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Evaluating Disaster Literacy And Individual Disaster Resistance Among Municipal Employees*

Belediye Çalışanlarında Afet Okuryazarlığı ve Bireysel Afet Direncinin Değerlendirilmesi

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Öne Çıkanlar / Highlights

- Afetlerde okuryazarlık ve bireysel dirençlilik
- Belediye çalışanlarında afet okuryazarlığının değerlendirilmesi
- Belediye çalışanlarında bireysel afet direncinin değerlendirilmesi
- Literacy and individual resilience in disasters
- Assessment of disaster literacy among municipal employees
- Assessment of individual disaster resilience among municipal employees

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Keywords

Disaster, literacy, disaster resilience, municipal employees

Özet

Türkiye, pek çok afetle karşılaşan bir ülkedir. Afet okuryazarlığının yüksek olması ve bireysel olarak afetlere dirençli olmak bireylerin ve toplumun sağlığı, gelişimi, psikolojik ve ekonomik zararların önlenmesi için önemlidir. Afetlerin olduğu bölgelerde kamu hizmeti sunan en yakın birimler olan belediyeler afet planlama çalışmalarını da yürütürler. Literatürde özellikle afetlere müdahalede ön planda görev alan belediye çalışanlarının afet okuryazarlığı ve afet dirençliliğini değerlendiren bir çalışmaya rastlanamamıştır. Çalışmamızın amacı belediye çalışanlarının afet okuryazarlığı ve bireysel afet dirençlilik düzeylerini belirlemek ve afet okuryazarlığı ile ilişkili olabilecek faktörleri değerlendirmektir. Bu kesitsel çalışma Odunpazarı Belediyesi çalışanları arasında gerçekleştirilmiştir. Çalışma grubu 636 belediye çalışanından oluşmaktadır. Çalışmamızda Afet Okuryazarlığı Ölçeği ve Bireysel Afet Direnci Ölçeği kullanılmıştır. Afet Okuryazarlığı Ölçeği skorları ortalama 210,2 ± 42,8 puandır. Belediye çalışanlarının Afet Okuryazarlığı Ölçeği'nden aldıkları puanlar ile Bireysel Afet Direnci Ölçeği'nden aldıkları puanlar arasında orta düzeyde pozitif bir ilişki olduğu bulunmuştur. Eskişehir Odunpazarı Belediyesi çalışanlarının afet okuryazarlığı ve bireysel afet direncinin orta düzeyde olduğu söylenebilir. Afet okuryazarlığının öğrenim düzeyi, bölgelerindeki afet risklerini ve toplanma yerlerini bilme, olası afetlere karşı hazırlıklı hissetme ve bireysel afet dirençliliği ile ilişkili olduğu bulunmuştur. Afetlerde ön planda görev

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alan belediye personelinin afet okuryazarlığı ve bireysel afet direncini üst seviyelere çıkarmak bireyleri ve toplumu koruma için önem arz etmektedir. Bu amaçla personele afet ile ilgili konularda düzenlenen hizmet içi eğitimler arttırılmalıdır.

Abstract

Türkiye faces many disasters. High levels of disaster literacy and individual disaster resilience are important for the health and development of individuals and society and for the prevention of psychological and economic damages. Municipalities, which are the closest units providing public services in disaster-prone regions, also carry out disaster planning activities. There is no study in the literature that assesses the disaster literacy and resilience of municipal employees who are at the forefront of disaster response. The aim of our study was to determine the disaster literacy and individual disaster resilience levels of community workers and to assess the factors that may be associated with disaster literacy. This cross-sectional study was conducted among 636 employees of Odunpazarı Municipality. Disaster literacy and individual disaster resilience scales were used in our study. The mean Disaster Literacy Scale score was 210.2 ± 42.8 points. It was found that there was a moderate positive relationship between the Disaster Literacy Scale scores of the municipal employees and their scores on the Individual Disaster Resilience Scale. It can be said that the disaster literacy and individual disaster resilience of the employees of Eskişehir Odunpazarı Municipality are at a moderate level. Disaster literacy was found to be related to education level, knowledge of disaster risks and gathering places in their regions, feeling prepared for possible disasters and individual disaster resilience. It is important to raise the level of disaster literacy and individual disaster resilience of local government personnel, who are on the front line of disasters, in order to protect individuals and society. To this end, in-service training on disaster-related issues should be increased.

1. INTRODUCTION

A disaster is defined as a severe alteration in the normal functioning of a community or society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse effects on human, material, economic, or environmental factors that require immediate emergency response to satisfy critical human needs and that may require external support for recovery. (United Nations Department of Humanitarian Affairs 1992). According to The Emergency Events Database (EM-DAT) disasters can be divided into two categories: natural and technological hazards. These disasters can be divided into technological disasters (industrial and transportation accidents) and natural disasters (geophysical, meteorological, hydrological, climatological, biological, and extraterrestrial) (The Emergency Events Database (EM-DAT) 2014). There are also studies in the literature that divide disasters into sudden and slow onset disasters, or into natural, man-made, and hybrid disasters (Van Wassenhove, 2006; Shaluf, I.M, 2007). Throughout history, disasters have caused numerous negative impacts, including death, injury, physical and psychological loss, environmental damage, and sociological problems in living spaces. It is important to realise that disasters have no bias and can strike anyone, anywhere, at any time (Bayram and Güler 2016). In 2023, there were 1097 disasters worldwide, of which 796 were natural and 301 technological. These disasters resulted in 169,763 deaths, affected over 262 million people and caused economic losses of over 326 billion dollars. The disasters that claimed the most lives were heat/cold waves and earthquakes. Other disasters included in order of fatalities storms, floods, accidents, epidemics, landslides/avalanches, fires and volcanic activity (The Emergency Events Database (EM-DAT) 2023).

Türkiye is prone to natural disasters due to its geological and topographical structure. In addition, there is a risk of man-made disasters such as fire, terrorism, chemical, biological, and industrial events (T.C. İçişleri Bakanlığı Afet ve Acil Durum Yönetimi Başkanlığı 2018). Türkiye ranks sixth in the world in the frequency of earthquakes, third in the annual number of deaths due to disaster-related reasons, and fourth in the annual number of deaths due to exposure to disasters (Işık et al. 2012). According to the International Emergency Database (EM-DAT), Türkiye experienced a total of fourteen disasters in 2023, eleven of which were natural and three of which were technological. The most common disasters were earthquakes and floods, followed by accidents and storms. The earthquake that occurred in

Kahramanmaraş on February 6, 2023, which affected 11 provinces, claims the most lives in Türkiye's history (The Emergency Events Database (EM-DAT) 2023).

The significance attached to disasters by different countries varies according to their geographical, political and economic conditions. However, disaster risk reduction is of vital importance to many nations (Kitagawa, 2015). Disaster risk reduction is a top priority worldwide. Therefore, disaster training is of great importance for both countries and individuals. It is of the utmost importance that individuals are informed and well educated about potential disasters in order to prevent catastrophic consequences that threaten the lives of many people (Tsai, Chang, Shiau, & Wang, 2020). A disaster-aware, informed, and prepared life is essential for protection against disaster damage.

Attitudes and behavior toward disasters can significantly influence the extent of damage caused. To enhance disaster literacy, it is imperative to equip individuals with information about the nature and consequences of disasters, facilitate access to pertinent resources, raise awareness, and disseminate knowledge to those who possess expertise in disaster management (Kuzucuoğlu & Şeşen, 2020). Disaster literacy encompasses the knowledge, attitudes, and behaviors essential for responding to and assessing disasters in a manner that ensures survival. Disaster literacy equips individuals with the requisite skills and knowledge in the domains of disaster prevention, risk reduction, preparedness, intervention, recovery, planning, and implementation (Sözcü & Aydınözü, 2019).

Individual disaster resilience is a dynamic process that can be observed in people who have the ability to adapt and learn in the face of disasters so that they can recover and maintain their ability to function (Boon 2014). In societies with high individual disaster resilience, the first goal is not to return to the pre-disaster situation, but to achieve a more viable or sustainable equilibrium (Rivera and Kapucu 2015). Individuals must be resilient to disasters in the interests of themselves and society. Disaster resilient people are expected to effectively prevent psychological and economic damage. To increase individual resilience, people need to be aware of the dangers in their environment, take responsibility, and be informed about risks in advance of disasters (Boon et al. 2012).

In order to be adequately protected from disasters, it is of the utmost importance to be fully aware of the potential effects and consequences of disasters and to be able to implement the necessary interventions in a timely and effective manner. A multitude of official and civil organizations play a pivotal role in disaster response. Municipalities, which are among the most prominent of these organizations, are among those that can provide the swiftest response to disasters in their respective regions. It is evident that municipal employees must possess a certain degree of knowledge regarding disasters and the appropriate actions to be taken in the event of such occurrences. This will enable them to protect themselves and the general public within their respective service areas, to minimise the damage and losses, to prevent further damage and losses, and to re-establish social order. Despite the fact that Turkey is a country that frequently encounters disasters, it was hypothesised that the disaster literacy and individual disaster resilience levels of municipal employees may not be particularly high in our country. Moreover, no study was identified in the literature that evaluated municipal employees on this subject. A study conducted by Saifudin et al. with individuals residing in a region with a high disaster risk revealed that the level of disaster literacy was high and that there was a robust positive correlation between disaster literacy and disaster resilience (Saifudin, n.d., 2023). In studies conducted in the community in Iran and among middle school students in Indonesia, disaster literacy was reported to be at a moderate level (Farzanegan, Fischer, & Noack, 2024; Logayah, Maryani, Ruhimat, & Wiyanarti, 2023).

Given the unpredictable nature of disasters, it is imperative that teams deployed to disaster zones maintain a state of constant preparedness. Local governments are the most proximate organizations providing public services in areas where disasters occur. As a result, community planning for disaster management is of paramount importance for municipalities. A high level of disaster literacy and individual disaster resilience among municipal employees will enable them to protect themselves and the wider society. In this manner, the devastation and losses that may result from disasters will be averted

prior to their occurrence, the destruction and losses that ensue after the disaster will be mitigated, and the formation of new disasters will be prevented. It is anticipated that this study will address a significant gap in the existing literature by determining the disaster literacy levels of municipal employees who will be working in potential disaster areas. Furthermore, the study sought to examine the factors associated with the disaster literacy levels of municipal employees and to assess the relationship between disaster literacy and individual disaster resistance.

2. MATERIALS AND METHODS

2.1. Study Design And Participants

This study was conducted with the employees of Eskişehir Odunpazarı Municipality between May 2, 2023, and September 30, 2023. The study employed a cross-sectional method, which is one of the quantitative research methods. In the present study, a full-count sampling method was employed to achieve a comprehensive representation of the Odunpazarı Municipality employees. The complete count sampling method is a technique for selecting a sample in which every unit in the universe is included. This method is particularly suited to universes that are small and concentrated in a specific area. Nevertheless, it can also be employed for larger populations, such as those enumerated in censuses (Ural and Kiliç 2005). 681 municipal employees who agreed to take part in the study completed the questionnaire. Forty-five people who did not fully complete the questionnaire were excluded from the study. The study group consisted of 636 people. The participants in the study were those who completed the questionnaire and explicitly agreed to participate; thus, no written informed consent was obtained from them. The questionnaires were distributed by the researchers to the duly authorized personnel in the municipality. The questionnaires delivered to the municipal employees by the authorized personnel were completed by the employees themselves. This process took approximately 15-20 minutes. The completed questionnaires were collected again by the authorized personnel and received by the researchers on the predetermined date.

2.2. Ethics Approval

The necessary approvals were obtained from the Ethics Committee for Non-interventional Clinical Research of Eskişehir Osmangazi University with the number 61 and date 16.05.2023 and from the Odunpazarı Municipality.

2.3. Data Collection Tool And Data Collection Process

In order to collect data in the study a questionnaire based on the literature was prepared (Boon 2014; Rivera and Kapucu 2015; Sözcü and Aydınözü 2019). The first part of the questionnaire includes some socio-demographic characteristics of the municipal employees (age, gender, marital status, educational status, family income level, etc.) and some variables that are assumed to be related to the level of disaster literacy (where he/she deals with disaster-related issues most offen, whether he/she has received training on disasters, whether he/she has first aid knowledge, disaster kit preparedness, whether he/she has an disaster emergency plan, etc.). The second part contains the questions of the Disaster Literacy Scale (DLS) and the third part contains the questions of the Individual Disaster Resilience Scale (IDRS). In the present study, the Cronbach's Alpha value for the Disaster Literacy Scale was 0.981, while the Cronbach's Alpha value for the Individual Disaster Resilience Scale was 0.872.

Disaster Literacy Scale was used to determine the disaster literacy of municipal employees. Çalışkan and Üner developed this scale in 2023. The scale, which is comprised of four sub-dimensions: mitigation, preparedness, response, and recovery, comprises 61 questions in a 5-point Likert format. The responses to the inquiries are classified as follows: "very difficult" (1), "difficult" (2), "not sure" (3), "easy" (4), and "very easy" (5). The scores that can be obtained from the scale range from 61 to 305, with higher scores indicating a higher level of disaster literacy. The Cronbach's Alpha value of the Disaster Literacy Scale is 0.954, with values between 0.83 and 0.88 observed in the sub-dimensions (Çalışkan and Üner 2023).

The Individual Disaster Resilience Scale was developed by DiTirro in 2018 (DiTirro 2018). The Turkish validity and reliability study of the scale was conducted by Şen in 2022. The scale comprises a total of 19 5-point Likert-type questions (1=Strongly Disagree, 2=Disagree, 3=Unsure, 4=Agree, 5=Strongly Agree) distributed across four sub-dimensions: coping with information, emotional coping, joint coping, and coping with experience. The scale includes reverse-coded items, specifically questions 17, 18, and 19. The minimum score that can be attained on the scale is 19, while the maximum score is 95. A higher score on the scale indicates a greater level of disaster resilience in the individual. The Cronbach's alpha coefficient for the scale was determined to be 0.896. The Cronbach's alpha coefficients for the subdomains range from 0.914 to 0.802 (Şen 2022).

2.4. Statistical Analysis

The data obtained were analysed with SPSS (v15.0) Statistical Package Programme. The data were subjected to skewness, kurtosis, and Kolmogorov-Smirnov analyses to ascertain their normality. A normal distribution is accepted when the Kurtosis and Skewness values fall between -1.5 and +1.5 (Tabachnick, Fidell, and Ullman 2013). The skewness value of the disaster literacy variable was found to be -0.721, the kurtosis value 1.294 and the Kolmogorov-Smirnov test value 0.095. In accordance with the calculated values, it was determined that the disaster literacy variable exhibited negative skewness and kurtosis, yet remained consistent with the normal distribution. The statistical analysis was conducted using multivariate linear regression analysis and Pearson correlation analysis. Following the univariate analyses, further analysis was conducted using sociodemographic variables and related factors found to be associated with disaster literacy. This resulted in the creation of a multivariate linear regression model. A statistical significance value of $p \leq 0.05$ was accepted.

3. RESULTS

Of the study participants, 228 (35.8%) were female and 408 (64.2%) were male. Their ages ranged from 16 to 66 years, with a mean of 40.3 ± 8.5 years. The scores of the municipal employees in the DLS ranged from 61 to 305, with a mean of 210.2 ± 42.8 (median: 217.0) points. The distribution of DLS scores obtained by the study group according to some sociodemographic characteristics is shown in Table 1.

Table 1: The distribution of DLS scores obtained by the study group according to some sociodemographic characteristics

Some Sociodemographic Characteristics	**n**	**%**	**Scores from the Disaster Literacy Scale** Mean ± SD
Age Group (Year)			
34 and below	154	24.2	211.1 ± 44.1
35-39	138	21.7	208.1 ± 44.9
40-44	139	21.9	210.5 ± 39.5
45 and above	205	32.2	210.6 ± 42.7
Gender			
Female	228	35.8	213.1 ± 38.9
Male	408	64.2	208.5 ± 44.8
Marital status			
Married	460	72.3	211.6 ± 42.3
Not married	176	27.7	206.5 ± 44.0
Education status			
Middle school and below*	180	28.3	195.0 ± 46.5
High school*	163	25.6	208.6 ± 40.7
University and above*	293	46.1	220.4 ± 38.6
Family Income Status			
Bad*	121	19.0	199.6 ± 41.0
Middle*	449	70.6	211.1 ± 43.0
Good*	66	10.4	222.9 ± 41.0

Profession			
Employee	365	57.4	201.3 ± 44.5
Officer	239	37.6	221.4 ± 37.7
Executive*	32	5.0	227.6 ± 33.4
Total Duration in the Municipality (Year)			
4 and below	212	33.3	205.3 ± 45.3
5-9	234	36.8	210.4 ± 39.2
10 -14	91	14.3	213.0 ± 47.4
15 and over	99	15.6	217.3 ± 40.2
Total	636	100.0	210.2 ± 42.8

**p<0,001*

In the study group, 487 participants (76.6%) had no previous experience with disasters. Of these, 201 (31.6%) had received training on disaster-related topics and 180 (28.3%) were prepared to protect themselves from potential disasters. The distribution of the scores of DLS obtained by the study group according to some variables assumed to be related to disaster literacy can be found in Table 2.

Table 2: The distribution of the scores of DLS obtained by the study group according to some variables assumed to be related to disaster literacy

Some Factors Thought to Be Related to Disaster Literacy	n	%	Scores from the Disaster Literacy Scale Mean ± SD
Experience Any Disaster			
No	487	76.6	209.2 ± 44.2
Yes	149	23.4	213.2 ± 37.9
Type of Disaster Experienced			
I Did Not Experience a Disaster	447	70.3	209.7 ± 43.1
Earthquake	177	27.8	211.2 ± 43.1
Other	12	1.9	213.6 ± 24.9
Sources of Information About Disasters			
I Do Not Follow Any Source**	27	4.2	179.3 ± 51.6
TV/Radio/Newspaper/Brochure	351	55.2	207.8 ± 41.4
Internet /Social Media	212	33.3	214.9 ± 39.9
Other	46	7.2	224.6 ± 50.7
Losing a Relative in a Disaster			
I Was Not Experience a Disaster	449	70.6	210.4 ± 43.9
Yes	33	5.2	206.5 ± 39.5
I Was Experienced A Disaster, But I Did Not Lose Anyone Close To Me	154	24.2	210.4 ± 40.3
Suffering Any Financial Loss in a Disaster			
I Was Not Experience a Disaster	459	72.2	211.2 ± 43.6
Yes	28	4.4	204.7 ± 35.3
I Was Experienced a Disaster, But I Did Not Experienced Financial Loss	149	23.4	208.0 ± 41.7
First Degree or Second Degree Relatives Exposure to Any Disaster			
No	503	79.1	209.1 ± 43.2
Yes	133	20.9	214.2 ± 41.0
Status of Receiving Any Disaster-Related Training			
No	435	68.4	205.1 ± 45.2
Yes**	201	31.6	221.1 ± 34.7
Status of Receiving First Aid Training			
No	332	52.2	205.7 ± 44.0
Yes*	304	47.8	215.0 ± 41.0
Having a Disaster and Emergency Bag at Home			
No	440	69.2	205.0 ± 45.4

Yes**	196	30.8	221.7 ± 33.7
Having a Personal and/or Family Disaster Plan			
No	438	68.9	203.0 ±44.5
Yes**	198	31.1	226.0 ± 33.9
Being Aware Of Disaster Risks in The Region/Province			
No	329	51.7	197.7 ± 45.0
Yes**	307	48.3	223.6 ± 35.9
Being Aware Of The Location Of Gathering Areas in The Area Of Residence			
No	359	56.4	201.2 ± 44.6
Yes**	277	43.6	221.8 ± 37.3
Preparedness for Possible Disasters			
No	456	71.1	205.3 ± 42.1
Yes**	180	28.3	222.5 ± 42.2
Knowledge What to Do in Case of a Possible Disaster			
No	273	42.9	199.3 ± 43.4
Yes**	363	57.1	218.3 ± 40.5
Willngness to Receive Disaster-Related Training			
No	250	39.3	203.3 ± 45.5
Yes**	386	60.7	214.6 ± 40.4
Total	636	100.0	210.2 ± 42.8

*$p<0,05$, **$p<0,001$

As a result of further analysis in our study, it was found that municipal employees' disaster literacy was related to their level of education level, knowledge of disaster risks in their place of residence, knowledge of the location of the gathering areas and perception of disaster preparedness. The results of the Multivariate Lineer Regression Analysis (educational status, family income status, profession, disaster information sources, disaster-related training, first aid training, having a disaster and emergency kit at home, having a personal and/or family disaster plan, being aware of disaster risks in the region/province, being aware of the location of gathering areas in the neighbourhood, preparedness for possible disasters, knowledge of what to do in the event of a possible disaster, willingness to take disaster-related training) were created that are related to disaster literacy are shown in Table 3.

Table 3. The results of Multivariate Lineer Regression Analysis were created that are related to disaster literacy

Variables	**Disaster Literacy Scale Score**		
	Non-Std. B	**Std. Beta**	**95% CI** *
Education Status**	5.342	0.105	0.539-10.145
Family Income Status	3.147	0.039	-3.143-9.437
Profession	5.115	0.071	-1.652-11.881
Sources Of Information About Disasters	1.484	0.024	-3.355-6.322
Status Of Receiving Any Disaster-Related Training	3.811	0.041	-3.811-11.432
Status Of Receiving First Aid Training	-5.907	-0.069	-13.014-1.201
Having A Disaster And Emergency Bag At Home	1.558	0.017	-6.571-9.687
Having A Personal And/Or Family Disaster Plan	5.889	0.064	-2.795-14.573
Being Aware Of Disaster Risks in The Region/Province**	12.534	0.146	4.693-20.374
Being Aware Of The Locations Of Gathering Areas in The Region You Live in**	7.267	0.084	0.107-14.428
Preparedness For Possible Disasters**	9.139	0.096	0.687-17.592
Knowledge of What To Do in Case Of A Possible Disaster	1.080	0.013	-6.873-9.033
Willingness To Receive Disaster-Related Training	5.786	0.066	-0.914-12.485
R^2	0.147		
F	9.429		

*Confidence Interval, **$p<0,05$

The IDRS scores of the study group ranged from 28 to 95 with a mean of 60.9 ± 11.6 (median: 61.0) points. It was found that there was a moderate positive correlation between the scores obtained by the municipal employees in the DLS and the scores obtained in the IDRS (*p<0.001, r=0.555*). The distribution of points scored by municipal employees in the IDR and points scored in the IDRS is shown in Figure 1.

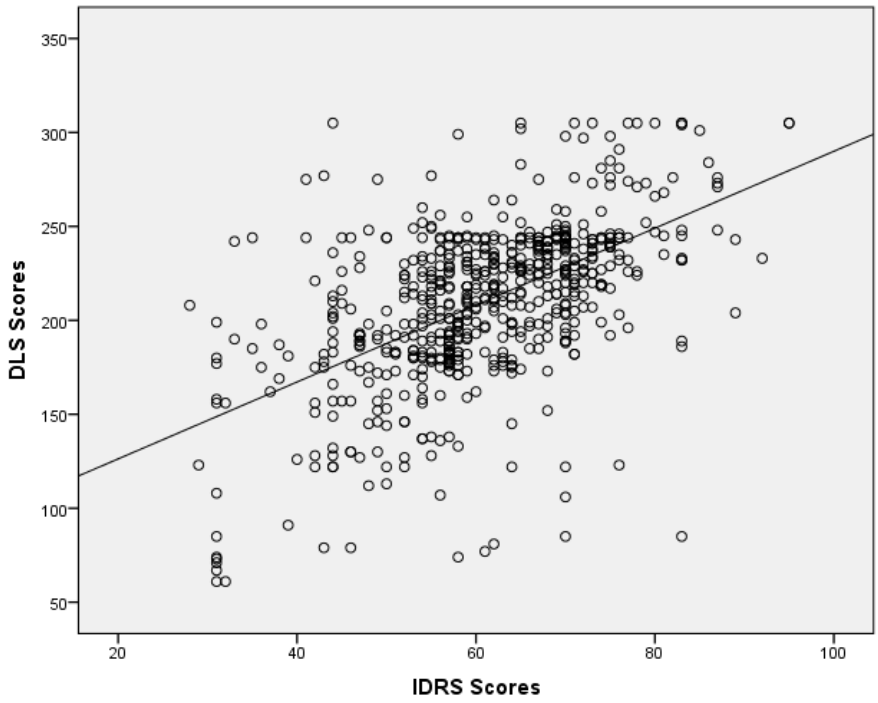

Figure 1. The distribution of points scored by municipal employees in the IDR and points scored in the IDRS

4. Discussion

In order to effectively prepare for and respond to disasters, it is important to have a clear understanding of what a disaster is. Disaster literacy provides people with the necessary knowledge to mitigate disaster risks. You do not have to be a disaster expert, but you do need to have basic knowledge, attitudes and behaviors related to disasters (Sözcü and Aydınözü 2019).

The level of education is an important factor that influences an individual's lifestyle and behavior. In addition, individuals with a higher level of education are expected to have a higher level of disaster literacy, as they have access to more information about disasters during their educational life, which increases their awareness of disasters. Our study found that the higher the level of education, the higher the level of disaster literacy. Genç et al. and Demirci reported that the level of disaster literacy was higher among individuals with higher levels of education levels (Genc et al. 2022). However, Farzanegan et al. found no relationship between education level and disaster literacy levels (Farzanegan, Fischer, and Noack 2024). The different results of the studies may be due to differences in the educational systems and educational curricula of the countries in which the studies were conducted.

Disasters have different characteristics, including type, severity, timing and location of occurrence. It is important that people are informed about the disaster risks in their region in order to increase their awareness and take the necessary precautions to protect themselves and others. This can also improve their disaster literacy. The study found that participants who were aware of the disaster risks in their locality had high disaster literacy levels. A review of the literature revealed no studies that examined the relationship between knowledge of disaster risks in the region and disaster literacy. Some studies have

indicated that a significant proportion of the population is unaware of the disaster risks in their own region (Demirci 2021; Tekeli-Yeşil et al. 2010).

To improve disaster literacy and preparedness, it is important to know our environment, to know what to do in the event of a disaster, and to know where the gathering areas are located. Our study found that people who knew the location of gathering areas in their region had higher disaster literacy levels. In one study, it was reported that those who knew the location of gathering areas had higher disaster literacy levels (Sözcü and Aydınözü 2019). In another study, it was reported that people who did not know the locations of gathering areas in their region (Demirci 2021). The disparate outcomes observed may be attributed to variations in socioeconomic status and educational attainment among the individuals residing in the regions where the studies were conducted.

Individuals with high disaster literacy are better prepared for disasters. This study found that those who consider themselves prepared for possible disasters have high disaster literacy levels. Zhang et al. also reported that individuals who reported being prepared for disasters had high disaster literacy levels (Zhang et al. 2021). Bekler et al. reported that there was no relationship between disaster preparedness and disaster literacy (Bekler et al. 2022). The discrepancies in the outcomes observed across various studies may be attributed to the disparate sociodemographic profiles of the sampled populations and the absence of a uniform methodology for assessing disaster preparedness levels. Additionally, the reliance on self-reported data may have introduced a degree of subjectivity into the findings.

Resilience to disasters is influenced by various individual, physical, sociological, economic, psychological and environmental factors. It is widely recognised that individual disaster resilience can only be achieved through positive interactions between all these factors. Individuals who can facilitate such interactions are likely to have a high level of disaster literacy. The study found that individual disaster resilience increases with the level of disaster literacy increases. Similarly, Saifudin et al. and Miyamoto et al. observed a positive correlation between disaster literacy and resilience (Miyamoto et al. 2022; Saifudin n.d.).

5. CONCLUSION

Our study found that disaster literacy and individual disaster resilience of municipal employees are at an intermediate level. We found that disaster literacy levels were higher among those who had a higher level of education, who were knowledgeable about disaster risks in their area, who were familiar with gathering points in their area, and who felt prepared for potential disasters. A positive correlation was found between the disaster literacy of municipal employees and their individual disaster resilience.

The study has several limitations. First, it is a cross-sectional study. Second, the data collection is limited to the employees of Eskişehir Odunpazarı Municipality. Third, the survey form used is based on subjective responses and relies on the participants' own thoughts and memories. Therefore, the results may have limited generalizability. The article focuses on disaster literacy and individual disaster resilience, but does not address economic, social or political issues related to disaster management. This may lead to incomplete evaluations. The article aims to raise awareness by providing a general overview.

A strength of our study is that it was conducted among municipal employees who are responsible for first responders to disasters. In addition, this study is the first in Türkiye to examine disaster literacy and individual disaster resilience together. There are only a limited number of studies on this topic in the international literature.

Disaster literacy and individual disaster resilience are crucial for disaster preparedness. Training can be provided to enhance disaster literacy, particularly for municipal employees who are among the initial responders to disasters. It may be beneficial to conduct drills on a regular basis. In-service training can be designed to enhance the individual disaster resilience of municipal employees. The formulation of disaster preparedness action plans can facilitate the active participation of all municipal employees in

these plans. Consequently, employees' disaster literacy and individual disaster resilience levels can be enhanced. It is recommended that more comprehensive studies be conducted to investigate the relationship between disaster literacy and individual disaster resilience.

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