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RISK COMMUNICATION AND EARTHQUAKE PSYCHOLOGY: A RESEARCH ON EARTHQUAKE NEWS

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ABSTRACT

Introduction: Risk communication is an inseparable part of any immediate reply. Earthquakes are complicated emergencies that exacerbate issues with risk communication and highlight these issues for scientists to communicate about. Turkey is vulnerable to various natural disasters, including earthquakes, floods, landslides, and thunderstorms, due to its geographic location and climate. In the process of dealing with natural disasters, risk awareness and risk communication have become crucial. **Methodology:** The goal of this study is to examine how the earthquake and risk communication affects society with the content analysis method in the context of the Kahramanmaraş earthquakes, which occurred on February 6. The news on four internet news websites was analyzed using the content analysis method in the context of the earthquakes centered on Kahramanmaraş on February 6. Frequency analyses were made in the context of the determined research questions and topics. **Results:** As a result of the study, it was found that the most frequently mentioned news items are earthquake news, news with a positive news tone, and agenda news. The informative category ranks first in the category of news publication aims. **Discussion:** When news is analyzed based on news tone, it is found that stories with a positive tone rank higher than those with a negative or neutral tone. **Conclusions:** This research contributes to furthering the fields of risk communication, disaster communication, risk awareness, and earthquake and disaster psychology.

Keywords: earthquake, risk communication, communication studies, earthquake psychology, disaster psychology

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1. INTRODUCTION

Earthquakes are natural disasters that cause physical, social, and psychological effects on the structure and future of societies. After the earthquake, it is seen that the communication styles, fear, anxiety, worry levels, and psychological and physiological health conditions of the individuals experiencing the earthquake show a serious change. For this reason, it is important to gain national and international awareness and consciousness of what kind of consequences the earthquake has on earthquake victims, relatives of earthquake victims, and society in general, and what kind of information exchange and communication style should be applied between individuals during an earthquake.

Digitalization and digital transformation are recognized as inseperable components of global changes in the digital world (Kavut, 2024). It is important to establish an effective communication network to minimize the risk dimensions before, during, and after the earthquake, to prevent crises, to minimize loss of life and property, to ensure communication between individuals, and to reduce stress and anxiety levels. Citizens can now connect and share information via a variety of channels thanks to the advancement of digital communication technologies. In the current digital era, where significant advancements have been made in digital communication technologies, these tools significantly alter and modify society (Kavut, 2022). In this process, individuals' preferences for communication tools have evolved from analog-traditional communication tools to digital communication tools. The use of digital identities has become widespread, and digital identities have started to be used in different ways. Digital identities, whose importance increased especially after the pandemic, include education, digital security, digital banking, e-commerce, online shopping, digital privacy, e-health, e-government, etc. It has become widespread as a technology-based form of identity used in many areas (Kavut, 2021). The social, psychological, and cognitive needs of people's digital identities are met by the internet's boundless coverage area, instantaneous real-time interaction capabilities, a platform for interactive content sharing side by side, one after the other, and capacity to transport users to virtual reality (Kavut, 2020). In this context, social media has also changed how the public will participate in disasters, how information will flow between citizens and from citizens to authorities, how to reduce uncertainties, and how to support resilience by enabling collaborative problem-solving and information gathering. Social media has enabled one-to-one communication during disasters and allowed for the legitimization of informal communication (Lambert, 2020). Thus, it is evident that in the event of natural disasters and catastrophes, such as earthquakes, efficient systems for communicating risks and ensuring one-to-one, active, and instantaneous communication between citizens and authorities in the disaster area are crucial. The communication channels can be formal, informal, analogue, traditional, or digital. They also ensure and maintain communication, facilitate the quick and efficient resolution of needs through teamwork, and reduce uncertainty and anxiety caused by disasters and earthquakes.

Earthquakes are among the most common natural disasters in society, causing damage injuries, and psychological trauma. Nothing can be done to prevent an earthquake, but there are many measures that people can take to minimize and reduce the harmful effects of an earthquake. Social mental perception, risk perception, self-efficacy, and outcome expectancy (the perception of whether preparation behaviors will be effective in reducing harmful effects) play an important role in the implementation of preparations and decisions to engage in active preventive behaviors (Sun & Xue, 2020). While accepting earthquakes as a reality of life, it is thought that it is important for individuals to shape their living conditions, shelter areas, and social and physical facilities in this direction to minimize the possible harmful and destructive effects of earthquakes and loss of life and property. Japan, where earthquakes are frequently experienced, can be shown as a model country in terms of earthquake preparedness, risk perception, and earthquake awareness. It is seen that it is of critical importance to develop similar practices in Turkey and to consider and implement earthquake preparations in a multidimensional way. Turkey is a country prone to many natural disasters and hazards, such as earthquakes, landslides, floods, and lightning, due to its geological location and climate. Among the natural disasters affecting Turkey since 1900, earthquakes have caused the greatest impact on population and infrastructure, with large-scale earthquakes occurring approximately every seven years. Earthquakes account for 55 % of all natural disaster-related lives and losses in Turkey. Landslides account for 30 % and floods for 8 % (Yildiz et al., 2020). As can be seen as a result of the research, earthquakes account for more than half of the natural disasters in Turkey and explain most of the loss of life and property. Therefore, the importance of an effective, strategic, long-term, and sustainable earthquake communication plan is seen. Earthquake awareness is essential in a nation like Turkey, which is situated on fault lines, where people should embrace earthquakes as a regular part of life and carry on with their lives accordingly, and where there is always a possibility of earthquakes. The purpose of this study is to use content analysis to examine how the earthquake and risk communication affect society in the context of news stories on the February 6 Kahramanmaraş earthquakes.

2. LITERATURE REVIEW

2.1. Earthquake and Risk Communication

Risk is the presence of uncertainty. Risk communication is defined as seeing the effects of behaviours and policies to prevent a crisis. Risk communication stems from interpreting and calculating the uncertain and ambiguous risk situation (Herovic et al., 2014). Risk communication is critical, as there is a need to understand how individuals behave when they are at risk and what appropriate steps they take to deal with negative events and situations. When people work together to reduce risks and find solutions, and when people's perceptions are learned, the information shared with the public opens the door for two-way communication about risk (Shah et al., 2023). Risk communication is an integral part of any emergency response. It describes the real-time exchange of information, opinions, and advice between experts, communication leaders, organizations, and people at risk. Throughout epidemics, pandemics, crises, and natural disasters, effective risk communication enables most people at risk to

understand and adopt protective behaviour. Risk communication enables authorities and experts to listen and address people's problems and needs to provide appropriate, safe, and acceptable advice (World Health Organization, 2017). As a result of the earthquake, risk communication can provide actionable information to prevent further damage and help vulnerable communities. Risk communication is most effective when scientists inform citizens about what to do about earthquakes and earthquake risks, rather than focusing on uncertainties (Jones, 2020).

Risk communication is an ongoing process between, within, or across organizations at all organizational levels. Risk communication requires active collaboration and communication among all stakeholders, including government, non-profit organizations, communities, and the media (Shah et al., 2023). In other words, risk communication describes the combination of two characteristics: internal communication and external communication. Internal communication describes the situation in which risk assessors and managers develop a common understanding of tasks and responsibilities. External communication promotes the initiation of different behaviours and definitions of roles in risk management and stakeholder awareness of the negative effects of risk (Zhang et al., 2020). It is crucial for stakeholders to actively cooperate during emergencies, like earthquakes, and to strive toward societal cohesion and solidarity. Furthermore, the need for maintaining two-way communication between stakeholders both internally and externally, as well as the efforts that may be made to raise awareness and consciousness, are discussed.

Risk communication is defined as the exchange of information about health or environmental risks between interested parties. More specifically, risk communication is the act of communicating or conveying information between interested parties about decisions, actions, policies, or levels of health or environmental risks targeted at controlling or managing health or environmental risks. Interested parties include the government, institutions, industry groups, the media, public interest groups, professional bodies and organizations, scientists, and individual citizens (Covello et al., 1986).

Risk communication is a participatory process in which information flows in all directions, from decision-makers to the public and from the public to decision-makers. This two-way approach is important for certain reasons. These reasons are listed as follows (Shah et al., 2023):

1) Risk communication helps to ensure that the most appropriate strategies for disaster risks are developed and that the perceptions of all stakeholders are taken into account.
2) It helps to build understanding and trust between different groups, which is important for effective disaster response and recovery efforts.
3) The two-way nature of risk communication helps ensure that the right information is communicated to the right people at the right time.

Earthquakes are communicatively complex crises that exacerbate and prominently present communication problems for scientists. Some of the problems stem from the

fact that earthquakes are unpredictable, in addition to being temporary and spatially valuable (Herovic et al., 2020). To manage the earthquake and preserve a sound communication system, one must be aware of the disaster management procedure. At this point, Koç-Akgül (2017) breaks down the disaster management system's operations into four primary categories.

1) predicting the impact levels and dimensions of the causes that could lead to unusual events and mitigating or eliminating them.
2) enhancing the efficacy of response strategies and plans during the acute (first) stage of emergencies.
3) outlining the strategies and taking all the safety precautions against the incident that could have caused an unusual circumstance.
4) the prompt and efficient replacement of both tangible and intangible resources that are harmed. This 3-step process is important to ensure that communities are better prepared, able to respond effectively, and able to reduce the impact of disasters. Natural risks, such as earthquakes, can cause great destruction and damage to human life and property, and potential hazards can increase with the rise of coastal and urban populations. While communication breakdowns worsen the consequences, effective risk communication before, during, and after major earthquakes can reduce the impacts (Lambert, 2020). This situation shows the need for an effective and efficient earthquake risk plan before major earthquakes. Considering that the Great Istanbul earthquake is expected in Turkey, it expresses the importance of making arrangements in coastal areas and areas where the urban population is especially dense and risky.

Fast and effective communication is extremely important during an earthquake. In recent years, it has been seen that social media is actively used in cases where communication operators are insufficient, especially in the event of natural disasters such as pandemics and earthquakes and plays an important role in the process of providing, maintaining, and managing information flow. In the last 10 years, social media has been of great importance during emergencies with its applications that enable official institutions and emergency responders to enrich situational awareness, provide awareness, show early warnings and preventive activities, disseminate information, and control public opinion (Lambert, 2020). Earthquakes are natural disasters that require urgent intervention and affect individuals physiologically and psychologically. Although the effects of this process differ directly and indirectly among the individuals who experience it, an effective and efficient communication network is critical for all community members.

2.2. Earthquake Psychology and Risk Perception

In addition to experiencing a natural disaster before, during, and after an earthquake, an important variable that is effective and affects the course of the earthquake can be the reactions, decisions, and actions of people to events and situations. Risk perception and earthquake psychology are considered among the important factors that improve the process in crisis moments, such as earthquakes that require emergency response, fast and healthy decision-making, and common sense.

Disaster psychology defines a field that covers many actions, such as examining the psychological and social effects of disasters, implementing, developing, and supporting various initiatives and interventions to support the post-disaster recovery processes of individuals and societies, and mobilizing individuals and societies to prepare for disasters (Karancı & İkizer, 2017). Psychological symptoms of the destructive effects of disasters begin to be seen in individuals who directly experience and participate in disasters during the disaster or a few days later. The crisis is defined as situations and conditions that require immediate intervention and psychological support (Özkan & Çetinkaya-Kutun, 2021). Concrete examples of the psychological effects of the destructive effects of the disaster on the individual and society —loss of life and property, injuries, and destruction— were seen in the 1999 Marmara Earthquake and the 6 February Kahramanmaraş-based earthquakes, which were defined as the Disaster of the Century. It is known that psychological effects and symptoms started to be observed in individuals who experienced the earthquake or visited the earthquake a few days after the earthquake and saw the destruction. This situation shows the importance of psychological support at all age levels. To understand disaster psychology and to evaluate the reactions of individuals correctly and meaningfully, post-disaster processes gain importance, as does the moment of disaster. Özkan and Çetinkaya-Kutun (2021) defined the physiological and psychological processes experienced by individuals after the disaster in four steps: the psychological shock process, reaction process, awareness process, and recovery process.

1) Psychological shock process: It is a process that can last 24 hours or longer, and individuals may experience reactions such as forgetfulness and hallucinations.
2) Reaction process: This is the process that varies between two and six days in which individuals show physiological symptoms such as fear, anxiety, nausea, and palpitations.
3) Awareness process: It is the process in which the mourning process starts in the individual, usually seen at the end of one week, and in which there is an intensity of emotion.
4) Recovery process: It is the process in which individuals start to adapt to their environment, calm reactions are given, and disasters are accepted as a part of life (Özkan & Çetinkaya-Kutun, 2021).

Resistance behaviors diminish at this time, also known as the readjustment phase, and adaptability to life behaviors becomes apparent. Individuals tend to feel better emotionally and make plans for the future (Köroğlu, 2018). It is thought to be an extremely important developmental step for the person to accept the healing process, not to create resistance, to accept the painful events experienced, and to take steps again with hope for the future to heal the physical, physiological, and especially psychological wounds caused by the earthquake.

Although there is a need for better earthquake management in Turkey to reduce the risks of earthquakes, without an understanding of how the general public understands the risks of earthquakes, even the best-designed policies and procedures may not yield

the desired results. Therefore, public risk perception is an important part of the disaster risk reduction process. Knowing how the public perceives risk is important to understand how and why they respond to hazards in the ways they do and their perspectives and insights (Yildiz et al., 2020). In this context, the fact that the public consists of individuals with a high level of risk perception and high-risk awareness is important in terms of ensuring the desired level of risk reduction process in society and minimizing the loss of life and property.

Risk awareness and risk perception are dependent on both personal risk experience and risk history. Another way to improve risk awareness and shape risk perception is to create and disseminate information and communication tools and to organize risk awareness campaigns. Risk perception is a fundamental issue for the identification and adoption of preventive measures and metrics. To develop an effective information and risk communication strategy, risk perception and the effects of factors need to be known (Vicente et al., 2014). It is an undeniable reality that risk perception and risk awareness are important in terms of preventing earthquakes, increasing measures, reducing losses, and healing the physical and psychological wounds caused by earthquakes and all-natural disasters. In this context, it is stated that establishing special communication channels such as earthquake communication lines and earthquake assistance lines during natural disasters, organizing social responsibility campaigns, announcing and sharing them with the public through channels such as social media, etc. will contribute to the development of risk awareness.

Risk perception refers to the public's judgments about the nature of disasters and the severity of their potential consequences. Personal earthquake risk perception is commonly based on previous experiences, memory, and awareness. Comprehensive studies on earthquake risk perception focus on three characteristics: perception of the probability of an earthquake, post-earthquake consequences, and earthquake susceptibility (Ao et al., 2021). In this context, it is understood that the primary factors affecting individual earthquake risk perception and earthquake psychology are the experiences of individuals, such as having experienced earthquakes in the past, having family members, or losing family or close relatives. It is seen that the earthquake risk perception, earthquake sensitivity, and earthquake awareness of individuals with earthquake-related experiences are higher than those who follow earthquake-related information from mass media, news, or social media.

Risk perception is a psychological process that describes a person's assessment of personal perceived vulnerability and coping resources, as well as their subjective (conscious or unconscious) evaluation of the effects of impending undesirable events in a specific situation. Risk perception is generally seen as an important marker of disaster assessment behaviour (Ao et al., 2020). The way individuals evaluate the events before, during, and after the earthquake, their reactions, behaviours, and decisions are considered to their risk perception. Risk perception has been explained in the literature through two different approaches: the psychometric approach, rooted in psychology, and the cultural theory approach developed by sociologists and anthropologists. The psychometric approach includes many studies on demographic

effects such as gender, race, origin, and risk communication. It is an approach that uses questionnaires, and factor analyses to explain the main and secondary parts of risk perception. The cultural theory approach includes studies in sociology and anthropology that show that risk acceptance and perception are based on social and cultural factors (Ainuddin et al., 2014). In this context, it is understood that risk perception has both psychological and sociological causes and consequences. In addition to demographic factors such as gender and age, socio-cultural variables such as living environment, culture, and education can also affect individuals' risk perceptions.

Interventions in pre-disaster, disaster, and post-disaster periods are important for individual physical, social, and psychological health. The intervention steps to be taken in the early or middle period after the disaster are explained under five sub-headings. Accordingly, the post-disaster intervention process starts with the step of instilling a sense of security in individuals. The second step is explained as calming the individuals. The third step is to reinforce individuals' sense of self-efficacy and social competence. The fourth step is to develop a sense of connectedness. The fifth and final step is to increase the hope of individuals (Karancı & İkizer, 2017). As a result, it is clear that people experience psychological harm, insecurity about their lives and themselves, fear, and worry as a result of natural disasters like earthquakes. Therefore, calming people down, encouraging them to take on tasks and activities that will boost their self-confidence, reassuring them that they are not alone in this process when their anxiety levels are high, showing empathy for them, and taking steps to make sure they never give up on their hopes and beliefs play a crucial role in the post-disaster process in terms of preparing people for life, hastening the normalization process, and minimizing the negative effects of disasters.

Another important issue related to disasters is the process of following up on the psychosocial problems of individuals after disasters and choosing the appropriate form of therapy for individuals in the acute, medium, and long term. Psychological first aid (PIY) in the acute period, psychosocial training and peer support groups in the medium term, and special psychotherapy approaches in the long term are applied (Karancı & İkizer, 2017). The importance of examining the consequences of disasters on individuals and their solutions in the short, medium, and long term and shaping support programs and individuals' communication skills and socialization processes accordingly is seen.

3. OBJECTIVE

The general objective of this study is to examine how the earthquake and risk communication affects society with the content analysis method in the context of the Kahramanmaraş earthquakes, which occurred on February 6. Within the scope of the aim of the research, the following subjective objectives were sought to be answered:

- Subjective objective 1: To ascertain the number of news regarding the earthquake accessed on the analyzed internet news websites (Hürriyet, Mynet, Sabah, and Milliyet).

- Subjective objective 2: To measure the distribution of earthquake news on internet news websites (Hürriyet, Mynet, Sabah, and Milliyet) according to risk perceptions.
- Subjective objective 3: To evaluate the distribution of earthquake news on internet news websites (Hürriyet, Mynet, Sabah, and Milliyet) according to their purposes.
- Subjective objective 4: To show which experts are consulted in earthquake news on internet news websites (Hürriyet, Mynet, Sabah, and Milliyet).
- Subjective objective 5: To classify the earthquake news in the analysed internet news sites (Hürriyet, Mynet, Sabah, and Milliyet) according to themes.
- Subjective objective 6: To analyse the distribution of earthquake news on internet news websites (Hürriyet, Mynet, Sabah, and Milliyet) according to news tones (positive, negative, neutral).

4. METHODOLOGY

A total of 698 news was analyzed in this study, including 106 from the Hurriyet website (https://www.hurriyet.com.tr), 313 from Mynet (https://www.mynet.com), 192 from Sabah (https://www.sabah.com.tr), and 87 from Milliyet (https://www.milliyet.com.tr). The analysis was limited to news about earthquakes that occurred in Kahramanmaraş on the websites that were chosen during the study period. The news on four internet news websites was analyzed using the content analysis method in the context of the earthquakes centered on Kahramanmaraş on February 6. Frequency, category, and evaluative analyses were made in the context of the determined research subjective objectives and topics.

The Turkish news websites make up the research's universe. Data from Similarweb (https://www.similarweb.com/top-websites/turkey) was used to rank the most popular websites according to preferred media channels. The research utilized the purposive selection method to choose the four most popular news websites, as shown by SimilarWeb statistics. The four most popular websites in Turkey's news and media publishers category— https://www.hurriyet.com.tr/, https://www.mynet.com/, https://www.milliyet.com.tr/, and https://www.sabah.com.tr/ —were examined as part of the sample concerning earthquake news. The purposeful sampling method, which is among the non-probability (random) sampling types, was used in the study. The criterion sampling sub-dimension of purposive sampling was utilized. News items were evaluated in line with criteria such as news sites, news purposes, news tones, experts consulted, and risk perceptions. At this point, criterion sampling is defined as ensuring that the sample consists of people, objects, events, and situations that meet the criteria and qualifications determined concerning the subject (Kavut, 2023).

The first limitation of the study is the examination of the subjects of risk communication, risk awareness, disaster psychology, and earthquake psychology through literature reviews. The other limitation of the study is that the first four most visited internet news sites, according to SimilarWeb analysis, were preferred and examined by the content analysis method within the framework of certain criteria.

Another limitation of the research is the time interval in which the news sites were analyzed. The research was limited to the examination of the news on the February 6 Kahramanmaraş-based earthquakes published between February 6, and March 6, 2023, when the earthquake occurred.

Krippendorff (1980) employed internal and external validity in assessing the validity and dependability of the research. While internal validity is defined by reliability, external validity is expressed by validity. For reliability, categories were created in the content analysis and the determined categories were divided into sub-units and the websites selected by purposeful sampling were analysed. Ambiguous categories were excluded from the study. To ensure the study's validity, websites were analyzed over two distinct periods: first, from August to October 2023, and second, from February to May 2024, in relation to the February 6 Kahramanmaraş earthquakes, yielding similar results. The content analysis of the websites employed the analysis approaches outlined by Bilgin (2006), which are categorized into five headings: frequency, categorical, evaluative, contingency or relationship analysis, and further analyses. This study employed frequency analyses, categorical analyses, and evaluative analyses.

5. FINDINGS

In this part, the content analysis method was used to examine news reports on the earthquake that occurred on February 6 from online news sources. In the context of news websites, risk perceptions, news tones, expert names consulted, and the news's intended publication, earthquake news was examined both often and categorically.

Table 1

Distribution of Earthquake News According to Internet News Sites

News Website	**f**	%
hurriyet.com.tr	106	15%
mynet.com.tr	313	45%
milliyet.com.tr	87	12%
sabah.com.tr	192	28%
Total	698	100%

Source: Own processing (2024).

Table 1 shows frequency analysis as one of the content analysis techniques. The numerical and percentage frequencies of 6 February Kahramanmaraş-related earthquake news on four selected news websites were examined. When the distribution of earthquake news according to internet news sites was analyzed, it was concluded that the news site that published the most news was mynet.com, while the least news was on milliyet.com.tr.

Table 2

Distribution of earthquake news according to risk perceptions

Risk Perceptions	**F**	%
Perception of the probability of an earthquake	24	3%
Post-earthquake consequences	467	67%
Earthquake sensitization	207	30%
Total	698	100%

Source: Own processing (2024).

Table 2 included a frequency analysis. The determined risk perception units (perception of earthquake probability, post-earthquake repercussions, and earthquake sensitization) were examined numerically and in percentages. It was discovered that news about the aftermath of the earthquake is given more space on Turkish news websites.Upon analyzing the earthquake news based on risk perception criteria, it was found that the majority of the news covered the aftermath of the earthquake. Based on an analysis of the newspapers, it was determined that the Sabah website did not contain any news regarding the perception of an earthquake, Hürriyet was the news site that devoted the most space to earthquake sensitivity, and Milliyet was the website that published the greatest amount of news regarding the perception of an earthquake. It was noted that post-earthquake results were highlighted and that mynet.com was the news website with the largest overall quantity of news articles.

Table 3

Distribution of Earthquake News According to the Purposes of Publication

Purposes of Publication	**F**	%
Explanation	165	24%
Information	279	40%
Warning/Caution	36	5%
Fear/Anxiety	27	4%
Hope	66	9%
Arousing Curiosity	24	3%
Awareness Raising	62	9%
Reminder	19	3%
Dramatization	14	2%
Assertion/Assumption	6	1%
Total	698	100%

Source: Own processing.

Table 3 illustrates frequency and category analysis. First, classifications were constructed for the investigation of Kahramanmaraş-based earthquakes based on their publication purpose and separated into ten groups. The ten categories were then analyzed for frequency in both percentage and numerical terms. Upon analyzing the distribution of news based on its intended goals, it may be inferred that 40 % of the news is primarily written for informative purposes. The news items' primary goals were stated as follows: increasing awareness, educating, providing explanations, and inspiring hope. It was observed that the news items in the claim/assumption category,

which were shown as the least, included titles and expressions such as '*6 February is a milestone for Turkey*', '*It is similar to the earthquake that destroyed San Francisco*', and '*Kahramanmaraş earthquake is unique in the world*'. It was observed that the majority of the titles of the news items prepared in the category of arousing curiosity were composed of question sentences and the use of adjectives *(No more Antakya! What is the cause of unexpected earthquakes, record donations to aid campaigns, the Turkey earthquake being the headline in the world, etc.? It was observed that the* news items in the category of hope consisted of content such as hope, miracles, and successive miracles *(there is 'hope' in the writings on the walls in Hatay, miracles on the 5th day of the earthquake, and successive miracles on the 8th day of the earthquake)* with a positive news tone, aimed at healing the wounds of the earthquake to some extent and motivating and giving hope to the public.

Another significant issue with the news distribution according to the news's purposes is that stories about the earthquake of August 17 and other Turkish earthquakes (they got married on August 17, 1999, they broke up in this earthquake, etc.) or stories about the preservation or destruction of historical structures (the historically significant Arslantepe Mound has not been significantly damaged, the historic Kahramanmaraş Castle survived the earthquake, etc.) were included in the category of reminders. Another problem is the news articles that highlight social responsibility initiatives like the creation of a tiny education campus, the planning of a kindness walk, the creation of bus libraries, and the adoption of a foster family.

Table 4

Distribution of Earthquake News According to the Experts Consulted

Experts Consulted	**F**	**%**
Civil Engineer/Senior Civil Engineer	4	2%
Professor of Geology	36	16%
Geophysics Engineer	10	4%
Geology Engineer	5	2%
Earth Scientist	10	4%
Search and Rescue Teams	13	6%
Earthquake Expert	7	3%
Disaster and Emergency Management Presidency (AFAD)	74	32%
AFAD President	4	2%
AFAD Science Board Member	1	0%
Kandilli Observatory and Earthquake Research Institute	5	2%
Seismologist	6	3%
Türkiye Radio Amateurs Association	1	0%
Minister of National Education	10	4%
Minister of Environment, Urbanisation and Climate Change	11	5%
Minister of Health	3	1%
Health personnel, physicians	7	3%

Physiologists/Specialist in mental and nervous diseases	5	2%
General Manager of Earthquake and Risk Mitigation	3	1%
Other	15	7%
Total	230	100%

Source: Own processing.

Table 4 was analyzed using categorical methods. According to the specialists consulted on the subject of earthquake news, categories were established and grouped for study. When the specialists who were consulted were asked to assess the news of the earthquake, their findings revealed that remarks, data, and figures from AFAD came out on top. Second-place expert reviews included remarks from geology professors, information regarding aftershocks, warnings about other earthquakes, and extensive interviews with academics who are experts in the subject of geology. It was noted that the experts contacted included medical professionals, physicians, psychologists, psychiatrists, and experts in earthquakes, in addition to geological engineers and geology professors. The statements of political figures, including the president, vice president, ministers, and mukhtars, as well as the viewpoints, assertions, recommendations, and concepts of the heads of non-governmental organizations with ties to the earthquake, were included in the Other category.

Table 5

Distribution of Earthquake News According to News Themes

News Themes	**F**	**%**
Life	146	21%
Economy	27	4%
Magazine	9	1%
Education	5	1%
Politics	1	0%
Health	4	1%
Agenda	320	46%
Breaking news	32	5%
Television news	11	2%
Country news	115	16%
World	9	1%
Diğer	19	3%
Total	698	100%

Source: Own processing.

Table 5 was generated by category analysis. The news about the earthquake in Kahramanmaraş was initially sorted into thematic sections and then classified based on criteria such as life, economy, magazine, education, and agenda. The news in the agenda category was found to rank highest when earthquake news was examined based on news themes. Another noteworthy point about the news themes is that the majority of the news, except for a few news items such as "*15 thousand liras of relocation payment assistance starts today*", "*Free accommodation for earthquake victims in public institutions and organizations*", *and "Miracles one after another on the 10th day!"* in the breaking news category, were written with a negative news tone.

Table 6

Distribution of Earthquake News According to News Tones

News Tones	**F**	%
Positive	290	42%
Negative	237	34%
Neutral	174	25%
Total	698	100%

Source: Own processing.

Table 6 underwent evaluative analysis, a specific form of content analysis. According to Bilgin (2006), evaluative analysis is based on the concept of attitude and is used to measure positive and negative attitudes in a context. It was observed that 42 % of the news items were written with a positive (positive) news tone, when earthquake news items were analysed according to news tones (positive, negative, or neutral). In other words, approximately half of the news items (42 %) were positive news items, one-third (34 %) were negative news items, and one-fourth (25 %) were neutral news items. It was determined that although news items with the themes of dread, anxiety, warning, and dramatization were created with negative material, those with the themes of explanation, information, hope, and raising awareness were prepared with positive content, as shown in Table 3. News that aimed to pique interest and make assumptions was deemed neutral.

6. CONCLUSION

This study has revealed earthquake and risk communication, earthquake psychology, risk perception, the role and importance of earthquake awareness in society, the reflections and impacts of earthquake with news web sites analyses. The Kahramanmaraş earthquake and its repercussions have demonstrated that it must be a prioritized agenda item for nations such as Türkiye, which are consistently at high risk because of their location on fault lines. The earthquake resulted in significant loss of life and property in Türkiye. According to the press bulletin of the Government of Türkiye (2023a), 42,310 people have lost their lives in Kahramanmaraş, Gaziantep, Şanlıurfa, Diyarbakır, Adana, Adıyaman, Osmaniye, Hatay, Kilis, Malatya, and Elazığ. 448,010 people have been evacuated from the earthquake zone. Another press bulletin data of the Government of Türkiye (2023b), a total of 5,606 buildings have reportedly been destroyed. These results demonstrate the importance of earthquake psychology in high-risk scenarios, as well as the importance of good communication, risk perceptions, safety measures, and earthquake awareness across all age groups in Türkiye.

This study presents the critical role to improve the awareness of risk communication, disaster, and earthquake psychology, and risk awareness among earthquake victims, their families, and the whole society in general before, during, and after the earthquake. In this context, this study has synthesized the effects of the earthquake and risk communication on society through the content analysis method within the framework of news reports on the February 6 Kahramanmaraş earthquakes.

Depending on the ideological structures and subject priorities of internet news sites, different news sites stood out in the categories of perception of the possibility of an earthquake, post-earthquake consequences, and earthquake sensitivity. It was concluded that news about the post-earthquake consequences was given more space in the distribution of news according to risk perceptions. In other words, it has been observed that there are differences in the content, scope, and transmission of news in the context of the structure, position, and ideologies of internet news sites. It was observed that not every news item did not include expert opinion, and news items aimed at informing society were also included expert opinion. It was noted that different emotional components, such as hope, anxiety, worry, fear, panic, happiness, joy, and dramatization, were included in the news.

When the tones of the news were examined, it was found that there were three categories for earthquake news: positive, negative, and neutral. Positive earthquake news that expressed delight and hope was more frequently found on online news sources. It was observed that news with a positive tone was effective in overcoming the consequences of the earthquake in the society. News on the agenda was shown to rate first, although news themes varied from health to education and from life to the economy. The study's findings have led to the observation that news with an agenda-themed format, an optimistic news tone, and post-earthquake results are given greater space. It was determined that the news stories regularly cited the views of professors in the departments of geology and geophysics as well as remarks made by AFAD. Not only were civil engineers, geological engineers, professors of geology or geophysics, seismologists, and earthquake experts among the names consulted for their opinions during the earthquake, but news reports also mentioned psychologists, specialists in mental and nervous diseases, doctors, and other health personnel.

The research identified the experts consulted during the earthquake, the themes included in the earthquake news, the linguistic structure employed in the reporting, the intended societal messages, and the media's portrayal of risk perception before, during, and after the earthquake. In a society such as Türkiye, which is located in an earthquake zone, it has also been raised awareness regarding fast and active communication during disasters, how the language of communication should be, and psychological conditions during a catastrophe via earthquake based news. All things considered, this study highlights the scope and significance of earthquake psychology, effective and quick communication, trustworthy and accurate news sources, and the language used in news reports for risk communication throughout the entire earthquake process.

As a result of, it is found that Türkiye is one of the countries where earthquake consciousness, disaster psychology, risk communication, and risk awareness should be raised in society at all ages, levels of education, and income groups. The earthquake in Kahramanmaraş on February 6, 2023, has underscored the necessity to expedite this process through several initiatives, including news dissemination, sector-specific and academic research, and earthquake preparedness exercises. Thus, this research aims to shed light on new studies and research to be conducted on risk communication,

earthquake psychology, disaster psychology, risk awareness, interpersonal communication in earthquake processes, disaster communication, disaster management, communication skills of individuals in earthquake processes, and communication psychology.

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