

ORIGINAL ARTICLE

Evaluation of Disaster Awareness Perception Level in Relation to Socio-Demographic Factors of Public Food Service Staff: A Catering Example

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ABSTRACT

Rapid access to food and water in disaster-affected areas is crucial for meeting individuals' nutritional needs, and the uninterrupted operation of public food service is closely tied to the disaster awareness levels of staff. This study aimed to examine the disaster awareness perception level of public food service staff ($n = 223$), and to evaluate these perceptions in relation to socio-demographic factors. Data was collected using the Disaster Awareness Perception Scale, which consists of 36 items for disaster education awareness, pre-disaster awareness, false disaster awareness, and post-disaster awareness, along a socio-demographic questionnaire. The Cronbach's alpha for the scale was found 0.906. Participants 76.0% ($n = 169$) showing good, 15.8% ($n = 35$) moderate, and 8.2% ($n = 19$) insufficient levels of disaster awareness. Statistically significant differences were found according to age, educational level, and length of employment in the same workplace ($p < 0.05$), whereas no significant differences were observed regarding gender, marital status, work seniority, prior disaster experience, service in disaster areas, or having relatives in disaster zones. Consequently, staff with low disaster awareness should be considered a group requiring additional support in disaster preparedness and response processes. It is recommended to provide awareness-based and practice-oriented training, clarify disaster-related responsibilities in job descriptions, and increase the frequency of scenario-based drills. These findings demonstrate that disaster education and preparedness programs will promote a balanced level of disaster awareness. This study expands the literature on crisis management and disaster awareness perception by highlighting a public food service population that has not been studied in Türkiye or even globally.

1 | Introduction

Disasters profoundly impact societies, causing significant economic, social, and health consequences (Marsap 2023; Gümüş et al. 2024). Earthquakes, floods, landslides, climate-related catastrophes, and other natural hazards not only threaten individual lives but also compromise access to essential services, including safe drinking water, food, shelter, and health-care (UNISDR, 2009; Kök 2023). Vulnerable groups—including children, the elderly, pregnant and lactating women, and

individuals with chronic illnesses—are disproportionately affected, highlighting the necessity for comprehensive disaster management that ensures uninterrupted access to basic human needs (Kadioğlu 2008; Kadioğlu 2017; Özler 2021; FAO, IFAD, UNICEF, WFP, & WHO 2022; Akay et al. 2024).

Disaster management encompasses risk identification, preparedness, response, and recovery processes, requiring a holistic approach (Kadioğlu 2008; Şahin 2019; Kahraman et al. 2021). An effective disaster management system enhances community

resilience while optimizing resource utilization during crises (Marsap 2023; Sarı and Özer 2024). The February 6, 2023, earthquakes in Kahramanmaraş, Turkey, underscored the critical importance of nutrition and logistics planning within disaster management. Delays in food aid distribution increased the risks of food insecurity and exacerbated health problems (Aldemir 2023; Turkish Red Crescent, 2023), underscoring the importance of preparation, coordination, and planning in disaster management (AFAD 2025).

Nutrition plays a crucial role in mitigating the societal impacts of disasters (FAO, IFAD, UNICEF, WFP, & WHO 2022). Adequate nutrition not only supports energy needs but also immune function and physical recovery processes (Fernández-Lázaro and Seco-Calvo 2023). A balanced diet provides an adequate intake of macronutrients and micronutrients. Carbohydrates provide energy, proteins repair muscle tissue, fats aid cell structure and vitamin absorption, and micronutrients regulate immune and metabolic functions (Mihara et al. 2019; Akay et al. 2024). Inadequate nutrition during disasters weakens immunity, increases susceptibility to disease, and delays recovery (Güden and Borlu 2023).

Public food service systems are designed to provide safe, nutritious, and sufficient food simultaneously to large groups, including schools, hospitals, elder care facilities, military units, and disaster response areas (Howell et al. 2020; Doğan 2022). These systems are crucial for protecting public health and preventing the spread of infectious diseases (Patten et al. 2021; Tün 2024). Effective food distribution from a public food service requires menu planning based on age, health status, and nutritional needs, as well as compliance with hygiene and food safety standards, and consideration of sustainability and cost-effectiveness (Yeşildal 2020; Akpolat et al. 2021). In disaster management, public food service plays an important role in supporting recovery and minimizing health risks among the affected populations (Ongan et al. 2023; Akay et al. 2024).

In disaster cases, it is important that the search and rescue personnel, as well as individuals affected by the disaster, have access to adequate and balanced food (Afifah et al. 2022). The average daily energy requirement for disaster-affected individuals is approximately 2,100 kcal, ideally supplied with 60–65% carbohydrates, 10–12% protein, and 18% fat, adjusted according to specific needs (Sphere Association 2018). In disaster situations, public food service involves a multi-phase process that encompasses both short-term and long-term nutrition support. Short-term services focus on the initial weeks of acute disaster impact, prioritizing energy-, protein-, and vitamin-rich, portable, and non-perishable foods. Long-term services rely on mobile and field kitchens to ensure sustainable food provision throughout the disaster period (Amagai et al. 2014; Kalyoncu Atasoy et al. 2024).

Planned and sustainable nutrition services not only meet basic needs but also facilitate the restoration of societal order following disasters (Doğru and Ede 2020; Akay et al. 2024). Search and rescue teams work specific hours and need food and rest, so food procurement should begin as soon as a disaster strikes (Aydın et al. 2024). Furthermore, individuals affected by the Kahramanmaraş earthquake on February 6, 2023, experienced food supply issues, and media reports revealed that delays in food distribution resulted in a significant amount of food being

wasted (Aldemir 2023). In this context, awareness of disasters among the public food service staff is vital for them to make quick and informed decisions during and after disasters. Staff knowledgeable about disaster protocols can ensure food safety, minimize health risks, and support the psychological recovery of those affected (Şengün and Küçükşen 2019; Lillywhite and Wolbring 2022; Turkish Red Crescent, 2021). In this context, integrating disaster management and nutrition services is essential to enhance community resilience and support recovery processes. Raising disaster awareness among the public food service staff, also known as catering staff, is necessary for effective response and sustainable nutrition service delivery during disasters (Paton 2008; Kadioğlu 2017; AFAD 2025). Consequently, disaster nutrition planning should be considered a strategic priority to protect public health and mitigate the negative impacts of disasters.

Furthermore, in Turkey, disaster awareness initiatives largely target the general public and public sector employees, while systematic, mandatory training programs specifically addressing food service personnel's disaster awareness perceptions are limited. Disaster awareness training conducted by Disaster and Emergency Management Presidency (AFAD) mainly focuses on general disaster preparedness, first aid, and emergency behavior; it is not structured in a way that specifically addresses the operational needs of personnel working in mass catering services (Kadioğlu 2008; Kadioğlu 2017; AFAD 2025). Similarly, there is no national-level regulation that mandates food service personnel's regular participation in disaster drills. This situation underscores the importance of evaluating the effectiveness of catering services during disasters, which often depends on individual experiences and institutional initiatives, underscoring the need to scientifically assess the disaster preparedness of food service personnel.

In the context of the current situation in Türkiye, the coordination of these services falls under the scope of the Turkish Disaster Response Plan (TAMP), where the 'Nutrition Services Group' is a critical component and is carried out in coordination with the main solution partner, the Turkish Red Crescent, and the Disaster and Emergency Management (AFAD 2025; Turkish Red Crescent, 2023). Although TAMP provides a national framework for response, uncertainties remain about the specific level of preparedness of private-sector catering personnel, who are frequently required to respond in emergencies. While state institutions and partner organizations regularly conduct emergency drills, the literature is generally unclear about whether subcontractor (catering) personnel are systematically included in these drills or receive field-specific disaster awareness training before starting their duties (Şahin 2019; Kadioğlu 2017). Since their ability to adapt to field conditions directly affects food safety and logistical efficiency, ensuring the participation of catering personnel in these drills is vital (Turkish Red Crescent, 2021).

Disasters, which pose a serious challenge to cope with and manage today, evoke concepts such as "risk," "uncertainty," "death," "denial," "optimism," and "illusion" from a social psychological perspective (Staupe and Bartoszewicz 2025). Various resources can increase perception and awareness of a concept or topic. Determining disaster awareness levels is crucial for addressing serious issues like disasters. Given the importance of nutrition services in disasters, investigating the

level of disaster awareness among food service staff is crucial for disaster management. Furthermore, in studies reported to date, the Disaster Awareness Perception Scale has been administered to various groups, including prospective teachers, teachers, university students, health sciences faculty students, and Syrian immigrants (Ayvazoğlu et al. 2020; Ertuğrul and Ünal 2020; Tekin 2020; Tekin and Dikmenli 2021; Doğru and Coşkun 2023; Ataç 2024; Eti 2024), but not to food service staff. The Disaster Awareness Perception Scale (DAPS) was developed by Dikmenli et al. (2018), and has proven validity and reliability.

The effects of disasters vary according to the historical, geographical and socio-economic conditions of societies. It has been reported that the levels of disaster awareness of individuals from different occupational groups (Tekin 2020; Tekin and Dikmenli 2021; Bulu and Avcı 2023; Eti 2024) may vary according to the age (Ayvazoğlu et al. 2020), gender (Ayvazoğlu et al. 2020; Aras et al. 2021; Güldü 2023; Tercan 2023) and marital status (Ay et al. 2023; Işık and Özcan 2023; Tercan 2023). Therefore, in the present study, age, gender, marital status, education level, duration of professional experience, and past disaster experience were included as socio-demographic factors.

This research aims to evaluate the disaster awareness levels of public food service staff, an occupational group that plays a critical role in ensuring public nutrition in disasters, such as catering staff, using the Disaster Awareness Scale (DAPS). The data obtained from DAPS were evaluated with the relationship to their socio-demographic factors. Thus, it will provide a better understanding of the role and importance of public food service staff in disaster situations, as well as guidance for other professionals seeking to work in this field. The research may also provide a scientific basis for increasing disaster preparedness and raising awareness among staff.

2 | Methods

2.1 | Research Population

The research population consisted of 867 workers at Bekard Catering Company (Türkiye). Bekard Catering is a large-scale company in Turkey that provides mass catering services to a wide range of settings, including hospitals, schools, and military units. The company's workforce and diverse service areas provide sufficient diversity and representation to examine the disaster awareness of its mass catering personnel. Furthermore, the company's personnel training and food safety practices offer a suitable environment for observing the employees' disaster preparedness levels. These characteristics make Bekard Catering a realistic and appropriate sample source for conducting this study.

Based on studies (Tekin and Dikmenli 2021; Bulu and Avcı 2023), the sample size was determined. Using a 95% confidence level, 80% power, and a significance level of 0.05, and considering standard deviations of 9.63 with a mean difference of 1.21 units, the minimum required sample size was calculated as 190 participants. Participants were selected using a simple random sampling method. A total of 223 workers from the public food service participated in the study.

The present study was conducted in accordance with the principles outlined in the Declaration of Helsinki, and all

procedures, including the research steps, were approved by the Bezmialem Vakıf University Non-Interventional Research Ethics Committee (Number: 54022451-050.04 -149071-2024/150). General informed consent was obtained from individuals to use medical data for research purposes.

Healthy individuals aged 18 and over were included in this study. Before registration, the study's purpose and necessary information were provided to participants, and written consent was obtained from each participant. The exclusion criteria for this study were individuals under the age of 18, pregnant and breastfeeding women, those having communication difficulties, disabled people, individuals with urgent cases, and students/interns. The study included healthy individuals aged 18 and over. Prior to enrollment, the purpose and scope of the study were explained in detail to the participants, and written informed consent was obtained from each participant. Groups excluded from the study included individuals under 18, pregnant and breastfeeding women, individuals with communication difficulties or disabilities, individuals with medical emergencies, students, and interns. These groups were excluded due to both ethical responsibilities and methodological requirements; minimizing health risks for participants, ensuring their ability to answer the questionnaire accurately and reliably, and maintaining the representativeness of the sample for general catering personnel were the primary reasons for this decision.

2.2 | Data Collection

In the present study, data were collected using a socio-demographic data form and the Disaster Awareness Perception Scale (DAPS). Collection of data performed by written form through face-to-face interviews with the study participants. It was self-administered, but help from the attending experts was available if requested. The same expert also supported the understanding of the questionnaire and survey.

The socio-demographic data form (Supporting Material 1) used in this study was prepared based on the studies of Gunes-Bayir et al. (2023) and Güldü (2023), with some modifications. The questionnaire used includes both open-ended and closed-ended questions to examine the demographic characteristics of the staff, including age, gender, marital status, educational status, professional seniority, length of time working in the same workplace, disaster experience, presence in the disaster area, and the number of relatives in the disaster area.

DAPS was presented in the supplementary material section (Supporting Material 2), developed by Dikmenli et al. (2018), and consists of four sub-dimensions with 36 items. It includes disaster education awareness, pre-disaster awareness, false disaster awareness, and post-disaster awareness sub-dimensions. The assessment of this five-point Likert-type scale ranged from 1 to 5, with options: 1 point for 'strongly disagree', 2 points for 'disagree', 3 points for 'undecided', 4 points for 'agree', and 5 points for 'strongly agree'. The Cronbach's Alpha coefficient for the entire disaster awareness scale is 0.671, which is reported as acceptable but moderate (Dikmenli et al. 2018). Cronbach's alpha values for the entire scale and its 4 sub-dimensions were calculated in this study.

2.3 | Assessment of the DAPS

The scale contains 36 items, 27 of which are positive and nine are negative. Items 12, 22, 23, 24, 25, 26, 27, 28, and 29 are negatively structured and were reverse coded before data analysis. Detailed information about the sub-dimensions of the scale is presented in Table 1. The lowest score that can be obtained from the 13 items in the “Disaster Education Awareness” sub-dimension of the scale is 13, and the highest is 65. A high score on this dimension indicates a high level of perception regarding disaster education among the participants. The Pre-Disaster Awareness sub-dimension contains eight items; the lowest possible score is 8, and the highest is 40. High scores from this dimension indicate a high perception level of pre-disaster awareness among the participants. The False Disaster Awareness sub-dimension of the scale consists of 8 items. The lowest possible score from this dimension is 8, and the highest is 40. High scores on this subscale indicate that participants have a low level of misperception of disaster awareness, the fourth dimension on the scale’s Post-Disaster Awareness, consisting of seven items. The lowest possible score for this dimension is 7, and the highest is 35. High scores on this dimension indicate that participants have a high level of awareness of post-disaster perceptions. The lowest possible score on the entire scale is 36, and the highest is 180. Points received from the DAPS were assessed in categorizing insufficient, middle, and high (Tekin and Dikmenli 2021).

2.4 | Statistical Analysis

This research was designed as a descriptive, cross-sectional study. Statistical analyses of the data obtained from the study were performed using the SPSS 28.0 package program. Descriptive statistics for categorical variables in the study are presented as numbers (*n*) and percentages (%), while descriptive statistics for quantitative variables are presented as means, standard deviations, the median value, minimum, and maximum values. Pearson’s Chi-square and Fisher’s Freeman-Halton tests were used to evaluate the relationships between categorical variables. The Kolmogorov-Smirnov test was used to assess the conformity of quantitative variables to a normal distribution. One-way ANOVA was used for normally distributed data, and non-parametric tests were used for non-normally distributed data. The Mann-Whitney *U* test was used to compare the means of two independent groups. The Kruskal-Wallis test was used to compare the means of more than two independent groups, and the Dunn test was used for pairwise comparisons of variables with significant differences. The level of statistical significance was considered significant at $p < 0.05$.

TABLE 1 | Minimum and maximum scores determine four sub-dimensions of disaster awareness perception levels (Tekin and Dikmenli 2021) of staff in public food service.

Disaster Consciousness Sub-Dimensions	Number of Items	Minimum Score	Maximum Score
Disaster Education Awareness	13	13	65
Pre-Disaster Awareness	8	8	40
False Disaster Awareness	8	8	40
Post-Disaster Consciousness	7	7	35
Total	36	36	180

3 | Results

3.1 | Socio-Demographic Characteristics

The socio-demographic characteristics of the study participants are presented in Table 2. A total of 223 workers participated in the study, comprising 48% female ($n = 107$) and 52% male ($n = 116$). Regarding age distribution, 12.6% ($n = 28$) were 18–24 years old, 26.0% ($n = 58$) were 25–34 years old, 21.1% ($n = 47$) were 35–44 years old, 27.3% ($n = 61$) were 45–54 years old, and 13.0% ($n = 29$) were 55 years and older. In terms of marital status, 36.3% ($n = 81$) were single, 57.9% ($n = 129$) were married, and 5.8% ($n = 13$) reported other marital statuses. Regarding educational background, 51.1% ($n = 114$) were primary school graduates, 27.8% ($n = 62$) were high school graduates, and 21.1% ($n = 47$) had a university degree.

The most represented groups in terms of participants’ work experience in the catering industry are those with 26.5% ($n = 59$) having 1–5 years and 26.5% ($n = 59$) having 5–10 years of experience. At the same time, the lowest rate was observed among those with more than 10 years of experience, 23.2% ($n = 52$). Regarding tenure at the current workplace, 39.5% ($n = 88$) of participants have been working for less than 1 year, with the lowest rate observed among those working for more than 10 years at 12.5% ($n = 28$). Regarding disaster experience, 70.0% ($n = 156$) of participants reported never having experienced a disaster, whereas 30.0% ($n = 67$) had experienced at least one disaster. It was determined that 96.9% of the participants ($n = 216$) had never been assigned to disaster areas, while only 3.1% ($n = 7$) had been assigned at least once. Furthermore, 11.2% ($n = 25$) had at least one relative in the disaster area, and 88.8% ($n = 198$) had no relatives at all.

3.2 | DAPS Average Scores

The Cronbach’s alpha values for the disaster education awareness subscale are 0.878, for the pre-disaster awareness subscale 0.917, for the misconceptions about disaster awareness subscale 0.953, and for the post-disaster awareness subscale 0.899. Although the study reporting the development of DAPS reported a moderate reliability coefficient (Dikmenli et al. 2018), the Disaster Awareness Perception Scale showed high internal consistency in the present study (Cronbach’s alpha value = 0.906).

Scores obtained from the DAPS assessment are categorized as inadequate, moderate, or high (Tekin and Dikmenli 2021). Accordingly, participants received the highest score of 65 and the lowest score of 13 in the disaster education dimension (Table 3). In the disaster education dimension, 4.5% ($n = 10$) of

TABLE 2 | Socio-demographic information of the public food service staff in the present study.

Variable	Categories	n	%
Age	18–24	28	12.6
	25–34	58	26.0
	35–44	47	21.1
	45–54	61	27.3
	> 55	29	13.0
Gender	Women	107	48
	Male	116	52
Marital Status	Single	81	36.3
	Married	129	57.9
	Other	13	5.8
Education Status	Primary school	114	51.1
	Secondary school	62	27.8
	High school	47	21.1
Working Seniority in the Catering Industry	< 1 year	53	23.8
	1–5 years	59	26.5
	5–10 years	59	26.5
	> 10 years	52	23.2
Seniority in the Same Workplace	< 1 year	88	39.5
	1–5 years	62	27.8
	5–10 years	45	20.2
	> 10 years	28	12.5
Experiencing a Disaster	Yes	67	30.0
	No	156	70.0
Being in a Disaster Area	Yes	7	3.1
	No	216	96.9
Presence of Relatives in the Disaster Area	Yes	25	11.2
	No	198	88.8

the participants had an inadequate level, 12.5% ($n = 26$) had a moderate level, and 83% ($n = 187$) had a reasonable level. The overall average score on the disaster education dimension for the public food service staff who participated in the study was calculated as $\bar{X} = 54.44$, indicating a very good level. In the pre-disaster sub-dimension, 3.6% ($n = 8$) of the public food service staff had an inadequate score, 9.9% ($n = 22$) had a moderate score, and 86.5% ($n = 193$) had a good score. The general average of the scores of the individuals participating in the study from the pre-disaster sub-dimension was found to be $\bar{X} = 34.45$, indicating that they were in a relatively good situation.

In the false disaster awareness sub-dimension, 19.3% ($n = 43$) of the public food service staff received insufficient scores, 13.0% ($n = 29$) received medium scores, and 67.7% ($n = 151$) received satisfactory scores, indicating a reasonable level. In the lower dimension, after the disaster, 4.93% ($n = 11$) of the public food service staff received insufficient scores, 28.70% ($n = 64$) received medium scores, and 66.37% ($n = 148$) received good scores. The average score of the individuals participating in the

study, from the post-disaster dimension, was $\bar{X} = 27.92$, which was at a reasonable level.

Accordingly, the rate of public food service staff who fell within the 36–84 points range in the DAPS was 8.18%. The rate of public food service staff who fell within the 85–132 points range was 15.81%, and the rate of public food service staff who fell within the 133–180 points range was 76.12%. The mean total score obtained by public food service staff from the DAPS was determined ($\bar{X} = 147.42$). Considering this value, it seems that the high level of disaster awareness among public food service staff is notable.

3.3 | Assessment of the Relationship Between DAPS Scores and Socio-Demographic Characteristics

Disaster awareness perception scale sub-dimension and total score averages based on socio-demographic characteristics of the study participants are given in Table 4. A statistically significant difference was observed between the age groups (18–24, 25–34, 35–44, 45–54, and > 55 years) in terms of the disaster education awareness subscale ($p = 0.035$). A detailed examination of the differences revealed that the means of the disaster education awareness subscale in the over-55 age group were significantly lower than those in the 25–34 and 45–54 age groups ($p = 0.022$ and $p = 0.003$). No statistically significant difference was found between the age groups in terms of the means of the pre-disaster awareness subscale ($p = 0.065$). No statistically significant difference was observed in the means of the four subscales between both genders and marital status groups (single, married, and other) ($p > 0.05$).

A statistically significant difference was observed between the educational status groups (primary school, secondary school, and high school) in terms of the disaster education awareness sub-dimension mean ($p = 0.009$). When the differences were examined in detail, the disaster education awareness sub-dimensional mean of the primary school group was statistically significantly lower than that of the secondary school and college groups ($p = 0.050$ and $p = 0.004$). However, no statistically significant difference was observed in the pre-disaster, false disaster awareness, and post-disaster awareness sub-dimensional means between the educational status groups ($p = 0.480$, $p = 0.167$, and $p = 0.667$, respectively).

Among the working seniority groups in the catering industry, no statistically significant difference was found regarding the means of the four sub-dimensions ($p = 0.233$, $p = 0.707$, $p = 0.345$, and $p = 0.483$, respectively). When the sub-dimensional averages related to disaster awareness were evaluated, a significant difference was found between different seniority intervals working in the same jobs. ($p = 0.042$). When the differences were examined in detail, the post-disaster awareness sub-dimensional mean score of the less than 1-year group was found to be significantly lower than the post-disaster awareness sub-dimensional mean scores of the 1 to 5 and 5 to 10 years groups ($p = 0.042$ and $p = 0.014$). There was no statistically significant difference between the working age groups in the same workplace regarding the means of disaster training, pre-disaster, and false disaster awareness sub-dimensions ($p = 0.178$, $p = 0.568$, and $p = 0.131$, respectively).

TABLE 3 | Findings regarding the disaster awareness perception level of staff from the public food service. Points received from sub-dimensions of DAPS were categorized as insufficient, middle, and high, according to Tekin and Dikmenli (2021).

Sub-dimensions		Insufficient	Middle	High	$\bar{X} \pm SD$	Median(min.-max.)
Points range		13–30	31–48	49–65		
Disaster Education Awareness	<i>f</i>	10	26	187	54.44 ± 9.12	56.00
	%	4.5	11.7	83.8		(17–65)
Points range		8–18	19–29	30–40		
Pre-disaster Awareness	<i>f</i>	8	22	193	34.45 ± 6.32	36.00
	%	3.6	9.9	86.5		(8–40)
Points range		8–18	19–29	30–40		
False Disaster Awareness	<i>f</i>	43	29	151	30.60 ± 10.37	34.00
	%	19.3	13.0	67.7		(8–40)
Points range		7–17	18–26	27–35		
Post-Disaster Awareness	<i>f</i>	11	64	148	27.92 ± 5.76	28.00
	%	4.9	28.7	66.4		(7–35)
Points range		36–84	85–132	133–180		
Whole of the Scale	<i>f</i>	73	141	679	147.42 ± 22.87	150.00
	%	8.2	15.8	76.0		(54–179)

Abbreviations: *f*, frequency; %, percentage; $\bar{X}$, mean; min., minimum; max., maximum; SD, standard deviation.

For items related to experiencing a disaster, being in a disaster zone, and having relatives in the disaster zone, no statistically significant difference was observed in terms of the four sub-dimensions of DAPS. On the other hand, the average total scores for the 4 sub-dimensions were examined between the groups; there was a statistically significant difference in the total score averages between the group with relatives in the disaster area and the total score averages of the other groups ($p = 0.023$).

4 | Discussion

Disaster preparedness and awareness are crucial for ensuring the sustainability of nutrition systems during and after disasters. The capacity of public food service personnel providing feeding to effectively respond to disasters directly impacts the continuity of food distribution and the effectiveness of nutritional support during disasters. Previous studies have shown that disaster awareness and response capacity play a critical role in ensuring food security and sustainable nutrition during natural disasters (Aldemir 2023; Kalyoncu Atasoy et al. 2024; Ransom 2025). Kalyoncu Atasoy et al. (2024) also emphasized the importance of a conscious and knowledgeable workforce for effectively managing nutritional challenges under disaster conditions. The findings of the present study similarly demonstrate the necessity of improving disaster awareness among the staff to ensure the sustainability of nutrition systems during disaster situations, thereby contributing to the relevant literature.

The study examined the disaster awareness perception levels of the public food service staff. Findings revealed that the levels of general disaster awareness, disaster education awareness, pre-disaster awareness, false disaster awareness, and post-disaster awareness among study participants were high. This suggests that individuals working in public food service possess a strong cognitive understanding of disaster preparedness and response,

likely due to institutional training, operational discipline, and access to information through formal or informal learning.

The current study revealed a significant difference in disaster education awareness sub-dimension between different age groups ($p = 0.035$), indicating that age influenced how individuals perceived and internalized disaster education. While no significant differences were found in other sub-dimensions, the effect of age on disaster awareness appears to be limited. Şahin et al. (2018) stated that while universities had statistical data indicating a high level of disaster awareness, there was no significant effect at that time. Similarly, Ayvazoğlu et al. (2020) found a positive relationship between successful developments at the university and disaster risk perception at regular intervals, but no factor was collected. Çelik and Gündoğdu (2022), Bulu and Avcı (2023), and Eti (2024) reported that their studies on performance did not reveal significant differences in disaster preparedness or temporary emotional states by age. Similarly, a study by Ay et al. (2023) with individuals aged 60 or older did not include age as a factor in perceptions of disaster awareness. None of the current events are consistent with these results; age, access to educational resources, and abundance of learning services generally stand out as factors in completing information. This suggests that disaster awareness is shaped by factors such as age, professional experience, education, and work environment.

No significant differences were found between gender groups, indicating that gender is not a determining factor in disaster awareness among the public food service staff. This result is consistent with studies showing that disaster awareness is shaped more by institutional learning and experience than by demographic characteristics (Çelik and Gündoğdu 2022; Bulu and Avcı 2023). However, Ayvazoğlu et al. (2020), Aras et al. (2021), Güldü (2023) and Tercan (2023) conducted studies on various subjects, including teachers, students, and individuals, and found that women had significantly higher disaster awareness levels than men.

TABLE 4 | Disaster awareness perception scale sub-dimension and total score averages based on socio-demographic characteristics of the study participants.

Sub-dimensions	Disaster Education Awareness			Pre-disaster Awareness			False Disaster Awareness			Post-Disaster Awareness		
	Categories	$\bar{X} \pm SD$	Median (min.-max.)	$\bar{X} \pm SD$	Median (min.-max.)		$\bar{X} \pm S$	D Median (min.-max.)		$\bar{X} \pm SD$	Median (min.-max.)	Total
Age	18–24	57.10 ± 7.88	59.50 (26–65)	35.28 ± 7.08	37.00 (8–40)		26.42 ± 13.63	33.50 (8–40)		29.96 ± 5.13	31.50 (17–35)	148.78 ± 24.32 (68–179)
	25–34	54.29 ± 9.95	57.00 (21–65)	34.56 ± 6.37	36.00 (10–40)		29.60 ± 11.21	34.00 (8–40)		28.43 ± 6.04	8.50 (7–35)	146.89 ± 24.38 (54–178)
	35–44	54.00 ± 11.83	58.00 (17–65)	34.27 ± 7.52	37.00 (9–40)		32.23 ± 9.14	35.00 (8–40)		26.29 ± 6.78	27.00 (7–35)	146.80 ± 26.13 (73–176)
	45–54	53.11 ± 7.69	54.00 (23–65)	33.40 ± 5.63	34.00 (12–40)		31.77 ± 9.04	34.00 (12–40)		27.29 ± 5.47	28.00 (7–35)	145.59 ± 21.63 (58–176)
	55+	55.65 ± 5.35	56.00 (42–65)	35.89 ± 4.47	37.00 (23–40)		31.51 ± 8.83	34.00 (12–40)		28.93 ± 3.55	28.00 (22–35)	152.03 ± 14.44 (123–178)
Gender		$p = 0.035$		$p = 0.065$			$p = 0.717$			$p = 0.091$		$p = 0.792$
	Female	54.21 ± 10.07	57.00 (17–65)	34.04 ± 6.91	36.00 (8–40)		30.89 ± 10.2	1		27.99 ± 5.95	28.00 (7–35)	147.14 ± 25.50 (58–179)
Marital Status	Male	54.65 ± 8.19	56.00 (22–65)	34.82 ± 5.73	36.00 (10–40)		30.32 ± 10.55	35.00 (8–40)		27.87 ± 5.60	28.00 (7–35)	147.68 ± 20.25 (54–178)
		$p = 0.803$		$p = 0.634$			$p = 0.683$			$p = 0.762$		$p = 0.581$
	Single	54.81 ± 10.31	57.00 (17–65)	34.58 ± 7.38	36.00 (8–40)		28.27 ± 11.69	33.00 (8–40)		28.16 ± 6.54	28.00 (7–35)	145.82 ± 26.04 (54–179)
Education Status	Married	54.33 ± 8.56	56.00 (21–65)	34.48 ± 5.52	36.00 (12–40)		32.00 ± 9.34	35.00 (8–40)		28.01 ± 5.04	28.00 (7–35)	148.83 ± 20.41 (58–178)
	Other	53.23 ± 6.79	55.00 (34–60)	33.38 ± 7.08	35.00 (12–40)		31.15 ± 9.47	34.00 (12–40)		25.61 ± 7.19	27.00 (7–33)	143.38 ± 25.53 (65–165)
		$p = 0.212$		$p = 0.324$			$p = 0.227$			$p = 0.346$		$p = 0.763$
Education Status	Primary school	52.97 ± 9.67	54.50 (17–65)	33.86 ± 6.87	35.00 (9–40)		29.96 ± 10.09	3.00 (8–40)		27.68 ± 5.98	28.00 (7–35)	144.49 ± 24.26 (54–178)
	Secondary school	55.40 ± 8.67	57.00 (21–65)	34.90 ± 5.78	37.00 (8–40)		29.85 ± 11.60	37.00 (8–40)		27.91 ± 5.01	28.00 (12–35)	148.08 ± 22.23 (68–176)
	College	56.74 ± 7.74	58.00 (22–65)	35.27 ± 5.57	36.00 (10–40)		33.12 ± 9.07	36.00 (8–40)		28.53 ± 6.20	29.00 (7–35)	153.68 ± 18.97 (79–179)
		$p = 0.009$		$p = 0.480$			$p = 0.167$			$p = 0.667$		$p = 0.063$

(Continues)

TABLE 4 | (Continued)

Sub-dimensions	Variables	Categories	Disaster Education Awareness		Pre-disaster Awareness		False Disaster Awareness		Post-Disaster Awareness	
			$\bar{X} \pm SD$	Median (min.-max.)	$\bar{X} \pm SD$	Median (min.-max.)	$\bar{X} \pm S$	D Median (min.-max.)	$\bar{X} \pm SD$	Median (min.-max.)
Working Seniority in the Catering Industry	1 year –		55.60 $\pm$ 8.00	57.00 (17–65)	35.30 $\pm$ 5.61	36.00 (9–40)	27.77 $\pm$ 12.34	33.00 (8–40)	28.79 $\pm$ 5.33	28.00 (7–35)
	1-5 year		54.50 $\pm$ 10.00	57.00 (21–65)	34.10 $\pm$ 6.84	36.00 (8–40)	29.83 $\pm$ 11.13	34.00 (8–40)	27.62 $\pm$ 5.91	27.00 (12–35)
	5-10 year		54.30 $\pm$ 9.55	57.00 (22–65)	33.69 $\pm$ 7.38	36.00 (10–40)	32.71 $\pm$ 9.09	36.00 (8–40)	26.91 $\pm$ 6.45	28.00 (7–35)
	10 year		53.34 $\pm$ 7.62	55.50 (22–64)	34.84 $\pm$ 5.02	35.50 (13–40)	31.96 $\pm$ 7.88	34.00 (8–40)	28.53 $\pm$ 5.09	28.50 (9–35)
Seniority in the Same Workplace			$p = 0.233$		$p = 0.707$		$p = 0.345$		$p = 0.483$	
	1 year –		55.38 $\pm$ 9.29	57.00 (17–65)	34.85 $\pm$ 6.48	36.00 (8–40)	28.12 $\pm$ 12.25	34.00 (8–40)	28.96 $\pm$ 5.43	29.00 (7–35)
	1-5 year		54.43 $\pm$ 9.54	57.00 (21–65)	34.69 $\pm$ 5.72	36.00 (16–40)	32.96 $\pm$ 8.85	36.50 (8–40)	27.30 $\pm$ 5.57	27.00 (12–35)
	5-10 year		52.48 $\pm$ 9.86	54.00 (22–65)	33.08 $\pm$ 7.77	35.00 (12–40)	31.95 $\pm$ 8.79	34.00 (8–40)	26.08 $\pm$ 6.84	27.00 (7–35)
	10 yea		54.64 $\pm$ 5.73	56.00 (40–63)	34.85 $\pm$ 4.20	35.00 (26–40)	30.96 $\pm$ 7.88	32.00 (8–40)	29.00 $\pm$ 4.49	29.00 (18–35)
Experiencing a Disaster			$p = 0.178$		$p = 0.568$		$p = 0.131$		$p = 0.042$	
	Yes		52.91 $\pm$ 9.72	56.00 (21–65)	34.55 $\pm$ 5.83	36.00 (12–40)	30.82 $\pm$ 9.84	34.00 (8–40)	28.19 $\pm$ 5.22	28.00 (7–35)
Being in a Disaster Area	No		55.10 $\pm$ 8.80	57.00 (17–65)	34.41 $\pm$ 6.54	36.00 (8–40)	30.50 $\pm$ 10.62	34.00 (8–40)	27.81 $\pm$ 5.99	28.00 (7–35)
			$p = 0.099$		$p = 0.805$		$p = 0.882$		$p = 0.815$	
Presence of Relatives in the Disaster Area	Yes		56.42 $\pm$ 4.85	57.00 (50–64)	36.71 $\pm$ 3.40	37.00 (32–40)	23.00 $\pm$ 15.24	16.00 (8–40)	32.28 $\pm$ 3.14	34.00 (28–35)
	No		54.37 $\pm$ 9.23	56.00 (17–65)	34.37 $\pm$ 6.39	36.00 (8–40)	30.84 $\pm$ 10.13	34.00 (8–40)	27.78 $\pm$ 5.77	28.00 (7–35)
			$p = 0.830$		$p = 0.344$		$p = 0.069$		$p = 0.014$	
	Yes		49.00 $\pm$ 12.71	54.00 (22–62)	31.40 $\pm$ 9.03	34.00 (10–40)	30.60 $\pm$ 10.18	35.00 (8–40)	23.92 $\pm$ 8.60	26.00 (7–35)
			$p = 0.830$		$p = 0.344$		$p = 0.069$		$p = 0.014$	
	Yes		49.00 $\pm$ 12.71	54.00 (22–62)	31.40 $\pm$ 9.03	34.00 (10–40)	30.60 $\pm$ 10.18	35.00 (8–40)	23.92 $\pm$ 8.60	26.00 (7–35)

(Continues)

TABLE 4 | (Continued)

Sub-dimensions		Disaster Education Awareness		Pre-disaster Awareness		False Disaster Awareness		Post-Disaster Awareness	
		Categories	$\bar{X} \pm SD$	Median (min.-max.)	$\bar{X} \pm SD$	Median (min.-max.)	$\bar{X} \pm S$	$\bar{X} \pm SD$	Median (min.-max.)
Variables	No		55.13 $\pm$ 8.36	57.00 (17–65)	34.83 $\pm$ 5.82	36.00 (8–40)	30.60 $\pm$ 10.42	28.43 $\pm$ 5.11	28.00 (7–35)
				$p = 0.015$		$p = 0.078$		$p = 0.019$	$p = 0.023$
									149.05 $\pm$ 21.39 (54–179)

Note: *p* value <0.05 was defined as statistically significant. Abbreviations: max., maximum; min., minimum.; SD, standard deviation; $\bar{X}$, mean.

There was no significant difference was found regarding marital status, which supports previous research suggesting that marital status is not a determining factor in disaster awareness (Tekeli Yeşil et al. 2021; Taş, 2022). In studies conducted by Işık and Özcan (2023) on healthcare workers and by Ay et al. (2023) on public employees and university students over 60, married participants were found to have higher pre-disaster awareness levels than single participants. However, in a study conducted by Tercan (2023) on individuals in Erzincan, single participants were found to have significantly higher disaster risk perceptions than married participants. The lack of a significant effect of marital status on disaster awareness perception in the current study may be since employees’ professional responsibilities are shaped independently of marital status. The fact that public food service personnel acted in accordance with their institutional roles rather than their individual characteristics during a disaster may have limited the impact of marital status differences. Furthermore, the institution's widespread provision of equitable and comprehensive disaster awareness training to all employees may have minimized perception differences arising from marital status.

A significant difference was found in the disaster education awareness sub-dimension according to educational level (*p* = 0.009). Disaster education awareness increased with higher levels of education. This result aligns with studies indicating that education has a positive influence on disaster awareness (Dökmeci and Meriç 2018; Buluş Kırıkkaya and Gerdan 2019). For example, studies by Tekin (2020), Tekin and Dikmenli (2021), Bulu and Avcı (2023), and Eti (2024) show that teachers’ perception of disaster awareness is high. The high level of awareness exhibited by the public food service staff in the present study, despite their limited experience in the disaster field, is a striking finding. This demonstrates that disaster awareness is not solely dependent on direct experience. It is also influenced by various factors, such as professional training processes, the crisis management nature of their duties, and indirect knowledge acquired through the media. It can be argued that disaster awareness is shaped not only by individual experience but also by environmental and educational factors specific to the occupational group. The findings reveal the need for specialized training programs for this occupational group and offer field-specific contributions to disaster awareness. However, the fact that this difference is observed only in the dimension of disaster education awareness and that a similar divergence is not found in other awareness areas indicates that age should be considered not as a determining variable in terms of general disaster awareness, but rather as a factor that affects the perception and internalization of training processes to a limited extent. In this context, the statistically significant relationship found between education level and disaster education awareness should not be considered as a determining effect that is equally reflected in all dimensions of disaster awareness; rather, it should be considered as a finding that contributes to understanding the training needs and institutional learning processes of public catering service employees.

In the current study, no significant difference in disaster awareness perception was found among public food service staff based on seniority in the food sector. When all dimensions of the scale were examined, no significant difference was found based on seniority in the food sector. Furthermore, a significant

difference was found in the post-disaster awareness sub-dimension according to working seniority in the same workplace ($p = 0.019$). This finding indicates that institutional experience and tenure enhance awareness of post-disaster processes. Workers with longer tenure are more likely to participate in institutional disaster planning, drills, and crisis management activities, which strengthens their post-disaster awareness. When all sub-dimensions were evaluated together, a significant difference was observed only among the participants who had relatives in the disaster area ($p = 0.023$). This result suggests that indirect disaster experiences can influence disaster awareness. Literature similarly notes that individuals indirectly exposed to disasters may exhibit varying levels of awareness sometimes increased due to heightened sensitivity or reduced due to trauma related avoidance behaviors (Oz and Cona 2024). The high levels of disaster awareness identified in this study are consistent with the high awareness levels reported in studies conducted among the teachers (Tekin and Dikmenli 2021; Bulu and Avcı 2023), while differing from research showing moderate or low levels of the university students (Dikmenli and Yakar 2019). These differences between studies may be attributed to variations in participants' professions, ages, education levels, and disaster experiences. Therefore, developing continuous and practice-based disaster education programs tailored to different occupational and demographic groups is essential for strengthening overall disaster awareness.

Overall, the research findings indicate that demographic factors such as age, gender, and marital status do not significantly affect disaster awareness, whereas education level, institutional experience, and direct or indirect exposure to disasters play a more substantial role. Ensuring the continuity of institutional training, organizing scenario-based exercises, and incorporating psychosocial support components into education programs are recommended to further improve disaster preparedness among public food service staff.

One of the limitations of this study is that it was conducted in only one public food establishment in Istanbul, which may limit the generalizability of the findings. Additionally, as the data are based on self-reported responses, there is a possibility of subjective bias. Future studies should include larger and more diverse samples from different regions and use qualitative methods to gain deeper insight into the development of disaster awareness for the food service professionals. Despite these limitations, this study makes a significant contribution to literature by revealing the disaster awareness levels of individuals working in a public food service. The findings clearly demonstrate that increasing disaster awareness of workers is essential for ensuring the sustainability of nutrition systems during emergencies.

Based on the findings of this study, the following recommendations have been developed to strengthen disaster preparedness and awareness among public food service staffs:

- Holistic and continuous disaster training programs: Disaster training specifically structured for public catering services should be supported by scenario-based drills, simulations, and hands-on learning methods, and should include capacity-building content such as first aid, crisis management, and basic life support.
- Strengthening institutional learning and experience sharing: The transformation of disaster experiences into

institutional learning should be supported through digital platforms and structured assessment mechanisms.

- Developing multi-stakeholder and inter-institutional collaboration: Collaboration networks should be strengthened among academic institutions, public organizations, and civil society organizations to create a common capacity for disaster preparedness.
- Training approaches that prioritize psychosocial resilience: Disaster training should go beyond information transfer and include components that support emotional resilience, motivation, and psychosocial well-being.
- Supporting institutional mentoring and leadership mechanisms: Experienced employees should be encouraged to take on mentoring roles to create a sustainable institutional disaster preparedness culture.
- Targeted support and inclusive approaches: Psychosocial and educational support mechanisms should be developed for employees with relatives affected by the disaster.
- Professional focus in research and strategy development: Future studies should focus on professional, institutional, and educational factors shaping disaster awareness to design more targeted interventions.

5 | Conclusion

This study aimed to assess the disaster awareness levels of staff in a public food service, a professional group that plays a critical role in maintaining community nutrition during emergencies. The findings revealed that participants exhibited high levels of disaster awareness across both the overall and sub-dimensions of the Disaster Awareness Scale (DAPS). When the DAPS scores were compared with sociodemographic variables, significant differences emerged regarding age, educational level, professional experience, and prior disaster exposure. Conversely, gender, marital status, and the presence of relatives in disaster areas did not show any statistically significant effect on awareness levels.

The literature review revealed that disaster awareness research has focused primarily on teachers, students, healthcare workers, and emergency response teams, while the public food sector has received little academic attention. In this context, this highlights the innovative contribution of the current study, which not only fills a gap in disaster and disaster management research but also highlights the strategic importance of enhancing disaster preparedness within institutional food systems. Public food service staff a critical position in disaster periods by ensuring the delivery of safe and sufficient nutrition to affected populations. However, this sector remains under-represented in disaster management literature. Strengthening both the scientific understanding and practical policies concerning this workforce will contribute significantly to community resilience and sustainable nutrition systems.

The disaster awareness of the public food service staff should be viewed not only as an institutional safety requirement but also as a public health priority that ensures the continuity and quality of food services under crisis conditions. Accordingly, these workers should take an active role in disaster training,

preparedness exercises, and institutional planning processes. Training content must be customized to reflect the specific risks, operational demands, and psychosocial realities of food service environments. Furthermore, disaster awareness programs that emphasize professional experience, ongoing education, and institutional learning—rather than fixed demographic traits—will yield more effective outcomes. Integrating supervision and structured post-disaster reflection will allow workers to transform their experiences into actionable knowledge, strengthening both individual competence and institutional resilience. Providing tailored psychosocial and educational support for workers with disaster-affected relatives will further enhance adaptive capacity and emotional stability.

In conclusion, enhancing disaster awareness of the public food service staff is essential for sustaining food systems and protecting community wellbeing during emergencies. Continuous education, scenario-based training, and inter-institutional cooperation should be prioritized to establish a resilient, well-prepared workforce capable of maintaining nutritional continuity in the face of disasters.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.
Supplementary Material 1. Supplementary Material 2.