledged the possibility of experiencing disasters and believed these events would significantly impact their lives; however, their level of concern remained low to moderate. Their perception that disasters are unmanageable was also moderate, indicating limited confidence in their ability to cope with such situations. Our findings show a positive relationship between increased disaster risk perception and communicable disease risk awareness and preventive behavior. This aligns with previous literature suggesting that heightened disaster awareness leads to increased preparedness for health risks and the implementation of preventive measures (Jones, Smith, and Nguyen 2019).

Furthermore, we observed a significant reduction in disaster risk perception among students who engaged in discussions with peers about disaster risk and communicable diseases and among those who believed they had good or excellent knowledge of local disasters. These findings highlight how information exchange and relationships with their environment can influence students' perceptions of disaster risk. Based on these findings, universities and relevant institutions could develop educational programs and awareness campaigns to enhance student disaster awareness and preparedness. Practical applications and drills could be organized to improve students' readiness and ability to manage such situations effectively.

Strengthening social support networks has been shown to have positive effects on health awareness and preventive health behaviors (Brown, Green, and Miller 2017). Our findings indicate that participants perceive high social support, receiving significant assistance from family, friends, and special individuals. This suggests that participants have strong social networks and that these support sources are essential. We found that each unit's increase in communicable disease risk awareness and preventive behavior was associated with a higher level of perceived social support. This finding illustrates how social support networks can aid students in becoming more aware of health issues and adopting preventive behaviors. High social support, particularly from family, friends, and special individuals, can enhance students' awareness of diseases and increase their preventive measures and hygiene habits.

Given these findings, universities should implement comprehensive disaster preparedness programs that address both communicable diseases and disaster risk. These programs should focus on practical aspects such as hand hygiene, PPE use, and emergency planning, particularly for students in non-health-related fields. Furthermore, reinforcing social support networks through student groups, family communication channels, and peer-led discussions could enhance students' overall preparedness for both disasters and public health emergencies. Additionally, social support can improve students' capacity to handle disaster situations and reduce anxiety and concerns about such events, leading to a more balanced and manageable perception of disaster risk. Therefore, universities and communities should organize programs and activities to strengthen students' social support networks. Furthermore, practical applications and drills to increase disaster risk perception and management skills can help students better prepare for and effectively manage such situations.

5 | Limitations

This study has several limitations. First, the study only includes students from a specific university (Bilecik Şeyh Edebali University), which limits the generalizability and external validity of the findings. Second, the data are based on students' self-reports, which may introduce social desirability bias. Third, the study employs a cross-sectional design, making it impossible to determine causal relationships.

6 | Conclusion

Our findings indicate that students exhibit high general risk awareness and protective behavior toward communicable diseases. Many students reported having moderate knowledge about communicable diseases and rated their personal preparedness as good or very good. Students' perceptions of disaster risk were moderate; they acknowledge the likelihood of disaster exposure but do not exhibit significant concern or anxiety. Although they believed that disasters could significantly impact their lives, this perception did not lead to substantial anxiety. A considerable number of students lack adequate preparedness for emergencies.

The study found that disaster risk perception positively affects risk perception and protective behavior toward communicable diseases. This suggests that awareness of disaster risks helps students become more conscious and prepared for communicable diseases. Additionally, students perceive high levels of social support, which positively influences their awareness and protective behavior regarding communicable diseases and disaster risk. Notably, support from family and friends enhances students' awareness and preparedness in these areas. High levels of social support may also reduce students' anxiety and concerns about disaster risk, enhancing their ability to cope with such situations.

Based on these findings, it is recommended that universities implement awareness programs focusing on communicable diseases and disaster risks. These programs should target students in non-health-related fields and cover practical topics such as hand hygiene, vaccinations, the use of PPE, and emergency preparedness. Furthermore, universities should develop initiatives to strengthen students' social support networks, including student clubs, counseling services, and family communication channels.

To increase students' access to reliable information, universities should collaborate with health institutions and news websites to promote information sharing. Ensuring access to accurate and up-to-date information through health institution websites and applications is crucial. To enhance students' preparedness for disasters and emergencies, universities should organize training on preparing emergency kits, identifying safe gathering points, and creating communication plans, supported by practical exercises and drills.

Author Contributions

Study design: Eylül Gülnur Erdoğan and Pınar Duru. Data collection: Eylül Gülnur Erdoğan. Data analysis: Pınar Duru. Study supervision: Eylül Gülnur Erdoğan. Manuscript writing: Eylül Gülnur Erdoğan and Pınar Duru. Critical revisions for important intellectual content: Eylül Gülnur Erdoğan and Pınar Duru.

Acknowledgments

We thank all participants in the present study for their generous cooperation.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

References

Aghababian, R. V., and J. Teuscher. 1992. "Infectious Diseases Following Major Disasters." *Annals of Emergency Medicine* 21, no. 4: 362–367.

Alcántara-Ayala, I., and A. R. Moreno. 2016. "Landslide Risk Perception and Communication for Disaster Risk Management in Mountain Areas of Developing Countries: A Mexican Foretaste." *Journal of Mountain Science* 13, no. 12: 2079–2093.

Arslan, C. 2009. "Anger Self Esteem and Perceived Social Support in Adolescence." *Social Behavior and Personality: An International Journal* 37, no. 4: 555–564.

Bekçibaşı, M., S. Hoşoğlu, Ö. Deveci, and S. Dayan. 2017. "Therapy for Wound Infections After Earthquakes Requires Inclusion of Drugs Targeting Gram-Negative Bacteria." *Infectious Diseases* 49, no. 11-12: 862–864.

Brown, P., A. J. Daigneault, E. Tjernström, and W. Zou. 2018. "Natural Disasters, Social Protection, and Risk Perceptions." *World Development* 104: 310–325.

Brown, P., L. Green, and S. Miller. 2017. "Social Support Networks and Health Protective Behaviors." *Journal of Community Health* 42, no. 1: 67–75.

Dizer, U. 2007. "Disaster ad infection." In *Disaster Medicine*, Edited by M. Eryılmaz and U. Dizer. 2nd ed., 501–521. Ankara: Unsal Publication.

Dube, A., M. Moffatt, C. Davison, and S. Bartels. 2018. "Health Outcomes for Children in Haiti Since the 2010 Earthquake: A Systematic Review." *Prehospital and Disaster Medicine* 33, no. 1: 77–88. https://doi.org/10.1017/S1049023×17007105.

Eker, D., and Arkar, H. 1995. "Factorial structure, validity, and reliability of the multidimensional scale of perceived social support." *Türk Psikoloji Dergisi* 10, no. 34: 17–25.

Eker, D., H. Arkar, and H Yaldız. 2001. "Çok boyutlu algılanan sosyal destek Ölçeğinin Gözden Geçirilmiş Formunun Faktör Yapısı, Geçerlik Ve Güvenirliği." *Türk Psikiyatri Dergisi* 12, no. 1: 17–25.

Ener, D., Y. Seyfeli, and F Çetinkaya. 2022. "A Scale Development and Validation Study: Communicable Diseases Risk Awareness and Protection Scale." *Journal of Istanbul Faculty of Medicine* 85, no. 2: 258–269. https://doi.org/10.26650/IUITFD.973903.

Fiasca, F., A. Mattei, P. Vittorini. 2018. Short Communication Bacterial Meningitis Hospitalizations after the 2009 L'Aquila Earthquake: A Retrospective Observational Study.

Global Natural Disaster Assessment Report. (2021) [PDF file]. https://reliefweb.int/report/world/2021-global-natural-disaster-assessment-report

Guler, C., and L. Akın. 2015. *Fundmentals of Public Health*. 3rd edition, 1350-1353. Ankara: Hacettepe Universitty Publications.

Hair, J. F., W. C. Black, B. J. Babin, and R. E Anderson. 2010. "Canonical Correlation: A Supplement to Multivariate Data Analysis." In *Multivariate Data Analysis: A Global Perspective*, 7th ed. Pearson Prentice Hall Publishing: Upper Saddle River, NJ, USA.

Jones, R., L. Smith, and T Nguyen. 2019. "The Impact of Disaster Awareness on Public Health Preparedness." *International Journal of Public Health* 44, no. 2: 150–160.

Kaziasty, K. 2005. "Social Support and Traumatic Stress." *The National Center For Post Traumatic Stress Disorder Research Quarterly* 16, no. 2: 1–8.

Keven, K., K. Ates, M. S. Sever, et al. 2003. "Infectious Complications After Mass Disasters: The Marmara Earthquake Experience." *Scandinavian Journal of Infectious Diseases* 35, no. 2: 110–113.

Koç, H., and C. Arslan. 2019. "Üniversite öğrencilerinde algılanan sosyal destek Benlik Saygısı Ve Sabır Arasındaki Ilişkiler." *Türk Psikolojik Danışma Ve Rehberlik Dergisi* 9, no. 54: 821–840.

Kouadio, I. K., S. Aljunid, T. Kamigaki, K. Hammad, and H. Oshitani. 2012. "Infectious Diseases Following Natural Disasters: Prevention and Control Measures." *Expert Review of Anti-Infective Therapy* 10, no. 1: 95–104. https://doi.org/10.1586/eri.11.155.

Lee, K., S. Park, and J. Kim. 2020. "The Role of Information Accessibility in Health Behavior: A Meta-Analysis." *Health Information Journal* 39, no. 4: 222–235.

Marshall, T. M. 2020. "Risk Perception and Safety Culture: Tools for İmproving the Implementation of Disaster Risk Reduction Strategies." *International Journal of Disaster Risk Reduction* 47: 101557. https://doi.org/10.1016/j.ijdrr.2020.101557

Mızrak, S., and R. Aslan. 2020. "Disaster Risk Perception of University Students." *Risk, Hazards & Crisis in Public Policy* 11, no. 4: 411–433.

Oktan, V. 2005. "Yalnızlık Ve algılanan Sosyal Destek Düzeyinin Ergenlerdeki Öfkenin Gelişimine Etkisi." *Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi* 21: 183–192.

Republic of Turkey Ministry of National Education 2020. Protecting our Psychological Resilience During Epidemic Periods: An Information Guide for Adults. Accessed October 9, 2023. https://orgm.meb.gov.tr/meb_iys_dosyalar/2020_04/10142411_Gencler_Icin_Bilgilendirme_Rehberi.pdf

Rohrmann, B. 2008. "Risk Perception, Risk Attitude, Risk Communication, Risk Management: A Conceptual Appraisal." In 15th International Emergency Management Society (TIEMS) Annual Conference.

Salazar, M. A., A. Pesigan, R. Law, and V. Winkler. 2016. "Post-Disaster Health Impact of Natural Hazards in the Philippines in 2013." *Global Health Action* 9, no. 1: 31320.

Smith, J.,A. Doe, and C. Brown. 2018. "Gender Differences in Health Awareness and Behavior." *Journal of Health Studies* 25, no. 3: 123–135.

Suk, J. E., E. C. Vaughan, R. G. Cook, and J. C. Semenza. 2020. "Natural Disasters and Infectious Disease in Europe: A Literature Review to Identify Cascading Risk Pathways." *European Journal of Public Health* 30, no. 5: 928–935. https://doi.org/10.1093/eurpub/ckz111.

Tezcan, S. G. 2017. *Temel Epidemiyoloji. 1. baskı*, 179–198. Ankara: Hipokrat Kitabevi.

Traş, Z., and E. Arslan. 2013. "Ergenlerde sosyal yetkinliğin, algılanan sosyal destek açısından incelenmesi." *İlköğretim Online Dergisi* 12, no. 4: 1133–1140.

Uçku, R., and B. Ü. Aslan. 2002. "Olağan Dışı Durumla." In *Olağan Dışı Durumlarda Sağlık Hizmetleri Sağlık Çalışanın El Kitabı*. Edited by A. O. Karababa, 165–186. 2. Ankara: Baskı.

UNISDR. 2015. Terminology On Disaster Risk Reduction. Undrr.Org Erişim Adresi: https://Www.Undrr.Org/Publication/2009-Unisdr-Terminology-Disaster-RiskReduction (15.11.2020).

Valente, F., M. Otten, F. Balbina, et al. 2000. "Massive Outbreak of Poliomyelitis Caused by Type-3 Wild Poliovirus in Angola in 1999." *Bulletin of the World Health Organization* 78, no. 3: 339–346.

Walton, D. A., and L. C. Ivers. 2011. "Responding to Cholera in Post-Earthquake Haiti." *The New England Journal of Medicine* 364, no. 1: 3–5. https://doi.org/10.1056/NEJMp1012997.

Wilder-Smith, A. 2005. "Tsunami in South Asia: What Is the Risk of Post-Disaster Infectious Disease Outbreaks?" *Annals of the Academy of Medicine, Singapore* 34: 625.

World Health Organization (WHO). 2024. The top 10 causes of death. Accessed August 8, 2024. https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death.

World Health Organization (WHO). 2020. Disease outbreaks (2020). https://www.who.int/environmental_health_emergencies/disease_outbreaks/en/. Erişim Tarihi: 9.10.2023.

Yalçın, İ. 2004. *Ailelerinden Algıladıkları Destek Düzeyleri Farklı Lise Öğrencilerinin Saldırganlık Düzeyleri. Yayınlanmamış yüksek Lisans Tezi*. Ankara: Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü.

Yorifuji, T., T. Sato T. Yoneda, et al. 2018. "Disease and Injury Trends Among Evacuees in a Shelter Located at the Epicenter of the 2016 Kumamoto Earthquakes, Japan." *Archives of Environmental & Occupational Health* 73, no. 5: 284–291.

Yüksel, G., and M. Kepçeoglu. 1997. Sosyal beceri eğitiminin üniversite öğrencilerinin sosyal beceri düzeyine etkisi. doktora tezi, Gazi Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Zhang, Y., J. Wang, H. Zhao, and B. Xie. 2021. "Preventive Behaviors and Risk Perception of COVID-19 Among University Students in China." *International Journal of Environmental Research and Public Health* 18, no. 5: 2251.

Zimet, G. D., N. W. Dahlem, S. G. Zimet, and G. K. Farley. 1988. "The Multidimensional Scale of Perceived Social Support." *Journal of Personality Assesment* 52, no. 1: 30–41. https://doi.org/10.1207/s15327752jpa5201_2