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<b>ASSESSING DISASTER PREPAREDNESS OF ADULT INDIVIDUALS: A PHENOMENOLOGICAL STUDY FROM THE PERSPECTIVE OF DISASTER WORKERS WITH A SPECIFIC FOCUS ON ANDRAGOGY*</b> <b>◆◆◆</b> <b>ANDRAGOJİ KAVRAMI ODAĞINDA AFET ÇALIŞANLARI PERSPEKTİFİNDEN BİREYLERİN AFETE HAZIR OLMA DURUMLARININ DEĞERLENDİRİLMESİ: FENOMENOLOJİ ÇALIŞMASI</b>		
<b>Atf/ to Cite (APA):</b> Uzunali, S, Zülkar, Y. ve Yıldızlar, H.Y. (2023). Assessing Disaster Preparedness of Adult Individuals: A Phenomenological Study From The Perspective of Disaster Workers With A Specific Focus on Andragogy, Sosyal Araştırmalar ve Yönetim Dergisi, 58-68.		<b>Seda UZUNALİ**</b> <b>Yeşim ZÜLKAR***</b> <b>Hüseyin Yamaç YILDIZLAR****</b>
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### ABSTRACT

The study aims to assess the disaster preparedness level of individuals through the perspective of disaster workers with a focus on andragogy. Qualitative research was conducted using the phenomenology design with a study group of 10 experts from the Trabzon Provincial Disaster and Emergency Management Authority, selected through purposive sampling. Thematic analysis by van Manen was used to analyze the data. The study found that disaster education was the most critical issue in disaster events, emphasizing the need to create awareness through education. The content of disaster education should be interesting to address the resistance of adult individuals, and disaster preparedness should begin at various stages, including simulation training. Education should be sustainable, mandatory, and tailored to regional conditions, supported by visual aids, videos, and public service announcements. It is recommended to foster a disaster awareness culture and to design education to eliminate prejudice among adult individuals. We further emphasize ensuring individual safety before communal safety within the initial 72 hours following a disaster and having a readily available disaster kit is essential. <sup>1</sup>

**Keywords:** Andragogy, Disaster Preparedness, Phenomenology

### ÖZ

Bu araştırmanın amacı andragoji kavramı odağında bireylerin afete hazır olmalarının afet çalışanları perspektifinden değerlendirilmesidir. Araştırma nitel araştırma yöntemlerinden fenomenoloji deseni yürütülmüştür. Araştırmanın çalışma grubunu Trabzon İl Afet ve Acil Durum Müdürlüğünde çalışan alanında uzman 10 kişi oluşturmaktadır. Çalışma grubu amaçlı örnekleme yöntemlerinden *tipik durum örnekleme yöntemiyle* belirlenmiştir. Veriler Van Manen'in tematik analizi ile analiz edilmiştir. Katılımcılar; afet olaylarında en önemli konunun afet eğitimi olduğunu, farkındalığın eğitimlerle oluşturulması gerektiğini, eğitim içeriklerinin ilgi çekici hale getirilmesini, yetişkin bireylerin afet eğitimine katılım gösterme konusunda daha fazla direnç gösterir durumda oldukları, afete hazırlığın birçok evreden başlaması gerektiğini, özellikle simülasyon eğitimlerinin

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önemli olduğunu, eğitimlerin sürdürülebilir, zorunlu ve bölge şartlarına göre olması gerektiğini, eğitimlerin görseller, videolar ve kamu spotları kanalları aracılığıyla desteklenmesi gerektiği, afet bilinci kültürünün oluşturulması ve eğitimlerin yetişkin bireylerde ön yargıyı uzaklaştırılacak şekilde yapılması gerektiğini, ilk 72 saatin altın saatler olarak nitelendirildiğini önce bireysel sonra toplumsal güvenliğin sağlanması gerektiği ve son olarak afet çantasının hazır bulundurulmasının önemli olduğu ifade edilmektedir.

**Anahtar Kavramlar:** Andragoji, Afete hazırlık, Fenomenoloji

## 1. INTRODUCTION

The World Health Organization (WHO) defines a disaster as "an unexpected sudden ecological occurrence that exceeds the resources and capacity of the institution, disrupts normal functioning, and requires external assistance" (WHO, 2015). It represents a significant public health issue due to their detrimental impact on life and property and sudden development and their associated adverse economic, psychosocial, and future health problems (Tel, 2016; Ersoy, 2017; Erdoğan, 2018). Disaster management should focus on minimizing the negative effects caused by disasters. Disaster management, however, does not only consist of the intervention phase after disasters occur and encompasses activities implemented before, during, and after disasters (Gültekin et al., 2019). In this context, disaster education constitutes the first and most important part of disaster prevention (Ivanov and Cvetković, 2014; Vaughter, 2016; Aghaei et al., 2018). As disasters cause heavy loss of life and property and inflict material and moral damage on society, disaster education is essential for all strata of society to raise public awareness and minimize the damage caused by disasters. (Yorulmaz and Karadeniz, 2021; Tekin and Dikmenli, 2021; Değirmenci et al, 2019). It is crucial to raise awareness of adults through disaster education in order to reduce the harmful effects of disasters as much as possible. Andragogy is crucial in the education of adults in order to reduce the effects of disasters. The term Andragogy is derived from the Greek words 'andr' (man) and 'agogos' (leader, guide leader) (Çiçek, 2022). Andragogy is a framework that guides adult education practices by promoting needs-based education and the learner-centered facilitation process where the learning process is initiated more on the learner side (Desta and Gugssa, 2022). Andragogy was first introduced by Alexander Kapp in 1833 and later popularized by Malcolm Knowles in the 1960s (Çiçek, 2022). According to Robinson and Gilmartin (2002), andragogy emphasizes the mutual interaction between facilitator and learner and determines the parameters of learning experiences. Similarly, Carlson McCall et al. (2018) argue that andragogy emphasizes the learning and internalizing learners' needs more than the teaching process and the teachers' presentation. The concept of andragogy, which is also used in adult education, makes the learning process of adults easier with its six principles (Desta and Gugssa, 2022).

Below are the assertions presented in recent literature (Purwati et al., 2022; Desta & Gugssa, 2022; Tezcan, 2022):

1. Need to know: Adults feel obliged to understand the reasons why they need to learn the subject matter.
2. Self-concept: Adults are autonomous learners with greater responsibility for their learning.
3. Role of experience: Adults possess more experiential knowledge and rely on it as a learning resource.
4. Orientation to learning: Approaches such as student-centered, problem-based, and performance-based learning can educate adult learners.
5. Readiness to learn: Adult students' learning motivation depends on their social and professional environment.

6. Motivation to learn: Adult learners are motivated by intrinsic and extrinsic factors like salary and job satisfaction.

There is no published research on integrating "andragogy" and "disaster" in education in Turkey. Given the frequency of disasters in Turkey, it is essential to equip adults with the knowledge and skills to respond effectively. To this end, there is a need to establish effective educational practices for adults to receive disaster education rapidly and efficiently. Experts in the field have been consulted to identify the critical components of adult disaster education. It is imperative to determine adult disaster education's appropriate format and content to enhance their preparedness for potential disasters. This study aims to evaluate the level of disaster preparedness among individuals as assessed by disaster workers using an andragogical approach. The research questions addressed by this study are as follows:

1. What are the factors affecting the readiness for a disaster of adult individuals?
2. What is the relationship between being prepared for disasters and disaster education?
3. What are the factors that make disaster education interesting?

## 2. METHODS

### 2.3.2.1. Research Sample

The research sample consisted of Trabzon Provincial Disaster and Emergency Management Authority staff members who met the inclusion criteria of holding a bachelor's degree, having at least two years of experience in the field, and providing informed consent to participate in the study. Detailed data were collected from the participants to gather their thoughts and experiences. While there is no established principle regarding sample size in qualitative research, data collection is typically considered complete when adequate data have been collected, no further information is available, and the same data continue to emerge (Polit and Beck, 2006). The data were collected between November and December 2021 using a Semi-Structured Interview Form with ten field experts. The interviews were conducted face-to-face at the Trabzon Provincial Disaster and Emergency Management Authority. Data saturation is considered to have been reached when no new findings are encountered in the research, and there are no logical gaps in the created categorization system (Corbin and Strauss, 2015). In this context, the current study concluded that the saturation point was reached when no new findings or categories emerged from the statements of the relevant individuals, and data collection was terminated at the 10th person. The data were then transcribed and analyzed thematically, resulting in two themes and five categories, which were subsequently described in detail.

### 2.4. 2.2. Data Collection

Qualitative research methods have been deemed appropriate for our study due to their ability to make sense of individuals' knowledge, experience, perception, and emotions within their social context, and to reflect different perspectives related to the same context. As a result, we have chosen to use the face-to-face interview technique, one of the qualitative research methods, as it allows us to capture individuals' diverse views on disaster preparedness. Researchers have developed the interview questions in a way that is relevant and suitable to the purpose and significance of the study and will assist us in evaluating our findings (Bozkurt, 2020).

The researchers have developed a Semi-Structured Interview Form consisting of six questions, drawing on relevant literature. The interview questions were designed to enable experienced professionals to provide in-depth descriptions of their thoughts, experiences, and perspectives. The interview questions are provided below:

1. What does disaster preparedness mean? Could you provide further elaboration?
2. What is your opinion on the disaster preparedness of adult individuals?
3. Do you believe there is a correlation between disaster preparedness and disaster education? Could you provide further elaboration?
4. What should adult education for disaster preparedness entail? Could you provide further elaboration?
5. What measures should be taken to generate interest in disaster preparedness education? Do you have any recommendations? Could you provide further elaboration?
6. Is there anything else you would like to add? Could you provide further elaboration?

The research subjects were informed of the study's objectives at the outset of the interview, and both written and verbal responses were obtained. Following the interview, the participants were given the opportunity to provide additional comments. The subjects' responses were recorded using a voice recorder.

## **2.5.Data Analysis**

Phenomenology seeks to comprehensively grasp and elucidate the significance, structure, and essence of individuals' or groups' experiences related to a particular phenomenon (Patton, 2014). In the current study, it is crucial to identify the root cause of the problem and describe it by conducting interviews with the institution's personnel. Qualitative data analysis involves several steps, such as data preparation and organization, coding, consolidation of codes into themes, and presentation of data through discussion (Creswell and Creswell 2018). For the present study, thematic analysis developed by van Manen (Van Manen, 2014) was used to analyze the data. Microsoft Office was utilized to transcribe the recorded conversations. The transcripts were analyzed in three phases: (1) holistic examination (identifying sentences that reflect the main idea of each input), (2) selective reading (highlighting the sentences that relate to the topic of the question), and (3) line-by-line reading (scrutinizing each sentence separately to discern its intended meaning). The data were categorized into similar units or categories by coding the identified meaningful units. This process allowed data organization into smaller dimensions and depicting meaningful patterns (Boyatzis, 1998).

## **2.6.Validity and Reliability of Research**

The researchers conducted independent evaluations of the data to guarantee its reliability. Furthermore, the participating employees were requested to review and affirm the data for reliability, and employees with relevant expertise were questioned to ensure confirmability. Additionally, an expert with specialized knowledge in the relevant field but not involved in the research conducted a thorough review of the data to ensure its accuracy. Finally, to ensure the transferability of the data, the samples and data were reported in detail, thereby safeguarding the validity of the research.

## **2.7.Ethical Aspect of the Research**

This study received ethical approval from the Ethics Committee of Avrasya University (Approval Number 7349, Approval Date 04.11.2021). The participating employees were informed that their involvement in the study was voluntary, and they were entitled to withdraw from the research without any explanation at any time. To maintain the privacy of the participants and ensure the confidentiality of personal data, a nickname was employed in place of a real name throughout the study.

### 3. RESULTS

The objective of this study was to explore how adult individuals can be prepared for disasters based on the insights of experts at the Trabzon Provincial Directorate of Disaster and Emergency Authority, with a particular focus on andragogy. The study involved ten staff members (2 women and 8 men) aged between 30 and 50 years. Through data analysis, two themes and five categories were identified, outlined in detail in Table 1.

**Table 1. Themes and categories derived from the experiences of field experts**

Themes	Categories
1. Critical points and activities in disasters	Content of disaster education
	Activities
2. Disaster preparedness	Thoughts of adults on disaster and their view of disaster education
	Disaster readiness must start from many phases
	Points to be considered and developed in disaster preparedness education for adults

#### 1.1.Theme 1. Critical Points and Activities in Disasters

Most study participants emphasized the critical nature of certain activities during disasters. They stressed that disaster education is paramount and that such training can increase awareness. As one participant noted:

*In the event of a disaster in the Trabzon province, emergency responders such as AFAD officials, the fire brigade, the gendarmerie, and the police can assist. However, since the disaster may also impact them, they will be preoccupied with their challenges. Consequently, during major disasters, we often have to seek help from other provinces. Until this aid arrives, citizens are left to fend for themselves. This is where a disaster bag comes in handy for the first 72 hours. During our training sessions, we emphasize the importance of having an emergency bag that contains essential items such as a radio, whistle, clothing appropriate for seasonal conditions, and water. (K9)*

##### 1.1.1. Category 1. Content of disaster education

About half of the participants in the study stressed the significance of disaster education, with a focus on its content. Earthquake disasters were identified as a top priority, with the first 72 hours being deemed the "Golden Hours." The participants emphasized the need to prioritize personal safety and then community safety by having a disaster kit prepared. As one participant noted,

*Individuals must be prepared for the initial 72-hour period of a disaster, referred to as the Golden Hours. To achieve this, people should receive disaster awareness education, develop plans based on this education, and equip themselves accordingly for the first 72 hours as per their plan. (K10)*

##### 1.1.2. Category 2. Activities

Around half of the participants highlighted the importance and necessity of disaster-related activities carried out by AFAD. The AFAD Volunteer System and the Year of Disaster Education in 2021 were mentioned as significant developments. As one participant stated:

*The AFAD Volunteer System has been in place since 2019. With the AFAD Volunteer System, any individual over 18 can become a volunteer by completing the necessary training, which is available on our website. (K9)*

## **1.2.Theme 2. Disaster Preparedness**

In the theme of disaster preparedness, the participants expounded on raising disaster education and suggested it is difficult to make the education content more engaging. In particular, they underscored the importance of adults' attitudes toward disasters and disaster education, the multi-phase nature of disaster preparedness, and the need to improve and develop adult disaster preparedness education.

*By providing comprehensive education, we can equip individuals with the necessary skills to prioritize their personal and community safety during a disaster, and identify their roles and responsibilities. We can achieve an outstanding outcome by conducting exercises that allow people to apply what they have learned. This way, the education and the existing knowledge of the public converge, resulting in a group of individuals who are aware and prepared for disasters. This not only averts the conversion of an event into a disaster, but also prevents chaos during the disaster. (K6)*

### **1.2.1. Category 1. Thoughts of adults on disaster and their view of disaster education**

The overwhelming majority of the participants highlighted that individuals tend to disregard disaster education until they experience a disaster first-hand, the right behaviors are not exhibited during a disaster, and adults are more hesitant to participate in disaster preparedness programs. Their views can be summarized as follows:

*My experience responding to an incident showed that our citizens often fail to display the appropriate behaviors during disasters and instead act impulsively, which can put us in a precarious position. This hinders our ability to intervene effectively and may prevent us from saving those in need. This issue must be acknowledged because adult individuals, who do not prioritize disaster training, may inadvertently cause more harm than good in a disaster situation. For instance, four years ago in the Araklı district of Trabzon province, a taxi plunged into a stream and drifted for a while before stopping in the middle of the water. We could not reach the car because we had no safe installation spot. While waiting for a jack to arrive, citizens exclaimed, "Why are you waiting? Get into the water. Do something, or let us do it." This reaction undermined our motivation and caused citizens to endanger themselves by entering the creek, increasing our responsibility. In short, this lack of disaster awareness prolongs response times and exacerbates the impact of disasters. (K1)*

*In short, adult individuals are not very disaster ready because our people do not learn their lessons before they experience a disaster first-hand. (K3)*

*Since we are an especially resistant society to education, raising communities sensitive to disasters is difficult. There's a wall of resistance when it comes to adults. It's hard to knock it down, but it would be easier to raise people with disaster preparedness at younger ages would be easier by including disaster education in the curriculum, perhaps starting in daycare, kindergarten, or primary school. (K4)*

### **1.2.2. Category 2. Disaster readiness must start from many phases**

One of the participants emphasized that effective risk management is essential to prevent disasters from escalating into crises. To achieve this, disaster preparedness should be approached through multiple phases:

*Readiness for disaster should start in many phases. Pre-disaster planning and identifying appropriate behaviors to be taken, informed by prior experiences and literature on past disasters in our country or*

around the world, are critical to ensure effective preparation and response. This approach is more likely to result in successful outcomes. (K4)

### **1.2.3. Category 3. Points to be considered and developed in disaster preparedness education for adults**

The participants emphasized that disaster education should follow a general-to-specific approach and include practical training, with a particular focus on simulation training. Furthermore, they stressed the need for education to be sustainable and adapted to regional conditions. The participants highlighted that disaster education should be mandatory and supported by various mediums such as visuals, videos, social media, and public service announcements. National and local television should also provide disaster education to the public. They proposed the creation of a culture of disaster awareness and the elimination of prejudice in adults through targeted education. Finally, they recommended increasing the number of disaster education centers. The participants' statements regarding these suggestions are as follows:

*The promotion of disaster awareness must commence with disaster awareness education. To this end, a general-to-specific approach is recommended in disaster education. This entails the provision of foundational education before region-specific education. In the context of regional education, it is essential to have knowledge of the disaster risks present in the region and to undertake corresponding preparedness measures. (K2)*

*It is necessary to implement the existing shortcomings in tandem with the drills is necessary. Field drills are more important than desk drills. (K6)*

*I think disaster response's efficacy is better demonstrated through practical and visual application, as opposed to theoretical explanations alone. We have earthquakes and simulation trails. It would be more efficient to make applications using them. The Black Sea region is a flood and landslide zone. If possible, flood and landslide tracks can be established to carry out drills. In this way, I think awareness of these dangers would be enhanced. (K1)*

*People only remember the training for a few months; therefore, these training sessions must be done more often. It can be done not once a year, but quarterly. In addition, I believe that our citizens will be more aware through social media channels such as Twitter, Instagram, YouTube, and TV. (K9)*

*Any person with disaster-related training can prepare themselves for that disaster. A person who has experienced a disaster knows better how to protect themselves based on the type of disaster they have experienced. Subsequently, they can make more informed choices when selecting their homes and settlements. Education certainly is an indispensable component in this regard. (K3)*

*Each region experiences a different kind of disaster. That is why I think education should be provided by considering local characteristics. For example, it is certainly useful for people in the Black Sea region to know about earthquakes, but they need to know about floods first. They need to improve their attitude toward floods and then prioritize other disasters. (K4)*

*Familiarity with disaster preparedness can be established through various means, such as signs, advertisements, and banners. In this way, they can be ensured to participate in training. Training sessions can incorporate visuals, social media, videos, documentaries, and examples of major disasters to increase interest. (K5)*

*Adults often hold prejudices against disaster education. Adult education should be structured to challenge and overcome these preconceptions. They can also take responsibility on national channels to increase interest in disaster preparedness education. National television can create programming reserved for broadcasting disaster education. (K7)*

*When the participants in training sessions transfer their gains into their daily lives, they develop awareness and live with a culture of disaster awareness. The basis for creating this culture is education. In this direction, increasing the number of Disaster Education Centers will increase the gain in awareness training and the demand for awareness training. K10).*

## **2. DISCUSSION**

Ten participants shared their experiences to determine whether our data aligned with andragogy assumptions. A key finding of the research is that nearly all participants emphasized the critical nature of disaster education and the content of such education during a disaster. When analyzing areas that require attention and development in adult disaster preparedness education, participants highlighted several key aspects: a general-to-specific approach with practical training, emphasis on simulation training, sustainability and customization to regional conditions, mandatory education supported by visuals videos, social media, and public service announcements, disaster education programming on national and local television, cultivation of a culture of disaster awareness, elimination of prejudices against disaster education in adults, and increasing the number of disaster education centers. Sakurai and Sato (2016) highlight Japan's 20-year experience in disaster education and propose a long-term, sustainable education model to develop resilient communities. Loeng (2018) emphasizes the need to consider facts and values in shaping a comprehensive adult learning theory (Loeng, 2018). In their study, White et al. (2022) express the importance of education in supporting research and development, stating that instructional activities are highly complex and can make it difficult to measure meaningful learning outcomes (White et al., 2022). (Sakurai and Sato, 2016). Remenick and Goralnik (2019) suggest that participation in the program should be prioritized before preparing an educational program and that the approach and learning methods should be tailored to the target group. These studies support our findings, which indicate that adults view disaster education as insignificant until they experience a disaster and are resistant to participating in disaster education. The participants in our study emphasized the importance of disaster training content, especially for earthquake disasters, where the first 72 hours are crucial for ensuring personal and community safety. Our findings align with Remenick and Goralnik's (2019) observation that adults prefer learning sessions relevant to their work or personal interests (Remenick, and Goralnik, 2019). Torani et al. (2019) noted that disaster education is important for reducing the exposure of vulnerable people to disasters and that education programs should be designed to protect both individuals and the community better. The same study stated that disaster education programs should be tailored to individuals with higher education to enhance their ability to protect themselves and others, enabling them to respond effectively to disasters. This finding aligns with our research, as we also observed that disaster education reduces vulnerability.

Knowles (1980) asserts that andragogy posits that adults learn to satisfy personal interests or solve problems, highlighting the uniqueness of each adult learner's interests or problems (Knowles, 1980). Consequently, an individual's history and prior knowledge shape their approach and understanding of new learning experiences (Knowles, 1989). Therefore, it is imperative to comprehend the learners before designing an educational program. The recruitment of all participants from the relevant institution is deemed particularly significant, particularly regarding the optimal format of disaster education. Nesbit et al. (2007) posit that adults are autonomous and have busy lives, necessitating the need for non-formal learning opportunities that respect, validate, and encourage their cognitive abilities, promote



engagement, reduce attrition, and support diverse learning needs (Nesbit, Dunlop, and Gibson,2007). Field experts contend that adult individuals' knowledge level may be inadequate for disaster preparedness, and advocate for more engaging disaster education, such as through advertisements, posters, and social media, to increase motivation. One key finding of this study is that disaster preparedness is a multi-phase process with critical stages that require attention and development. Most participants reported that there are critical points and activities during disasters and that the most important issue at these points is that disaster education awareness will be enhanced through this education. According to Sonkaya et al.'s research, awareness education is essential while providing disaster education in the 21st century (Sonkaya et al, 2019). Therefore, disaster education should be based on awareness education. Another important finding is that disaster awareness should begin with education, which should progress from general to specific. It is important to identify the existing risks in the region, consider local characteristics when providing education, and conduct drills accordingly. Individuals will be better prepared for disasters through awareness education and practical training.

### 3. CONCLUSION AND RECOMMENDATIONS

These results indicate that disaster preparedness is directly related to disaster education. It will be more effective if the training content is general to specific in a sustainable way, according to the current state of technology. Thus, it has been concluded that ensuring participation in disaster education is as crucial as providing education. A culture of disaster awareness is emphasized at the core of awareness. In conclusion, common problems and challenges include the need for monitoring and evaluation of models and the development of models for dissemination to measure the impact of education on attitude and behavior changes. There are three important limitations of this study. The first is the use of the phenomenological approach, which restricts the generalization of the results to the experiences of the experts regarding the impact of disaster education on the disaster preparedness of adult individuals. Secondly, the study was conducted only in the Provincial Directorate of Disaster and Emergency Management Authority, which limits the generalization of the results. Conducting this study in respective institutions in different provinces and reconducting it with larger samples may yield different findings. Finally, this study does not include focus group discussions, which could provide a more in-depth explanation of staff experiences. Nevertheless, the study's results are significant because professionals in the field have stated that the primary focus of disaster preparedness in adults is disaster education and practices.

This study highlights the importance of providing motivating and attractive disaster education for adult individuals, which includes practical applications and exercises. Education alone may not be enough to encourage participation, so campaigns through posters, brochures, and social media could be effective. Preparing for disasters involves knowing the first 72 hours, preparing a disaster kit, and being aware of the AFAD volunteer system. This study provides valuable insights for adult education program developers and emphasizes the importance of using andragogy as a framework to meet the needs of participants. More research is needed to identify changes that can be made in subsequent disaster education and practices for adult individuals.

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