

**Balancing Safety and Information:
Understanding the Barriers and Approaches for Emergency Responders when Communicating
with the Public**

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Abstract

This study explores the experiences and perceptions of emergency responders regarding their communication with the public during emergencies. Focusing on routine emergencies such as fires and medical incidents, we conducted in-depth semi-structured interviews with three firefighters and three ambulance paramedics. Using thematic analysis, we identified two themes regarding the communication approaches of emergency responders: (1) a perceived need to provide an appropriate level of information to maintain public calm, yet (2) a belief in a need to limit information sharing to ensure public safety. These approaches reflected perceptions by emergency responders regarding aims and barriers to emergency communication with the public. The themes identified show that emergency responders believe maintaining a balance of giving sufficient information without overwhelming the public is crucial for keeping the public calm and for managing emergencies effectively. However, previous research suggests that hesitancy to share information due to concerns about public behaviour can potentially lead to negative interactions with the public. We propose practical solutions for emergency responders to provide a reasonable amount of meaningful information during emergencies to facilitate positive relations with the public and enhance safe emergency response.

1. Introduction

Emergency responders play a crucial role in communities by protecting and rescuing people, and safeguarding property and the environment. These jobs often involve high levels of stress and risk in helping not only their fellow responders but also untrained members of the public during emergencies, who often require guidance to ensure their own safety (Jouanne et al., 2017). Effective communication between emergency responders and the public is important to improve emergency response efficiency. The public generally seeks practical information to make informed decisions on how to respond (Helsloot & Ruitenberg., 2004). Researchers argue that emergency responders should deliver information to the public as promptly as possible and provide continuing updates as new information becomes available (e.g., Carter et al., 2015). Providing information can foster a positive public response, and regular updates about the actions taken by responders can further facilitate relationship-building between emergency responders and the public during the response phases of emergencies (Drury et al., 2019).

Although providing information to the public has these benefits, emergency responders are likely to experience difficulties communicating with the public. For example, they may have limited information about incidents in the early stages of an emergency or may be constrained by needing to maintain confidentiality. In light of these potential barriers, an open question – one that has received little attention in the literature – is what characterises the challenges that emergency responders experience when navigating sharing information with the public, and how these challenges reflect their beliefs about public behaviour.

This paper considers the role of two main factors in emergency management practice when responders communicate with the public: (1) how emergency responders perceive public behaviour, and (2) the barriers they encounter when coordinating and communicating with the public. Understanding both these perceptions of barriers and expectations of public behaviour is critical, as they directly influence responders' communication and coordination practices. Therefore, this study explores the barriers that emergency responders perceive in providing information to the public during emergencies, and how these barriers affect their ability to deliver informative and actionable risk communication. To address these aims, we conducted an interview study with emergency responders.

Our research questions were:

1. How do emergency responders perceive public behaviour during emergencies?
2. What barriers do emergency responders encounter when communicating and coordinating with the public?

2. Theory

This section first examines enduring myths regarding public behaviour in emergencies, particularly those concerning irrationality and selfishness, and presents empirical evidence that challenges these assumptions. It then considers how emergency responders tend to view the public and outlines barriers to effective emergency communication.

2.1 Myths of public behaviour during emergencies: ‘irrational behaviour’ and ‘selfishness’

Early crowd psychology was most prominently advanced by Le Bon (1926 [1895]), who portrayed crowds as primitive and prone to losing rational control. His perspective became deeply embedded in government planning and public discourse, shaping long-standing assumptions about crowd behaviour in emergencies (Stott & Drury, 2017).

However, empirical research has repeatedly overturned such assumptions. Studies by Cocking et al. (2009) and Fischer et al. (2011) show that people are generally guided by social cues and engage in cooperative rather than chaotic behaviour. Historical investigations and medical publications on air raids during WWII likewise found that panic was rare; even under conditions of rapid evacuation, individuals acted in coordinated and purposeful ways (Jones et al., 2006).

Similarly, the myth that people behave selfishly during emergencies is not empirically supported. Research demonstrates that even under extreme stress, individuals frequently display cooperative and altruistic behaviours, helping others and working collectively rather than acting solely in self-interest (Drury et al., 2009; Hogg et al., 2010). Cocking et al. (2009) and Drury et al. (2013) emphasize the public’s willingness to cooperate in protecting themselves and others and to accept guidance from emergency responders.

This unselfish and coordinated behaviour has drawn researchers’ attention to understanding the underlying psychological explanations. According to social identity theory, people’s sense of self is partly defined by their membership in social groups (Tajfel & Turner, 1979). During emergencies, shared social identities can emerge among those who see themselves and others as facing a common threat, thus creating a sense of “we-ness”. This shared identity leads individuals to expect support from others and to act in ways that protect and assist fellow group members (Drury et al., 2015).

Nevertheless, despite repeated empirical refutation (Clarke, 2002; Haghani et al., 2023), the notion of crowds as irrational and uncontrollable has survived. Reappearing in the guise of “mob mentality,” “mass panic,” and “contagion,” it persists due to its political and ideological utility, continuing to

shape depictions of crowds well into the twenty-first century (Stott & Drury, 2017). This framing risks constructing crowds as inherently dangerous and legitimizing coercive strategies of crowd management (Haghani et al., 2019; Lügering et al., 2023).

2.2 Public behaviour as perceived by emergency responders

As demonstrated above, accumulated research has shown that the public generally exhibits cooperative behaviour during emergencies. However, despite some progress in challenging assumptions of crowd irrationality, these changes have been inconsistently reflected in policy and emergency planning. According to Frewer et al. (2003), there is a widespread belief among emergency responders that the public struggles to grasp the uncertainties inherent in emergency management processes. For example, concerns persist about the public spreading misinformation, particularly during the early stages of a response when the situation is still unclear. If emergency responders doubt the public's ability to handle the uncertainties of risky situations, they may opt to restrict information (Lügering et al., 2023). Furthermore, safety professionals and emergency responders often adhere to the concept of 'mass panic' (Drury et al., 2013). This belief is closely tied to the prominence of a 'command and control' approach, in which emergency responders and government agencies assume that the public tends to behave irrationally and lose control during emergencies (Hinata et al., 2024).

2.3 Barriers to effective emergency communication

Despite growing recognition that emergency responders' perceptions of the public may differ from the behaviour that the public in fact exhibits, research on how responders perceive the public remains limited. For instance, emergency communication has specific demands, as Palttala and Vos (2011) explain, including the obligation for responders to provide information rapidly without compromising accuracy or accountability. This responsibility—such as promptly delivering accurate information with strong accountability—is further complicated by the need to maintain confidentiality (e.g., regarding ongoing investigations or injuries) and by concerns about liability. These key characteristics of emergency communication must be considered to fully understand how responders communicate with the public. Moreover, little research specifically addresses the obstacles responders face when sharing information with the public. A comprehensive exploration of these challenges is essential for developing strategies to enhance communication efficacy and to improve public safety during crises. Since Drury et al.'s (2013) paper, substantial new evidence has emerged challenging the notion of mass panic (e.g., Barr et al., 2024), while advancements in technology have significantly transformed how responders communicate with the public. For example, a systematic review by Hinata et al. (2024) found that responders now employ a variety of communication strategies but face new

challenges, such as navigating social media platforms during emergencies. These findings underscore the need to examine both responders' perceptions of the public and the operational challenges they encounter in contemporary contexts. Such developments warrant a re-evaluation of emergency responders' views to determine whether their perceptions of the public have evolved and to identify current barriers to effective communication.

Therefore, this paper aims to examine the challenges emergency responders encounter when sharing information during emergencies and their perceptions of the public's response, an area that remains underexplored. It does so by directly interviewing emergency responders about their communication with the public during emergencies. Emergency responders' views of the public, especially if their perception of the public and their characterisation of potential barriers to communication, are important because such perceptions may affect how they communicate and interact with the public.

3. Methods

3.1 Research design and strategy

This study adopted a qualitative research design using semi-structured interviews to explore emergency responders' perceptions and experiences of communicating with the public during emergencies. In particular, it focused on how emergency responders perceive the public. Semi-structured interviews were chosen because this method enables an in-depth understanding of the nuanced and subjective ways responders perceive communication challenges by giving participants the flexibility to speak about topics that mattered to them (Fylan, 2005).

3.2 Data collection procedure

The first author conducted semi-structured one-to-one interviews lasting between 45 minutes and 1 hour. The total interview time was 5.2 hours ($M = 52$ minutes 59 seconds). Participants were provided with an information sheet about the interview ahead of time, had the option of reading the interview schedule prior to the interview, and provided informed consent. All interviews were conducted online via Microsoft Teams. The questions on the interview schedule asked about emergency responders' experiences of sharing information with the public during emergencies, and their expectations of how the public would respond and have responded. The video call interviews were recorded in Microsoft Teams and coded in NVivo, and then transcribed verbatim with participant pseudonyms, at which point the recordings were deleted.

3.3 Participants

Participants were operational firefighters and ambulance service personnel working in the UK who were invited to take part in individual interviews about their views of their relations with the public and how they communicate with the public during emergencies. Participants were recruited via emails and on X (formerly Twitter), and flyers were distributed across the fire and rescue services and ambulance services in the UK. We also applied snowball sampling, which relied on participants telling other participants about the study. The final sample comprised 6 participants: 3 male operational firefighters in the UK and 3 male ambulance paramedics in the UK. The participants are referred to using pseudonyms to ensure anonymity. In determining the sample size, the question of data sufficiency needs to be considered. Guest et al. (2006) note the lack of pragmatic guidelines for determining data saturation, and Braun and Clarke (2021) argue against the idea of a clear-cut method for deciding whether data saturation has been achieved, as the concept assumes that meaning resides in the data and is discovered by researchers. They instead emphasise the role of researchers in actively deciding when the data collected are sufficient to support meaningful analysis. After six interviews, we concluded that we had derived recurring patterns from participants' accounts of their interactions with the public. The themes generated changed minimally after several iterations of analysis. Moreover, prior research using the same analytic methodology has found that a sample of 6–8 interviews can be sufficient to develop stable themes (Jaffey & Ashwin, 2022). Considering the length of the interviews and the richness of participants' views and experiences, we judged that six interviews provided sufficient data for the purposes of this study and that the sample size was appropriate.

3.4 Analytical approach

We employed a framework analysis approach of Thematic Analysis, characterized by a structured method of organising and analysing data according to predefined themes or concepts. This method provided a structured yet flexible means of organising and analysing the data, enabling the identification of predefined concepts while allowing space for emergent themes and unexpected findings. It also allowed for the integration of theoretical assumptions during the interpretation process (Braun & Clarke, 2022). This approach was particularly well-suited to our study's aims to investigate emergency responders' perspectives on public responses during emergencies, despite the limited existing literature in this field, and to incorporate assumptions derived from social identity theory, which informed the development of our interview questions.

The analysis was conducted by the first author. In the initial phase, the author familiarised themselves with the data through a thorough reading of the verbatim interview transcripts. A set of initial codes

was then generated to identify key aspects of the data, such as operational requirements, perceived barriers, and communication outcomes. These codes were iteratively reviewed, refined, and clustered into themes through a reflective and inclusive process, ensuring that diverse perspectives and nuances were retained. Following Braun and Clarke's six-phase procedure, the themes were systematically reviewed, defined, and finalised. The final analysis focused on three key thematic areas: (1) operational requirements and constraints, (2) perceived barriers (e.g., concerns emergency responders have about the public), and (3) the resulting outcomes in how emergency responders communicate with the public (see Table 1).

3.5 Ethical considerations

This study was approved by [host institution's] Research Ethics Committee (Reference: 263-2223/9). All participants were provided with an information sheet and had the opportunity to ask questions prior to giving informed consent. Written informed consent was obtained prior to the interviews. Anonymity was ensured by using pseudonyms throughout data transcription and reporting. Participants were informed of their right to withdraw from the study at any time without consequences, and that interview recordings would be deleted after transcription.

4. Results

Our analysis identified two main themes from the statements of emergency responders: (1) tailoring the level of information to maintain public manageability, and (2) limiting information sharing to maintain public safety. In addition, responders tended to categorise the public into two groups based on their potential exposure to the situation: group A) those more likely to be directly affected, and group B) those less likely to be directly affected. Table 1 presents the goals and approaches reported by emergency responders. The approaches to sharing information with the public during emergencies may be shaped by these goals, which in turn can be influenced by responders' perceptions of how the public is likely to behave.

Table 1: Reported goals and communication approaches of emergency responders across different public groups.

Group	Responders' reported goals	Reported communication approach
Group A: Those more likely to be directly affected	Ensure that accurate and timely information is available to the public	Tailoring the level of information to maintain public manageable

Group B: Those less likely to be directly affected	Keep certain information confidential to maintain public safety	Limiting information sharing to maintain public safety
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First, we explain theme (1)— tailoring the level of information to maintain public manageability, — focusing on group A, those more likely to be directly affected.

Table 2 presents public behaviour as described in the literature, interview quotation, responders’ evaluation of public behaviour, and emergency responders’ approach when emergency responders communicate with the public. The novelty of this study lies in adding an analysis of how the behaviours of the public, as described in previous literature, are interpreted from the perspective of emergency responders.

Table 2: Summary of how previous literature describes public behaviour, how interviewed responders evaluate the public, and illustrative interview quotations.

Public behaviour (from literature)	Responders’ evaluations	Representative interview quotation
Atkinson, S. (2023) Affected individuals and groups share information and create informal and formal networks, establishing multiple levels of information sharing during disasters.	(a) Sharing (inaccurate) information with others	“If people don’t receive any information, they will make it up. They will fill the void, potentially spreading inaccurate information through the media. That’s why we need to provide some information to prevent that from happening.” (Firefighter, Steve)
Wood et al. (2018) When provided with warning information about an imminent threat, members of the public tend to seek additional information and confirm information already received before they act (milling behaviour).	(b) Seeking additional information	“The public will ask what’s going on and whether they should be worried. You need to find a balance between reassuring them that everything is fine and there’s nothing to worry about, while at the same time avoiding giving them too much information, if that makes sense.” (Firefighter, Jamie)
Young et al. (2020): Civilian bystanders used Facebook Live and	(c) Recording & uploading	“They want to film it, see it, tell people about it, and post it on social media.” (Paramedic, Chris)

Periscope to livestream disaster-affected areas in real time.	on social media	
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The majority of emergency responders in our interviews reported that their aim is to ensure that accurate and timely information is available to the public. This suggests that they viewed tailoring information to the perceived needs of the public as important. As their responses indicate, their customization could be influenced by their perceptions of the public's characteristics and behaviour: the perceived tendency to (a) share (inaccurate) information with other members of the public.

Emergency responders often described members of the public as disseminating inaccurate information among themselves. In their accounts, they expressed concern that such information could escalate situations, particularly misinformation. This concern was illustrated by Jamie, who discussed how speculation and rumours start with the public:

An accident in the in-the city centre, [...] driving a car and then [...] suddenly you'll get all the comments, especially as well with people speculating about what's happened [...]. And it was probably a drunk driver or [...] probably a stolen car and things like this and, [...] no one knows what is going on at that point, it's just pure utter speculation, [...] that kinda have an effect and that can be quite [...], ru-rumours spread, [...] very quickly. (Firefighter, Jamie)

Neil also gave an example, noting the value of providing key details quickly and indicating that this could help limit unverified stories:

We need to get messages out quite quickly and-and it's being able to get these key information start with and then reassure the public that more updates will come because-because that's when social media starts erm it's like '*Chinese whispers*'. There's that erm one thing is to another to another and that build into a story that isn't necessarily accurate. (Paramedic, Neil)

Neil referred to '*Chinese whispers*', a game played in British schools in which information changes as it is passed from person to person (now more commonly called *the game of telephone*). In his account, this illustrated how information can be distorted when shared informally. Steve described a similar situation:

If people got no information, they will make it up. You know they will fill a void. Um they will potentially put in wrong information out- into the media. So, we need to put some information out to stop that from happening. (Firefighter, Steve)

Steve explained that in the absence of confirmed details, people might generate explanations themselves, which could lead to misleading accounts being shared.

If something goes on for several days, Chinese whispers start, especially if local residents in a street have been displaced. The difficulty then becomes managing information. (Firefighter, Steve)

Steve highlights the challenge of managing public information during prolonged incidents. He explains that as events drag on, especially in areas where residents are displaced, information starts to spread rapidly. People arrive with different amounts of information, which can be misinterpreted or distorted, leading to misinformation circulating within the community. Interviewees highlighted that this poses a challenge for emergency responders, as they must manage the accuracy of shared information while also safeguarding confidential details from being disclosed.

Across these accounts, the emergency responders described the public sharing information with each other without confirmation of the facts. They suggested that providing some initial details could help reduce the likelihood of speculation.

Another theme that emerges is emergency responders' impression that the public's tendency to (b) seek additional information can hinder or complicate operations. Jamie explained:

The public will ask what's going on [...] if they should be worried and you need to kind of find that line between telling them everything's all right nothing to worry about [...], but not give them anything t-too [...] information if that makes sense.' (Firefighter, Jamie)

When Jamie mentions "find the line," he conveys the challenge of balancing the need to provide sufficient information to reassure the public with the need to avoid giving too much. This suggests that while information provision is essential, excessive information may create confusion or prompt further questions, thereby complicating emergency response efforts.

Chris described explaining to nearby members of the public what would happen next once the initial intervention had concluded and the situation had worsened, in order to prepare them for the responders' departure and the handover to support services. At that point, he said he would not answer further questions, instead offering reassurance that the situation would not deteriorate further and that work was under way to address the problem.

I try and keep everyone informed. Once we've stopped[...] initial intervention and once that's got worse, I'll inform the general people around of what's gonna happen so that they're prepared for [...] we're probably gonna now leave and we'll hand this over to- support services. And then, [...], I won't really field any questions, I'll just say, [...] they'll direct it when they come, but it's a reassurance again, that everything is not gonna get any worse now, just need to repair what's gone wrong. (Paramedic, Chris)

In this example, Chris emphasizes that the timing of information sharing is crucial. He deliberately avoids answering questions, focusing instead on reassuring the public that the situation will not worsen and that support services will take over. By not engaging in extensive dialogue, Chris aims to prevent further anxiety and manage the psychological state of those affected. His approach underscores the importance of psychological preparation and reassurance in managing public responses to emergencies.

Second, we explain theme (2)— Limiting information sharing to maintain public safety —focusing on group B, those less likely to be directly affected.

Emergency responders reported that advancements in technology have increased concern about how information is shared among the public, particularly the perceived tendency to (c) record and upload incidents on social media.

Chris (paramedic) emphasised his belief that the public have a keen interest in witnessing and sharing emergencies and that social media makes this an increasing issue: ‘They want to film it, see it, tell people about it, and post it on social media.’

Here, Chris makes absolute statements about how he believes the public want to act in emergencies, thus demonstrating strong confidence in his understanding of what the public desires to witness and share during events. He also proposes that social media use varies across generations, suggesting that it is a more recent and pressing topic.

When the public receive information and upload it online, it tends to spread rapidly. In the next excerpt, Jamie (firefighter) shares his view that individuals have no hesitation in sharing information with others, and shows concern that this widespread dissemination can pose possible significant challenges: ‘If the public has too much information, they won’t hesitate to share it. Suddenly, they could post things on social media that might be upsetting for family members or others who see it.’ Here, Jamie expresses concern that when the public has access to too much information, they will share it without hesitation, which can result in sensitive details being posted online and distressing for

the families involved. Jamie's statement highlights his perceived tension between the public's eagerness to share information and the need for privacy and careful communication during a crisis. It is about how unfiltered sharing can disrupt the emergency response and harm those affected. It reflects his fear that the immediacy of social media is outpacing the careful management required in these situations.

Moreover, emergency responders often perceive the curiosity of bystanders or those not directly involved in incidents as intrusive to their operations because they increase the risk of information being uploaded to online platforms for others to see. For example:

Any information you pass on nowadays is inevitably going to end up on social media within about 10 minutes. That's one of the big challenges I find. Especially when people aren't directly involved in the situation, they tend not to share anything because, as I said, people are naturally curious. They just want to know so they can update their social media. (Paramedic, Joseph)

Both Jamie and Joseph are concerned that the public's use of social media may lead to issues such as the rapid spread of inaccurate and confidential information. Consequently, they express concerns about the possibility of confidential information being inadvertently disclosed to the public. This perception can cause emergency responders to exercise greater caution when sharing information publicly, with the aim of protecting those affected from unnecessary disclosure. As a result, they describe tending to limit the dissemination of certain information to the public.

5. Discussion

This research explores the challenges emergency responders report in communicating information to the public during emergencies, focusing on their expectations of public reactions in the context of their primary duty to maintain public safety through warning, informing, and advising the public (Cabinet Office, 2012). Specifically, it addresses two key questions: 1) How do emergency responders perceive public behaviour during emergencies? and 2) What barriers do emergency responders encounter when communicating and coordinating with the public?

The findings indicate that responders' beliefs about how the public will react influence how they share information with the public. Participants expressed concerns about potential public behaviours such as the spread of inaccurate information, independent information seeking, and recording incidents and sharing them on social media. These concerns shaped how responders approached communication, leading them to carefully regulate both the content and amount of information they provide. In

particular, they perceived a tension whereby providing too much information might overwhelm the public and create confusion, while providing too little might prompt people to seek information elsewhere and generate inaccurate accounts.

The interview data further suggest that responders aim to ensure that the public **receive** accurate information directly from them and prioritise reassuring the public that the situation is under control and that efforts are underway to resolve the incident. However, as noted by Willing (2021), emergency responders are generally instructed not to engage with the public at emergency scenes unless specifically directed by their officers. In addition, many emergency management specialists assume that disclosing uncertain information may undermine trust and lead to confusion or undesirable behaviour (Frewer et al., 2003). Consistent with these assumptions, some participants described avoiding responding to public inquiries when they believed doing so would not contribute to maintaining calm. However, previous research suggests that withholding information may increase public anxiety (Carter et al., 2012), and that lack of clarity may encourage individuals to seek information from alternative sources (Templeton et al., 2023). In this sense, providing minimal responses or declining to engage with bystanders (Willing, 2021) may inadvertently undermine responders' goal of helping the public understand that the situation is being managed and that progress is being made.

Existing research on crowd behaviour provides further insight into how communication may support public cooperation (Carter et al., 2018). In particular, providing information in an open and honest manner, offering regular updates, clearly explaining what responders are doing and why, and providing concrete, actionable guidance are all suggested to reduce uncertainty, maintain trust, and promote cooperative behaviour.

Importantly, the present findings suggest that responders recognise the importance of reassuring the public, but lack clear guidance on what information should be prioritised and how it should be communicated. This uncertainty appears to contribute to more cautious or avoidant communication practices. These findings point to the importance of message construction under conditions of limited resources (e.g., time and available information), and highlight the need to better understand how information can be prioritised and structured in practice. The study therefore suggests the need for further research on how to develop effective communication strategies that are feasible within the constraints faced by emergency responders.

5.1 Theoretical contribution

From a theoretical perspective, this study contributes to social identity theory (Tajfel & Turner, 1979) by applying it to the context of emergency communication. Interview questions were explicitly informed by this framework—for example, asking whether responders change their communication depending on the group involved. Thematic analysis revealed that responders do in fact distinguish between segments of the public—for instance, between helpful early-arriving bystanders and onlookers perceived as intrusive or unhelpful. Such distinctions reflect in-group/out-group categorisation processes, suggesting that communicative decisions are influenced by perceived group membership and relational proximity. This extends social identity theory into a novel applied domain, illustrating how identity-based perceptions shape real-time communication choices during emergencies.

5.2 Practical implication

A key issue identified in our research is the concern that responders tend to have about how the public might react in emergencies. Many responders interviewed expressed hesitation, fearing that releasing too much information could lead to panic or confusion. However, the literature suggests that these concerns are often overblown (see Drury et al., 2013). This implies that one of the core implications of our research is the need for increased education and training for responders on public response patterns, particularly since the interviewees did not mention having formal training on this topic. This suggests the need for more structured and evidence-based training to support responders in effectively engaging with the public during emergencies. Specifically, training should emphasize that the public is more likely to act responsibly when provided with the right information. By countering the instinct to withhold information, responders can be better equipped to share critical details, such as confirming that paramedics are attending to the injured or providing updates on the situation (see Willing, 2021). In doing so, responders can enhance public cooperation, reduce unnecessary confusion, and build greater trust during emergencies.

In addition, the theoretical insight from our study offers a second practical recommendation: encouraging responders to cultivate a shared sense of identity with the public. Training programmes could incorporate strategies to reinforce common goals—such as public safety and effective emergency resolution—as a means to promote trust-based cooperation and more transparent communication practices.

5.3 Limitations

Findings from interview studies can be influenced by the specific context in which the research is conducted. For instance, the experiences and challenges faced by emergency responders can vary

significantly depending on factors such as the region and the types of emergencies they most commonly respond to local protocols (e.g., urban vs. rural areas), resource availability, cultural factors, and the nature of typical emergencies (e.g., natural disasters vs. human-made incidents) can all impact how responders perceive and approach their duties. Therefore, the insights gained from one specific context may not directly apply to other settings with different characteristics. However, the themes identified were consistent across multiple interviewees, highlighting their relevance to emergency response more broadly. We also need to note that communication dynamics may differ significantly in large-scale disaster contexts, which were not addressed in this study.

Some participants referred to training when discussing communication practices with the public. In particular, none reported having received formal training specifically focused on communicating with crowds, and many instead described relying on experience-based learning. These observations suggest that both formal training (e.g., university paramedic courses) and informal training (e.g., on-the-job learning or inter-agency drills) may influence how responders interpret the public's needs and capabilities. Future research could examine this relationship more systematically.

6. Conclusion

We found that emergency responders' communication tends to be shaped by their beliefs about how the public will respond. Responders generally attempt to strike a balance in the amount of information they provide, since they are concerned that too much information may overwhelm the public while too little may lead people to seek information elsewhere. The interview data suggests that emergency responders believe that maintaining this balance is crucial for keeping the public calm and managing emergencies effectively. This approach may be related to their training in public communication. However, if responders are hesitant to share information, such hesitancy can result in either too little information or no response at all, potentially leading to negative interactions with the public. Therefore, it is important to develop practical solutions for providing a reasonable amount of meaningful information and to incorporate clear guidelines into their training. Such guidelines would support emergency responders' efforts to communicate effectively to communicate effectively in time-sensitive and information-limited disaster situations.

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