

Original research paper

COMMUNICATION AS A TOOL FOR THE PUBLIC GOOD IN TIMES OF CRISES CAUSED BY THE EARTHQUAKES IN THE CITY OF ZAGREB

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Abstract: *The risk of earthquakes is continuously present in the Zagreb area, and the strongest one occurred on 9 November 1880. Its catastrophic effects on the city and its population are evident from the records and press publications at the time, the analysis of which reveals the prompt and concrete responses of the city authorities, as the crisis management team, to a major disaster. Communication is primarily one-way and serves the function of ensuring urban safety, and public space is largely regulated and subordinated to official sources. Despite the structured communication immediately after the outbreak of the crisis, over time, there has been an increase in disinformation in public discourse, which negatively affects crisis management and social movements, and even results in the introduction of repressive models for the purpose of controlling the distribution of information and creating a public narrative. The institutionalisation of the urban security concept in the public policies of the City of Zagreb identifies internal and external communication as the backbone of crisis management, defining protocols and assuming the integration of key stakeholders for acting in circumstances of threats of various types and intensities. In the crises caused by the COVID-19 pandemic and the earthquake, which intertwined in Zagreb in 2020, technical and organisational preparedness, with the use of modern technologies, are proved to be a prerequisite for an organised system to provide a successful response to crises through modern communication practices, and self-sustaining specialised platforms represent an imperative for security structures and a priority for a responsible society in establishing and maintaining official dialogue between public authorities and the public in all phases of the crisis. Along with the undeniable benefits of interactive internet services, which manifested their dominance in a crisis context in the rapid and multidirectional exchange of messages, the absence of structured mass communication in accordance with a previously clearly defined crisis plan is conducive to contradictions and the spread of unreliable information that is taken from numerous sources in the entire spectrum of (in)competence.*

Keywords: *Zagreb earthquakes, crisis communication, crisis management, urban safety*

1. INTRODUCTION

Urban environments are continuously exposed to a number of different types of threats and precisely as such have become the sites of the gravest accidents and natural disasters

throughout history (Bilandžić, 2019). In previous assessments of the risk of major accidents, which were performed for Zagreb in the form of a formal document even before such an obligation was imposed by the 2015 Act on the Civil Protection System, earthquakes have been identified as the greatest threat with possible catastrophic effects (Official Gazette of the City of Zagreb 5/2011). The earliest available records of natural disasters of this type date from the 16th century, and all those made during the city's past before the 19th century are considered by the experts in the field to be less reliable than those subsequently recorded by instruments. The first available record of an earthquake in Zagreb dates back to 1502, when the tower of St. Mark's Church collapsed due to a strong tremor. Initially there were no direct and precise evaluations of the seismic strengths, so the magnitude of the strongest earthquake recorded so far, which struck Zagreb on 9 November 1880 at 7:34 a.m., was also subsequently estimated at 6.3 on the Richter scale (Simović, 2000). Two people died, and major material damage is evident in extensive media and other documentary records. Despite the destruction, no media discontinuity was recorded, and newspapers were the primary source of information for citizens. On the same day the earthquake hit Zagreb, the Extraordinary Provisions of the City Government were published in the newspapers, and the available communication channels were also used to distribute proclamations prohibiting or limiting, for safety reasons, activities that pose a risk in that context. Telegrams were used as a means of communication to mobilise relevant experts, and there was intensive proactive communication among safety system stakeholders and the general public. Contrary to content created by non-experts, special newspaper articles informed citizens from a scientific perspective about the earthquake as a natural phenomenon (Šimetin Šegvić, 2020). Communication was continued in the post-crisis period, mainly on topics related to social and safety measures as well as detailed and precise information on restoration and reconstruction activities. The survey of citizens on their personal experience of the earthquake and its effects on individuals was conducted only eight days after the earthquake, and this procedure was considered the first macroseismic survey conducted in the Croatian language, which represented a strong contribution to science from a crisis point of view, with the application of communication techniques for scientific research purposes (Faculty of Science, 2025).

2. METHODS AND SUBJECT OF RESEARCH

This paper investigates whether, in comparison with 1880, communication and operational activities related to earthquakes evolved in the context of the crisis and post-crisis period, with a focus on the significance of crisis communication in the concept of urban safety and public good in the area of the City of Zagreb. Its objective is to identify the level of efficiency and coordination of the system by comparing situations with the same or similar characteristics and by analysing the fundamental actions of the competent authorities, to highlight examples of good and desirable practices in terms of the safety system, as well as to determine the type and scope of activities that had an adverse effect on the population in the crisis. In accordance with the above, the following hypotheses were set:

- H1: Zagreb applied high standards of crisis management and communication during the crisis caused by the 1880 earthquake
- H2: After the 1880 earthquake, public communication had the function of ensuring urban safety
- H3: Compared to 1880, a positive step forward was recorded in crisis communication and management
- H4: Zagreb has modern channels and techniques for communication in crisis situations

In order to achieve the set research objective, a number of qualitative methods were utilised, including the historical and research method, which reconstructs the chronological sequence of communication activities during crises. Relevant newspaper articles, official announcements, regulations and archival materials were investigated using the content analysis method. Communication approaches and activities from two different time contexts were compared using the comparative method – the 1880 earthquake and the 2020 earthquake. Conclusions were drawn using the inductive and deductive method about the effectiveness of the crisis communication system in the historical context, and its development and possible shortcomings in the contemporary context. The description method was utilised to present the key communication activities during both crises, highlighting the key stakeholders, message content, communication channels and tools used. Also, a case study was applied as a qualitative method for a detailed description of specific situations that illustrate successful and unsuccessful communication practices.

A comprehensive analysis of the quality and efficiency of crisis communication has been ensured by combining the above methods, with the aim of formulating conclusions that can be used to improve future communication strategies in crisis situations in the area of urban safety in the City of Zagreb.

3. CRISIS IN THE MEDIA AND THE MEDIA IN CRISIS IN 1880

Although the 1880 earthquake was devastating, it did not affect the dynamics of daily newspaper publication. The two main dailies of the time – Obzor and Narodne novine – included relevant content about the crisis event in their editions on the day of the earthquake, albeit in a limited format (see Figure 1). From the journalistic note on the cover of Obzor, which states, inter alia: “... while we are writing this, at a quarter past one...”, as well as based on numerous descriptive accounts from specific city locations, it can be concluded that the media content was topical to the greatest extent possible.

Figure 1

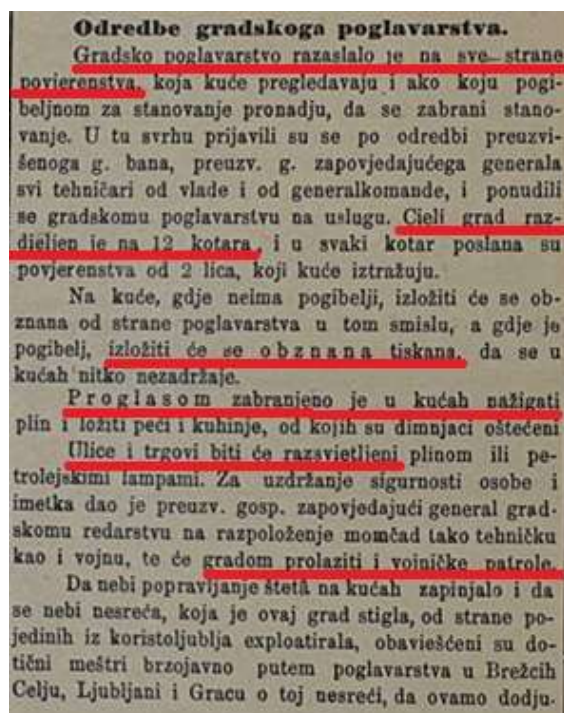


Newspaper editions on the day of the 1880 earthquake

Source: Obzor and Narodne novine, 9 November 1880

Analysis of the content published in the first newspaper editions after the earthquake indicates an immediate reaction by the city authorities, which, in response to the crisis, was inevitably preceded by internal management and operational coordination, intensive internal, but also external communication that included effective activities of relations with controlled media (Tomić, 2008: 261) as successfully implemented public relations functions. The City Government, through the publication of the regulations in the press, points out that they have “sent out committees everywhere” tasked with inspecting houses and prohibiting residence in those that are dangerous for habitation. It is also stated that the city is divided into 12 areas and that committees of two members have been sent to each. The same regulation explains how the buildings will be marked with a printed certificate (so-called notice) depending on the safety status of the building after the earthquake. Furthermore, the Government has “proclaimed” that it prohibits the use of gas and the firing of stoves in houses with damaged chimneys. In addition to measures regarding the safety of private buildings, the first communications also confirm the activities undertaken in the area of raising the level of urban safety through the provision of public spaces, which, as announced, will be lit by gas or kerosene lamps and will be under patrol supervision. In order to prevent further damage to citizens, potentially caused by unprofessional actions of individuals who could capitalise on the crisis for personal material gain, the City Government reports that it has sent a telegram inviting experts from other cities, whose arrival and subsequent assistance is expected (see Figure 2).

Figure 2



Regulations of the City Government on the day of the earthquake
 Source: Obzor, 9 November 1880

Based on the published material, it can be concluded that prompt and concrete measures were taken within the crisis management framework. The journalistic reports are comprehensive and contain specific data on damage, including information collected directly in the field about the effects of the earthquake, primarily on religious and social buildings, as well as other locations of public interest. They are based on direct journalistic observations, official and unofficial sources, statements by citizens, and interpretations transmitted through word of mouth. The transmission of information through the mass media is conducive to the development and distribution of disinformation, so newspapers warn about the presence of inaccurate news in public discourse, providing specific and appropriate explanations, arguments, and denials of allegations that do not reflect reality (see Figure 3). In addition to journalists distancing themselves from unconfirmed information, media practice in the early stages of the crisis indicates the application of high journalistic standards in reporting and organisation, as well as the application of professional principles in the processes of collecting, selecting, and publishing media content.

Figure 3

Upozorujemo občinstvo, da je po obćemu opažanju ljudi vještaka minula pogibelj, jer da je glavni udarac, koji je toliku nesreću prouzročio, bio vrhunac jakosti potresa, te popraćen s dva manja udarca. Isto tako i glede glasova lakoumno razprostiranih o nesrećah po drugih mjestih iz vana, za koje nepredleže dosada nikakove brzojavne obaviesti. — Glas, da je Karlovac sasvim razoren, po brzojavnoj obaviesti ovdješnje privatne osobe skroz je neistinit, a i potres bio je tamo mnogo slabiji, tako da su samo dimnjaci na nekojih kućah popadali. Na ovdješnji brzojavni ured stigle su naprotiv veoma tužne viesti, da je Sisak i Belovar ljuto nastradao. Nezajamčeni do ovog časa glasovi govore takodjer, da je postradao Trst, Beč i Rieka. Kažemo nezajamčeni, jer nam, dok ovo pišemo, četvrt na jedan sat, nisu stigle redovite dnevne brzojavke od bečkoga korespondenz - bureau-a, iz česa se može slutiti, da su poremećene brzojavne pruge.

Denial of inaccurate information
Source: Obzor, 9 November 1880

Despite mostly professional efforts, and with the intention of conveying the scale of the disaster to the greatest extent possible, additionally limited by journalistic deadlines and under pressure caused by public interest and the characteristics of the crisis situation, the media still occasionally publish insufficiently verified information with, in the absence of photographic images, exaggerated descriptions of certain situations (see Figure 4), but such situations in the first days after the earthquake are the exception.

Figure 4

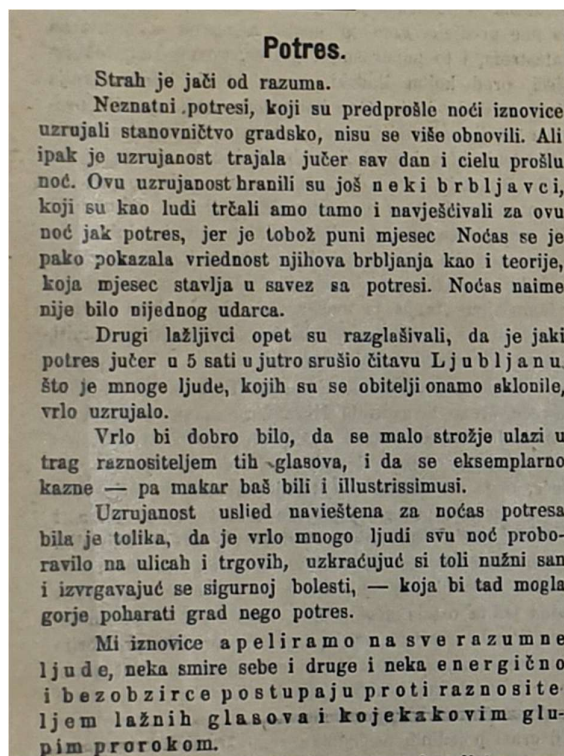
Koliko je ljudih životom nastradalo, do sada se pouzdano ne zna. Kamo sreće da se neobistini ni deseti dio glasovah. Dok ovo pišemo, izvjestno znamo samo za tri slućaja smrti. Na jednoj kući u Novoj ulici (prema ciglani) srušio se dimnjak i ubio podžupanijskoga litografa Stanića do mrtva; sa crkve sv. Marka pala su dva radnika, Vidoni i Amatoni te je jedan na mjestu ostao mrtav, a drugi je teško ranjen.

Ozledjeno je više ljudih. Vježbeniku komercijalne banke, Smetani, dječaku od kojih 15 godina, probio je jedan criep glavu do mozga. U našoj tiskari razbilo je criepovlje jednomo a u Albrechtovoj dvojici radnikah glavu. Naš mašinista g. L., u stisci prevaljen od bježećih radnikah, prelomio je desnu ruku. Spo-

Publication of inaccurate information with exaggerated descriptions
Source: Narodne novine, 9 November 1880

Further analysis of media content, especially the published announcements and reactions in the days after the outbreak of the crisis, shows the strengthening of sensationalism and inaccuracies that are transmitted in the local community. The serious and problematic scale of such phenomena is initially indicated by a public media appeal through which the public is called upon to be responsible and refrain from presenting and spreading untruths (see Figure 5).

Figure 5



Media appeal addressed to the public to refrain from spreading untruths about the events surrounding the earthquake

Source: Obzor, 17 November 1880

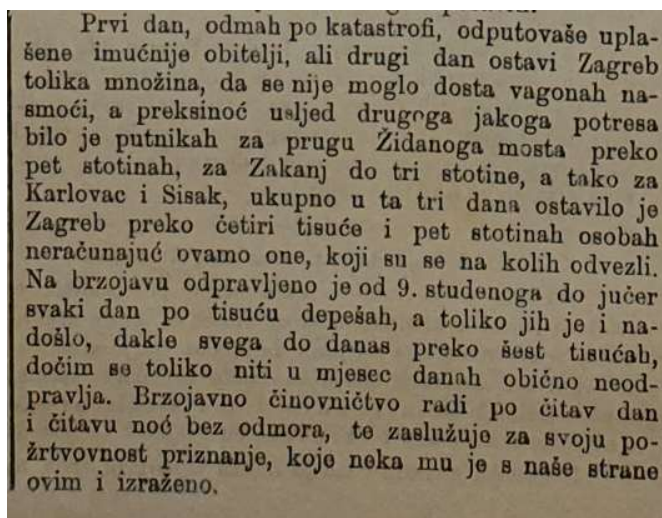
The prevalence and harmfulness of such a practice for the population at that time is evidenced by the drastic move of the city authorities, which in the proclamation dated 19 November 1880, informed the public about the start of the application of repressive measures and the criminalisation of “blasphemy” related to the earthquake, stipulating a prison sentence ranging from 6 hours to as much as 14 days for making unfounded claims and “curses” (Šimetin Šegović, 2020). August Šenoa¹ reflects on journalistic destruction and exaggeration in expressions, recording and publishing with professional disappointment and a degree of irony:

¹ Croatian writer, critic, translator and politician (Zagreb, 14 November 1838 – Zagreb, 13 December 1881), the creator of modern Croatian literature, dies at the age of 43 of pneumonia, which he contracted while caring for earthquake victims as a city senator. Sources: Hrvatska enciklopedija, Wikipedia

“The despair is followed by journalistic hunger. For a scribe, poignant scenes, romantically embellished, are his favourite food. I read all those news and articles. In the midst of my heavy sorrow, I laughed out loud at all this nonsense and lies. I thought I was reading myths. Zagreb was a ruin, five churches were to be demolished to the ground, 500 houses had collapsed, the poor were moved from the workhouse, volcanoes appeared near Resnik, boiling water was gushing 30 meters high. (That scribe probably did not know what a meter was, nor did he have a compendium of geology in his hands). And it was all a lie, a complete lie, I saw it with my own eyes. But the public read it all, devoured the newspapers, believed it and was horrified. Journalistic madness has done as much harm as the earthquake. The disaster is great, because the damage is enormous.” (Vienac, 1880).

The intensity of communication and migration after the crisis caused by the earthquake is summarised in a newspaper article with specific data on the realised railway passenger traffic and the realised telecommunication interactions and postal message transmission (see Figure 6).

Figure 6

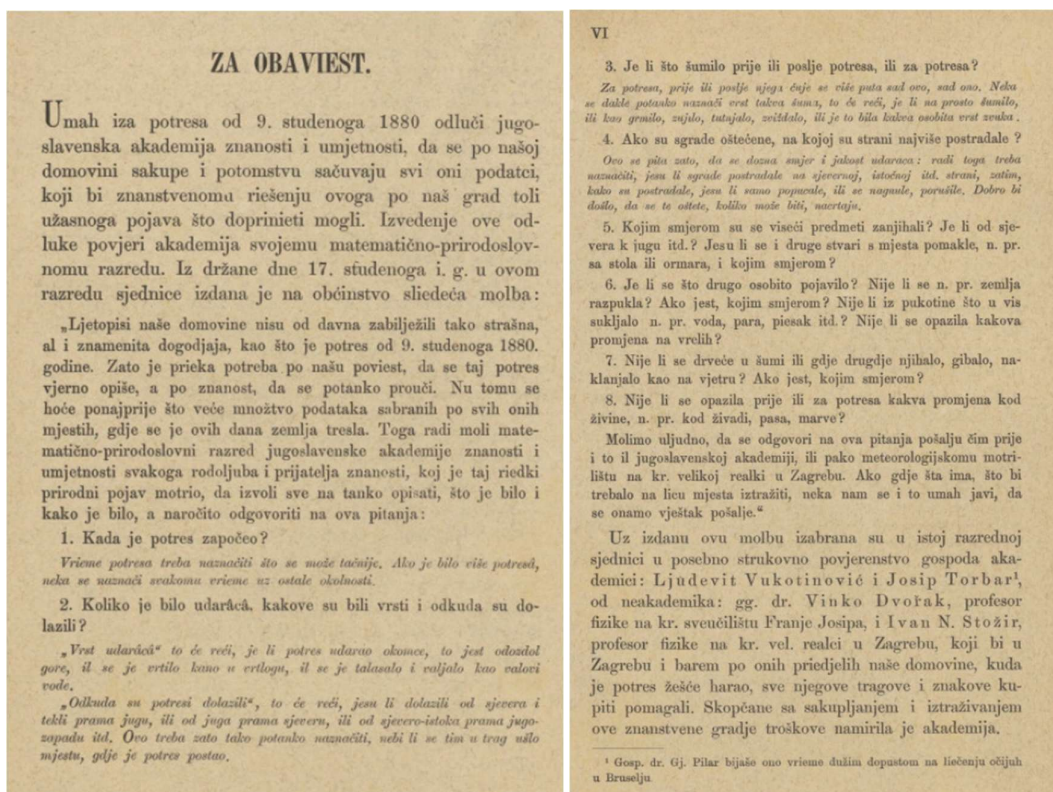


The intensity of passenger and telegraph traffic
Source: Narodne novine, 13 November 1880

Despite the preventive measures implemented and all the protective and developmental measures adopted, the collective insecurity phenomenon causes the population to migrate to other towns and cities. According to projections from archival records, in the first days after the earthquake, about a thousand families, or five thousand people, left the city. The trend of displacement continued in the following months, with around ten thousand more people leaving Zagreb. In addition to the original tremors, residents were encouraged to leave, according to Šimetin Šegović (2020), by newspapers, which frequently published disturbing content. The measures taken by the city authorities in the period immediately after the deepest crisis are aimed at strengthening the security system and are manifested through the rapid development of the city, and in addition to urban reconstruction, the crisis also contributes to the development of science and public relations practice. In order to collect data that are as objective as possible about the earthquake on a representative sample, just eight days after the

disaster, a structured survey was conducted among citizens on the perception and experience of the earthquake and its effects (see Figure 7), which, according to the Faculty of Science, represents the first macroseismic survey conducted in the Croatian language and a more concrete beginning of observational seismology in our region (Faculty of Science, 2025). Based on the collected data and subsequent analysis, the details of the earthquake were established by using scientific methods and its intensity was evaluated.

Figure 7



Earthquake Experience Questionnaire – the first macroseismic survey conducted in the Croatian language
Source: Torbar, J. (1882). Izvješće o zagrebačkom potresu (Report on the Zagreb earthquake). Zagreb: Yugoslav Academy of Sciences and Arts

4. ONE HUNDRED AND FORTY YEARS LATER

Since 1926, citizens of Zagreb have been informed about the crises of the 20th century via radio, and thirty years later, mass electronic communication was complemented by the arrival of television (HRT, 2025). At the end of the last century, the internet created the conditions for a global and unlimited exchange of messages, which, through real-time electronic publications and specialised platforms, ensures an unlimited flow of information, enabling interactions through modern digital communication systems. The development of communication tools has also been accompanied by crisis communication protocols, formally established by competent bodies, departmental organisations and specialised teams, including crisis communication

processes in the event of threats in the Zagreb area into the primary tasks of the Civil Protection Headquarters (Official Gazette of the City of Zagreb 16/2019). Also, in addition to the local and national Headquarters, in 2008 the City of Zagreb, as a unit of local, i.e. regional self-government, established the Office for Emergency Management (Official Gazette of the City of Zagreb 2/2008), the first of its kind in Croatia. One of the initial activities of the Office, tasked with strategic and operational action in all periods of crisis, was aimed at the general public and involved educating citizens about self-protective behaviour in the event of floods, fires, earthquakes or spills of hazardous substances (Official Gazette of the City of Zagreb, 2008). Two-way 24/7 communication, with operational and information assistance, was enabled for citizens in Zagreb in 2015 via the so-called Holding Centre, an organisational unit with a professional focus on proactive and real-time communication of the Zagreb Holding (Zagrebački holding), a company owned by the City, with target groups (Zagrebački holding, 2015). In 2018, the platform also integrated communications of the operational and technical, intervention, on-call and specialised teams, implementing adequate communication processes in cases of unwanted, unforeseen and other specific situations in the city area (Zagrebački holding, 2018).

Despite the most severe restrictions due to the COVID-19 pandemic, Zagreb faced the 5.5 earthquake on the Richter scale that occurred on 22 March 2020 at 6:24 a.m. with the aforementioned logistical resources and modern infrastructure.

The Holding Centre's platform for internal communication was activated immediately after the first impact and urgent communications and exchange of initial information were promptly established with key stakeholders. At the same time, communication with citizens continued via the usual call centre numbers and lines (Miljuš, 2020). At the initiative of the local authorities, special telephone lines were set up, initially for citizens directly affected by the earthquake who had to be provided with accommodation, after which they were also used for other types of assistance during the crisis period (City of Zagreb, 2020). Telephone numbers of firefighters, who had been on the ground since the first moments of the major accident, as well as lines of other emergency services, were blocked, telephone communications significantly limited, and parts of the city remained without electricity for hours (Jutarnji list, 2020). The Office for Emergency Management promptly mobilised operational forces after the earthquake by systematically distributing SMS messages with specific instructions to segmented teams for different purposes. Around 750 members of the General Purpose Civil Protection Unit and 550 members of the Specialist Search and Rescue Unit were deployed. Also, 200 new volunteers spontaneously joined the civil protection force. Members of technical professions required in crisis situations were also included in the actions carried out due to the crisis situation – 200 civil engineers organised into 50 teams, and their composition soon numbered more than 500 experts. In cooperation with the Croatian Centre for Earthquake Engineering, a protocol for rapid inspections of buildings and their safety categorization was established. According to priorities, immediately after the earthquake, structural engineers were sent to damaged public and private buildings, and damage to buildings could be reported the very next day via an online application created specifically for this purpose. At the national level, the Army was activated deploying 230 people, the Croatian Mountain Rescue Service

participated in operations with about 20 of their members per day, and the Zagreb City Red Cross Society made available an average of 1,000 volunteers and 60 employees who were also active in the days after the earthquake. The Office for Emergency Management, in addition to accommodating families who were left without adequate housing, also provided food to citizens affected by the earthquake, and construction machinery was also deployed to clear public areas, primarily the important traffic corridors, and remove parts of buildings that pose a further threat (City of Zagreb, 2020). In the first moments of the crisis caused by the earthquake, there was a noticeable lack of specifically designated official sources designated for crisis communication in the public space that would communicate to the public the entire range of relevant and useful information, previously collected in the competent organisations, in an acceptable and media-friendly format. The Office for Emergency Management addressed the public with initial information about the earthquake via radio, highlighting the mass mobilisation measures that had already been taken. The director of the Institute of Emergency Medicine and the director of Civil Protection appeared in the electronic media programmes, and in the continuation of the programme content, representatives of other emergency and operational services were also interviewed. During this time, simultaneously, the relevant institutions, although with a delay of more than an hour, began individual communication with short, mostly informative or advisory posts on social media accounts, from where the media, as well as transcripts of radio announcements, transmitted them to the general public. Among the first recorded posts were messages from the Ministry of the Interior calling for refraining from group gatherings and from the Geophysical Institute on the characteristics of the earthquake, and among the city services, the first one to react was the Gas Company with recommendations and safety instructions for dealing with gas outlets and possibly damaged installations. During the period of the greatest crisis, despite the intensive communication activities of a wide range of stakeholders and the available media space, no information authority emerged in the mass communication nor was there a demonstration of an established hierarchy of sources. The communication strategy of the Government of the Republic of Croatia, with the presence of ministers in the media space, included only two posts on the official website of the Government (see Figure 8), one of which was an acknowledgement thanking people for their efforts, and the other an announcement of damage repair and activation of assistance mechanisms (Government of the Republic of Croatia, 2025).

Figure 8

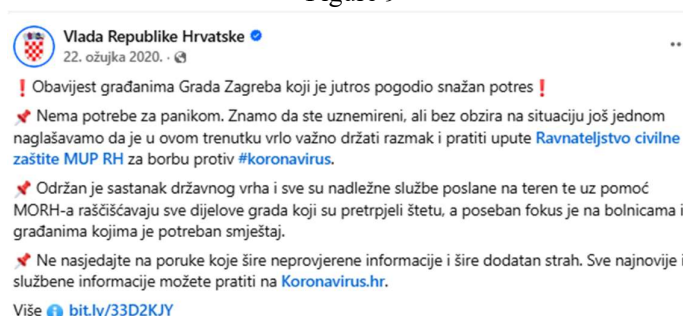


Public announcements of the Government of the Republic of Croatia on the day of the earthquake

Source: www.vlada.gov.hr

The Government published one post on the social network Facebook on the day of the earthquake (see Figure 9).

Figure 9



Facebook post of the Government of the Republic of Croatia about the earthquake in Zagreb


Source: Official Facebook page of the Government of the Republic of Croatia

The summary, which should present the most important parts of the entire post, already shows the information deficit in the concept of crisis communication, and this is confirmed by the “more extensive post” which is shown in full in Figure 10.

Figure 10

© Objavljeno: 22.03.2020.

POZIV GRAĐANIMA



GRAĐANKE I GRAĐANI!

znamo da se bojite, osjećate strah i nelagodu. Usprkos snažnim emocijama i strahu koji se pojavio, POZIVAMO VAS da u ovim izvanrednim uvjetima, držite potreban razmak

Poslije potresa često se javlja reakcija grupiranja ljudi radi međusobne podrške i tješenja, ali zbog koronavirusa bitno je spriječiti socijalnu blizinu. POZIVAMO vas da se držite svih dosad izdanih uputa. Bit će vam teško i trebat će vam utjeha, ali budite uz članove obitelji ili jednog prijatelja/susjeda, ne više!


Nadalje, puno je građana vani bez jakni, molimo da se toplo odjenete da se ne biste prehladili. U vrijeme zaraze koronavirusom, simptome prehlade možete zamijeniti simptomima koronavirusa i doći će do prevelikih zahtjeva prema zdravstvu. Molimo, uzmite jakne, deke i toplo se odjenite dok čekate vani ili u autima.

“More”

Source: Civil Protection Directorate

The Civil Protection Directorate of the Ministry of the Interior, in addition to announcing that the earthquakes occurred, also issued a “call to citizens not to be afraid” and posts at 10:00 a.m. and 8:30 p.m., which relate solely to the measures taken and decisions made with regard to the COVID-19 pandemic (see Figure 11), i.e. data on the number of newly infected people in the past period (Civil Protection Directorate, 2025).

Figure 11



REPUBLIKA HRVATSKA
Ministarstvo unutarnjih poslova
Ravnateljstvo civilne zaštite

[Vijesti](#)
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Vijesti

Filtrirajte vijesti:

Sve vrste

Od: 22.03.2020.

Do: 22.03.2020.

Pretražite

Traži

Pronađeno 6 vijesti.

Priopćenje za medije Stožera civilne zaštite Republike Hrvatske od 22. ožujka 2020. u 20:30 sati

Tijekom dana potvrđeno je još 19 oboljelih osoba novim koronavirusom. U Republici Hrvatskoj dosad je potvrđeno sveukupno 254 oboljelih osoba.

22.03.2020. | Stranica

Crveno upozorenje za Istru i Kvarner

Prognostičari Državnog hidrometeorološkog zavoda izdali su za danas (22. ožujka) u sklopu Meteoalarm crveno upozorenje za područje Istre i Kvarnera.

22.03.2020. | Stranica

Potresi na zagrebačkom području

Jutros u 6 sati i 24 minute seizmografi Seizmološke službe Republike Hrvatske zabilježili su vrlo jak potres s epicentrom kod Markuševca kod Zagreba.

22.03.2020. | Stranica

POZIV GRAĐANIMA

GRAĐANKE I GRAĐANI!

znamo da se bojite, osjećate strah i nelagodu. Usprkos snažnim emocijama i strahu koji se pojavio, POZIVAMO VAS da u ovim izvanrednim uvjetima, držite potreban razmak

22.03.2020. | Stranica

Priopćenje za medije Stožera civilne zaštite Republike Hrvatske od 22. ožujka 2020. u 10 sati

Danas je potvrđeno 29 novoboljelih osoba novim koronavirusom. U Republici Hrvatskoj do 22. ožujka potvrđeno je sveukupno 235 oboljelih osoba

22.03.2020. | Stranica

Dva snažna potresa u Zagrebu

Jak potres magnitude 5.5 prema Richteru pogodio je jutros šire područje Zagreba. Potres je zabilježen u 6:24 sati, a osjetio se i u Rijeci, Varaždinu i Slavonskom Brodu

Posts by the National Civil Protection Headquarters on the day of the earthquake

Source: <https://civilna-zastita.gov.hr/vijesti/>

Sources of different levels, competencies and jurisdictions were included in radio and later television programmes at random, after which other communicators, without any logical sequence or a specific schedule and depending solely on the success of journalistic efforts, and very often also on a combination of circumstances, were introduced into the media space. Communication was not structured, timely, simultaneous, uniform and comprehensive, and throughout the most critical period of the crisis, there had been a noticeable lack of coordination between competent institutions and relevant sources, especially at the national and city levels, to interpret issues of public interest. This is confirmed by disinformation, as well as completely opposite statements published in the media about the same matter. This is why the Minister of the Interior and President of the National Civil Protection Headquarters Davor Božinović stressed that:

“Those spreading fake news must be punished most severely. The police have already been conducting investigations. The fact is that as long as such news fails to reach the mainstream media, its impact cannot be what they would like it to be.”,

as reported by Index.hr, explaining how several fake news stories about the earthquake had spread in a short period of time (Index.hr, 2025). A similar, but more specific practice with repressive measures due to fake news was described at the beginning of this paper in case of the earthquake and related events in 1880. Analysis of the sequence and content of media releases identified isolated and contextually separate appearances of individual sources, unrelated as regards the subject matter to other related areas, activities and events. Table 1 provides a chronological overview of some of the media content and sources of published information, which was created in the communication activities of the aforementioned organisations and their representatives.

Overview of the subject matter and chronology of the representation of sources in the media

Time	Media outlet	Subject matter	Source	Note
7:20 a.m.	Index.hr	No reports of casualties, Civil Protection activated	P. Kalinić, Office for Emergency Management	Source: radio broadcast
7:36 a.m.	Jutarnji list	Citizens advised to stay away from buildings and poles	Croatian Ministry of the Interior	Source: Twitter
7:41 a.m.	Index.hr	Appeal to citizens to maintain social distance	D. Božinović, Ministry of the Interior/Civil Protection Headquarters	
7:50 a.m.	Večernji list	Call not to enter houses and apartments as an aftershock is expected	P. Kalinić, Office for Emergency Management	Source: radio broadcast
7:55 a.m.	Jutarnji list	Intensity of the earthquake	Seismological Service	Source: official website
8:06 a.m.	Večernji list	One child injured	Ž. Rašić, Emergency Services	Source: radio broadcast

8:07 a.m.	Jutarnji list	There are confirmed injuries, but minor	D. Trut, Civil Protection Directorate	Source: TV broadcast
8:07 a.m.	Jutarnji list	Warning to turn off the gas and call in case of a leak	Gas Company	Source: the City's social media accounts
8:10 a.m.	Večernji list	There are people trapped, no information on casualties	Public Fire Department	
8:28 a.m.	Jutarnji list	Citizens advised to stay outside and not to be afraid, and that hospitals are a priority	P. Kalinić, Office for Emergency Management	
8:46 a.m.	Večernji list	Building safety assessment will be done quickly	D. Božinović, Ministry of the Interior/Civil Protection Headquarters	Source: TV broadcast
8:52 a.m.	Jutarnji list	Maintain social distance	D. Božinović, Ministry of the Interior/Civil Protection Headquarters	Source: TV broadcast
8:56 a.m.	Jutarnji list	First earthquake victim – 15-year-old child, confirmed dead in Klaićeva	Ž. Rašić, Emergency Services	Source: HINA (Croatian News Agency)
9:02 a.m.	Index.hr	Appeal from firefighters to only call in case of life-threatening situation	Zagreb Public Fire Department	Source: social media platforms
9:12 a.m.	Večernji list	Maintain social distance, the worst earthquake is over	D. Božinović, Ministry of the Interior/Civil Protection Headquarters	Source: TV broadcast
9:26 a.m.	Jutarnji list	Gas network is stable	Gas Company	Source: social media platforms
9:28 a.m.	Index.hr	Do not spread panic and beware of disinformation (about a new earthquake)	K. Kuk, Seismological Institute	Source: HINA (Croatian News Agency)
9:36 a.m.	Jutarnji list	Children's hospital denies the statement issued by the Emergency Services – the girl is alive, but in critical condition	G. Roić, Hospital Director	Source: TV broadcast
9:43 a.m.	Večernji list	Aftershocks can be expected, probability of stronger ones is very low	Geophysics Department of the Faculty of Science	Source: social media platforms
9:50 a.m.	Večernji list	Army mobilised	D. Krstičević, Ministry of Defence	Source: TV broadcast
9:53 a.m.	Jutarnji list	Electricity supply system is stable	HEP (Croatian Electrical Power Company)	Press release
10:07 a.m.	Večernji list	The Government and the Headquarters are in command, listen to them, you can ignore the rest	Z. Milanović, President of the Republic of Croatia	Statement
10:10 a.m.	Index.hr	There is no need to panic, the situation in the health care system is satisfactory	V. Beroš, Minister of Health	Statement
10:15 a.m.	Večernji list	The strongest earthquake in the past 140 years, call for caution, stay out of buildings	A. Plenković, Prime Minister	Statement
10:26 a.m.	Jutarnji list	Clarification of previously published information about the earthquake victim	Ž. Rašić, Emergency Services	Source: HINA (Croatian News Agency)
10:58 a.m.	Index.hr	We met with seismologists, you will receive a press release twice a day	G. G. Radman, Minister	Statement
11:10 a.m.	Jutarnji list	Zagreb Airport was not damaged	MZLZ (Zagreb International Airport)	Press release
11:35 a.m.	Index.hr	A call to citizens living in reinforced concrete buildings to return to their apartments	M. Bandić, Mayor	Statement
11:40 a.m.	Jutarnji list	A call to citizens to remain outside their homes	A. Plenković, Prime Minister	Statement

11:50 a.m.	Index.hr	Placement of patients only when approved by the construction professionals	V. Beroš, Minister of Health	Statement
12:15 p.m.	Jutarnji list	A call to adhere to the recommendations pertaining to the COVID-19 pandemic	Zagreb Police Administration	Press release
12:20 p.m.	Večernji list	A wide range of damage to cultural and historical architectural heritage, the Ministry will coordinate a review of the situation	Ministry of Culture	Press release
12:28 p.m.	Jutarnji list	Appeal to citizens to adhere to the instructions of the Civil Protection Headquarters	P. Štromar, Minister of Construction	Source: social media platforms
12:36 p.m.	Jutarnji list	On the accommodation of citizens in the Cvjetno naselje student dormitory	D. Božinović, Ministry of the Interior/Civil Protection Headquarters	Source: TV broadcast
12:39 p.m.	Večernji list	Hot meals provided to citizens, construction experts assess the damage	Office for Emergency Management	Press release
12:50 p.m.	Index.hr	The Government will mobilise all resources to repair the damage	Z. Marić, Minister of Finance	Statement
1:07 p.m.	Jutarnji list	Data on the number of damaged buildings and cars	Zagreb Police Administration	
1:08 p.m.	Jutarnji list	Construction companies are at disposal to citizens and institutions	M. Čagalj, Vice President of the Croatian Chamber of Economy	Source: HINA (Croatian News Agency)
1:29 p.m.	Jutarnji list	The City of Zagreb has introduced a toll-free hotline for citizens directly affected by the earthquake	City of Zagreb	Press release, social media platforms
1:30 p.m.	Jutarnji list	Parts of the city without electricity, the western part without heating	HEP (Croatian Electrical Power Company)	
1:50 p.m.	Večernji list	Firefighters' lines are blocked	Public Fire Department	Source: social media platforms

Table 1, systematization by the author

During the emergence and development of the crisis, at no time was a special, official channel established and published that would represent a formal and relevant source with centralised and only verified and official information. Most of the announcements are taken from one media outlet or journalistic format to another. Despite the presence of representatives of national and local authorities in public places, there is also an apparent lack of a plan and division of crisis communication with clearly defined people in charge of specific activities and communication roles depending on the competencies or areas of direct responsibility. In such circumstances, the public cannot know when and where they will receive updated information, which deepens the feeling of anticipation and uncertainty. Although a joint extraordinary meeting of representatives of local and national executive authorities and the President of the Republic was announced to the public and recorded by the media, no specific conclusions or measures emerged from that meeting, and tours of city locations by political actors lacked a clear objective.

During the crisis, service announcements, posts and messages from citizens and other individuals, expressions of support, statements from the heads of individual operational teams, technical information and news about damage in various city and surrounding areas overlap in the public space and through various media outlets. Posts by official sources on the internet

and social media platforms on the first day of the crisis were neither regular nor up-to-date, did not contain a sufficient amount of useful information for the extraordinary situation, and were characterised by a large gap in the dynamics of publication, and it can be concluded that they were insufficient as regards both their quality and quantity (see Figure 12).

Figure 12

Gradske vijesti - 2020.



The only post about the crisis situation on the day of the earthquake in the news section of the City of Zagreb's website

Source: City of Zagreb, www.zagreb.hr

A total of 12 posts were recorded on Facebook and the Facebook profile of the City of Zagreb, but this number includes acknowledgements for support and forwarding of previously published content. In the days following the earthquake, communication processes, as well as important information, were organised and published via press releases in the media, on the official websites of the City and companies, the social media profiles of organisations, and at daily press conferences that most media broadcast live, and in which responsible persons from various subject matter and areas of jurisdiction actively participate (City of Zagreb, 2025). Clear conclusions, measures and instructions were broadcast into the public discourse, except for those that, due to the complexity of the subject matter, relate to post-earthquake reconstruction and the related legislation in the making.

The year ended with a new crisis caused by an earthquake on 29 December measuring 6.2 on the Richter scale. At 19 minutes after noon, it hit an area 5 km southwest of Petrinja, and was also felt extremely strongly in Zagreb (Faculty of Science, 2025). Communication and operational responses were quicker compared to those at the beginning of the year as a result of significant overall experience gained during the crises that occurred in the Zagreb area in 2020.

Circumstances in which communication particularly demonstrates its importance, especially for operational actions during situations that negatively affect individual or collective security, are not caused only by natural disasters. Urban areas and modern societies are exposed to a

wide range of possible causes of crises with potential for escalation, with a direct impact on the personal security of an individual, that increases proportionally with the lack of communication resources or, in extreme cases, the complete absence of communication. This is highlighted, inter alia, by the event of 29 September 2020, when, due to a malfunction on the side of the operator, the telephone lines of all emergency services and emergency numbers became unavailable. The numbers 112, 192, 193 and 194 were out of service in all cities and towns (HINA, 2020). Zagreb responded to the telecommunications collapse by sending fire and medical dispatchers to the Holding Centre, ensuring that citizens' calls for emergency and fire department interventions were received without interruption via this communication platform, prepared for crisis communication conditions (see Figure 13). The prompt implementation of the alternative solution and work model did not reduce the safety of citizens during the crisis caused by technical reasons.

Figure 13



Receiving emergency calls at the Holding Centre during the unavailability of emergency service lines (medical doctor from the Institute of Emergency Medicine and member of the Public Fire Department)

Source: Facebook page of the City of Zagreb, 29 September 2020

Despite its intensive use and benefits for the crisis communication and public safety system, the Zagreb Holding operationally suspended the platform in 2021 (Zagrebački holding, 2022), and the City of Zagreb reorganised the City administration, not providing for the Office for Emergency Management to remain in the new organisation scheme as a separate city administrative body (Official Gazette, 2021). With the changes, the work of the former Office continued to be carried out through the City Office for Municipal Self-Government, Transport, Civil Protection and Safety, and a Sector for Civil Protection and Security has been established for this area, which is responsible for crisis communication (City of Zagreb, 2025). The organisational changes were implemented, inter alia, “with the aim of rationalisation, greater efficiency and reduction of administration” (Toma, 2021).

5. CONCLUSION

Crisis communication, as an element of crisis management, was comprehensive, planned and thorough during the crisis caused by the 1880 earthquake in Zagreb. Analysis of available archival material confirmed a high level of structured, timely and proactive communication, despite the technological limitations of that period. The city government introduced and publicly communicated specific safety instructions in a timely manner, using the then available channels such as the press and telegrams to inform the public, as well as the coordination of relevant authorities, which had a positive impact on controlling the effects of the earthquake and preventing additional damage. Communication is one-way, which allows the source of information to distribute content in the desired form without any impediments. Only later, with the loss of control that was absolute at the beginning of the crisis, disinformation in the media space undermined the ideal previously constructed in the public. The institutionalisation and integration of the concept of urban safety into public policies has led to a significant shift towards centralisation and better integration of crisis communication in Zagreb, as well as compliance with the legislation and the activities of relevant authorities. Although during the 2020 earthquake communication discontinuity of authorised and responsible sources was recorded in the early stages of the crisis, the national and local authorities significantly contributed to better coordination of activities, especially in the crisis repair period that followed. Crisis communication during the 2020 earthquake was initially also made difficult by the collapse of digital communication channels, partial inconsistency of messages published from different sources, and the flow of disinformation in the public space. All of the above points to the importance of continuous maintenance and protection of critical infrastructure and the necessity of alternative communication channels for the smooth running of processes during crisis situations. The research results indicate that continuous and systematic communication, which includes educating the population about the nature of crisis situations, has a significant and positive contribution to the efficiency of crisis management and points to the necessity of investing in preventive informing of citizens and education about crisis protocols. In conclusion, a comparison of historical and contemporary experience shows, with a large number of similarities in the behaviour of the media and the public, as well as public authorities during crises, that effective crisis communication must be timely, coordinated and focused on the clarity of messages sent from a relevant and predetermined source, regardless of the communication tools, which are only a kind of instrument that enhances its realisation and reach. Technical preparedness and clearly defined communication protocols are key elements that can significantly mitigate the effects of crisis events such as earthquakes. Establishing a specific communication framework and content applicable to various types of crisis situations, along with identifying clear and centrally positioned key messages and presenters, is the foundation of a crisis plan for effective communication during crises in the modern context. It should encompass various possible scenarios and credible thematic sequences, with continuous monitoring of the public space with the aim of promptly responding to the likely flow of disinformation, which is a typical phenomenon that threatens any

significant, especially crisis situation. Zagreb is located in a seismically active area that, objectively, has the potential for an earthquake of magnitude up to 6.5 on the Richter scale, and, taking into account the fact that it is not a question of if, but when a strong tremor will occur again, timely preparation of scenarios for a future crisis is one of the significant steps in determining its negative effects.

In accordance with the results of the conducted research, the initial hypothesis about the application of high standards during crisis management and communication during the crisis caused by the 1880 earthquake was confirmed. It was also indisputably established that after that earthquake, public communication had the function of ensuring urban safety, which is additionally supported by archival material that also confirms the second hypothesis. Analysed materials indicate that, in crisis communication and management during the 2020 earthquake in Zagreb, modern technologies and communication practices were used that record a development trend compared to the previously used information models, which also confirms the third hypothesis, but given the period of time between the two events and the noticeable development of technologies and the evolution of society in general in the period in question – at the beginning of the research, a greater progress in the field of organisation and practical implementation of communication activities was expected. Given that the City of Zagreb changed the respective responsibilities and performed an organizational restructuring of the former Office for Emergency Management making it a lower-level body, and that the Zagreb Holding significantly reduced the scope and areas of communication activities, abandoned the communication policies of the former Holding Centre, and terminated telecommunication connections with emergency and operational services via a single platform, the hypothesis of modern channels and techniques for communication in crisis situations that Zagreb would have at its disposal today is rejected. Related to this, and based on the results of this research, the conclusion is drawn about the necessity of investing in the resilience of the security system at all levels, and in the context of communication, there is the need for continuous readiness to respond and maintain connections with primary, but also with always designated alternative means in case the primary ones are disabled.

The official documents and archives of the Zagreb Holding permanently record numerous activities entrusted to the Holding Centre in the crises of the 21st century and their overlapping, especially in 2020:

“The City of Zagreb Medal was awarded to the Zagreb Holding Centre and the Zagreb City Pharmacy, which have been at the disposal to citizens 24 hours a day since the beginning of the COVID-19 pandemic and the earthquake. The Holding Centre has provided a communication platform that served as a network for all Health Centres to provide citizens with information and advisory support during the pandemic. The Centre has also been assisting citizens from the onset of the earthquake and organising the necessary actions of operational or other competent services. In the month after the earthquake, as many as 38,593 calls were recorded on special emergency lines, and the lines are still open. The Holding Centre, inter alia, has been receiving applications from citizens for inspections of buildings, or the arrival of structural engineers.” (Zagrebački holding, 2025).

Active project participants, without whose sacrifice and dedication the concept would not have achieved the measurable level of success shown, are recognised for their most important contributions to the crisis before formal announcements and ceremonial awards. In special parts

of interactions with citizens, usually at the very end of the conversation and in the unspoken part of the greeting that, incomparably more authentic than words, unites thanks and wishes – when “Good night!” – becomes a reality.

This paper is dedicated to them.

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