

## Empowering Communities Through Risk Communication: Insights from a Decade of Global Research

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**ABSTRACT:** Effective risk communication is vital for disaster preparedness and community resilience, especially as disasters become increasingly complex due to climate change and global disparities. This narrative review aims to evaluate the effectiveness of risk communication strategies, with an emphasis on message design, media platforms, behavioral outcomes, and systemic factors influencing implementation. A systematic literature search was conducted using Scopus and Google Scholar, focusing on the last ten years. Key terms included "risk communication," "disaster preparedness," and "behavioral change." Inclusion criteria prioritized peer-reviewed articles with empirical data or theoretical analysis relevant to risk messaging in diverse global contexts. Findings highlight that message clarity, emotional appeal, and community participation are pivotal in influencing behavioral change. Social media, mobile applications, and virtual reality platforms enhance comprehension and responsiveness, but their impact is moderated by trust, cultural relevance, and technological accessibility. Trust in authorities and inclusive governance structures significantly shape communication efficacy, while localized approaches in developing countries outperform top-down models typical of developed nations. These insights align with dialogic risk communication theories that prioritize engagement and contextual adaptation. The review recommends that policies integrate participatory mechanisms, promote cultural competence, and invest in digital inclusivity. Future research should explore long-term impacts, equity-based frameworks, and the intersectionality of risk communication. Strengthening these systems is essential for building resilience and ensuring more effective disaster risk management across diverse settings.

**Keywords:** Risk Communication, Disaster Preparedness, Behavioral Change, Community Engagement, Trust in Authorities, Digital Media, Inclusive Policy.



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## INTRODUCTION

Effective risk communication in the context of disasters has emerged as a critical aspect of public safety and community resilience. As the frequency and intensity of both natural and anthropogenic disasters increase globally, the ability of authorities to deliver timely, accurate, and actionable information becomes ever more essential. Risk communication, defined as the exchange of real-

time information, advice, and opinions between experts and people facing threats, plays a fundamental role in reducing vulnerability and enhancing disaster preparedness (Bollyky & Petersen, 2024). While numerous strategies have been developed, their effectiveness varies significantly across contexts, influenced by factors such as the clarity of messages, communication channels, and public trust. Recent studies highlight the growing importance of integrating community engagement, local knowledge, and digital technologies into communication strategies to address these variabilities (Backfried et al., 2016; Parkoo et al., 2022).

Recent scholarship has emphasized the growing advantage of digital media platforms over traditional channels in risk communication. Digital tools, including mobile applications and social media, enable rapid dissemination and bidirectional engagement, allowing authorities to not only distribute information but also receive feedback and monitor public sentiment (Bubeck et al., 2024). These technologies support tailored communication efforts, reaching diverse audiences with customized content suited to their needs and contexts. While traditional media such as television and radio continue to play an important role, particularly in regions with limited internet access, hybrid communication strategies that blend both digital and conventional platforms are increasingly seen as best practice (Oliveira et al., 2024). This transition also calls for rigorous empirical evaluation to determine the effectiveness of various media in fostering behavioral change and preparedness.

Foundational studies reveal that a lack of public awareness and knowledge about potential hazards is one of the primary challenges impeding the efficacy of risk communication. As Parkoo et al. (2022) observe, many individuals fail to respond adequately to disaster warnings due to limited understanding of risk factors and safety protocols. Compounding this problem is the inherent uncertainty often associated with disaster predictions, such as forecasts of extreme weather events. Lokmic-Tomkins et al. (2023) note that uncertainty can lead to public confusion, misinformation, and hesitation to act, thereby diminishing the utility of timely alerts. This underscores the need for communication strategies that not only inform but also build public confidence through clarity, transparency, and consistency.

Moreover, the lack of inclusivity in communication practices frequently exacerbates the risk for marginalized communities. Research by Volenzo and Odiyo (2019) indicates that top-down communication approaches often fail to account for local perceptions of risk and exclude voices from vulnerable populations. These limitations can weaken community trust and hinder collective action. In contrast, participatory communication models that incorporate community input are more likely to resonate with local audiences and motivate action. Empowering communities to co-produce risk knowledge fosters a sense of ownership and responsibility that can enhance disaster response outcomes.

Despite technological advancements, several enduring challenges continue to hinder the success of risk communication initiatives. These include the fragmented nature of institutional coordination, the complexity of conveying probabilistic information, and the persistence of social inequities that limit access to risk information. For instance, Haque et al. (2021) emphasize that in many developing countries, underinvestment in public communication infrastructure and insufficient stakeholder engagement result in uneven dissemination of warnings. Similarly, cultural

barriers and historical mistrust toward government institutions can further complicate message reception and adherence to safety advisories. Addressing these structural issues requires both systemic reform and sustained investment in public communication capabilities.

Another challenge lies in aligning risk communication strategies with the lived realities and perceptions of affected populations. As noted by Mendes et al. (2019), vulnerability assessments at the local level often reveal stark discrepancies between official narratives and community experiences. These gaps can undermine the credibility of risk communication efforts and reduce their effectiveness. Integrating local narratives and culturally relevant modes of communication—such as storytelling or performance art—can bridge these divides and enhance message salience, as evidenced by community-based initiatives in regions like Thailand and the Pacific Islands (Backfried et al., 2016; McNaught et al., 2014).

Despite growing interest in participatory and culturally embedded approaches, existing literature continues to exhibit significant gaps. Many studies focus predominantly on macro-level policy frameworks or technological innovations, neglecting the socio-cultural dynamics that shape communication practices on the ground. In particular, empirical data on risk communication outcomes in low-income and disaster-prone settings remains scarce. Haque et al. (2021) argue that this omission hampers the development of contextually grounded communication models. Moreover, the lack of standardized metrics for evaluating communication efficacy further limits cross-study comparability and knowledge accumulation. Addressing these deficiencies calls for interdisciplinary research that combines insights from communication studies, disaster risk science, and behavioral psychology.

This review aims to systematically examine the existing literature on disaster risk communication, with a focus on identifying effective practices and highlighting key influencing factors. It seeks to analyze how communication strategies influence behavioral change, trust-building, and disaster preparedness in diverse settings. The review also endeavors to uncover gaps in current knowledge and to propose directions for future research. Particular attention will be given to community-based communication, the integration of digital technologies, and the role of participatory methodologies in enhancing risk communication outcomes. Through this examination, the study intends to contribute to the refinement of theoretical frameworks and to support the formulation of more effective, inclusive, and evidence-based communication policies.

The scope of this review encompasses studies conducted across various geographical regions, with an emphasis on Southeast Asia and the Pacific due to their high disaster risk profiles and cultural diversity. These areas offer valuable insights into how different socio-political systems, levels of technological development, and cultural norms influence the reception and impact of risk communication. For example, in Southeast Asia, efforts often focus on community empowerment through education and training, while in the Pacific Islands, traditional knowledge and culturally resonant storytelling play a prominent role (Kim et al., 2022; McNaught et al., 2014). By exploring both similarities and divergences in communication practices across these contexts, this review aims to generate a nuanced understanding of what constitutes effective risk communication in settings of high vulnerability and complex social structures.

## METHOD

The methodology employed in this narrative review was designed to ensure a comprehensive, systematic, and academically rigorous selection of literature related to risk communication, disaster preparedness, and behavioral change. The aim was to synthesize high-quality evidence that provides insight into the efficacy of communication strategies in disaster contexts. To achieve this, a structured literature search was conducted using well-defined criteria for inclusion and exclusion, and a transparent process of literature identification, screening, and evaluation was applied.

The primary databases used for literature retrieval included Scopus and Google Scholar, two of the most extensive academic search engines that cover a wide range of peer-reviewed journals and scholarly publications. These platforms were selected for their breadth and accessibility, particularly their inclusion of both international and regional studies, which are critical for understanding the diverse geographical and cultural contexts of disaster risk communication. The search was conducted between January and March 2025, and all relevant literature published within the last ten years (2013–2023) was considered. This temporal boundary ensured the review incorporated the most recent advancements and trends in the field while allowing for the inclusion of foundational theoretical contributions when necessary.

The selection of search terms was guided by three core thematic areas: risk communication, disaster preparedness, and behavioral change. For the first domain, "risk communication," combinations of keywords such as "risk perception," "communication strategies," "community engagement," and "disaster risk reduction" were utilized. Terms like "crisis communication" and "emergency communication" were also employed to capture context-specific discussions, particularly those focusing on acute disaster events or public health emergencies, as suggested by Schweizer and Renn (2019). This allowed for a broad yet targeted exploration of how risk messages are formulated, transmitted, and interpreted across different disaster scenarios.

In the domain of disaster preparedness, the search was enhanced using terms such as "preparedness planning," "disaster resilience," and "community readiness." These were complemented with keywords like "local knowledge" and "capacity building," which are especially relevant in the context of bottom-up disaster preparedness initiatives (Sandal et al., 2025; Tariq et al., 2022). These terms helped identify literature that examines both structural and community-level preparedness interventions and their relationship with communication strategies.

To explore behavioral change, terms such as "behavioral intervention," "social norms," "risk mitigation behavior," and "public health behavior" were included. Particular emphasis was placed on studies discussing "public health behavior change," given its relevance to pandemic-related risk communication and other public health emergencies (Kim et al., 2022). These keywords allowed the review to capture literature that investigates the psychological and social drivers of behavioral responses to disaster-related information.

The inclusion criteria were developed to select studies that align closely with the objectives of this review. Only articles published within the last decade were included to ensure that the evidence reflects current practices and knowledge. Studies had to be peer-reviewed and could employ either quantitative, qualitative, or mixed-method designs, as long as they addressed the intersection of communication, preparedness, and behavioral change. The inclusion of diverse methodological

approaches was crucial to understand both measurable impacts and lived experiences of communication practices.

Geographical relevance also played a significant role in article selection. Studies from disaster-prone regions, including Southeast Asia, the Pacific Islands, Latin America, and Sub-Saharan Africa, were especially prioritized, although evidence from developed countries was also included where appropriate for comparative analysis. This approach enabled the review to reflect global disparities and contextual specificities in how communication strategies are developed and received.

Conversely, a number of exclusion criteria were applied to maintain the academic quality and focus of the review. First, all studies not subjected to a formal peer-review process were excluded. This includes opinion pieces, conference abstracts without full papers, and unpublished theses or working papers. Although such sources may contain valuable insights, they were excluded due to concerns over reliability and reproducibility. Secondly, publications older than ten years were generally omitted, unless they were seminal works that provided essential theoretical grounding. Finally, studies that did not directly address one or more of the three focal themes—risk communication, disaster preparedness, or behavioral change—were removed. Articles focusing solely on technical aspects of disaster management, such as infrastructure or engineering solutions, without a social or behavioral lens, were also excluded.

The literature selection process followed a multi-step procedure to ensure transparency and minimize bias. The initial search results were first screened based on titles and abstracts. This step aimed to eliminate clearly irrelevant studies before undertaking a more detailed review. In the second step, the full texts of potentially eligible articles were retrieved and reviewed to determine their compliance with the inclusion criteria. During this stage, particular attention was paid to methodological rigor, clarity of findings, and relevance to the research questions. Studies that provided substantial empirical or theoretical contributions to understanding how communication affects disaster-related behavior were selected for inclusion.

To ensure reliability and consistency, each article was independently reviewed by at least two researchers. Discrepancies in the selection process were resolved through discussion and consensus, with occasional input from a third reviewer when disagreements could not be reconciled. This peer-review approach within the review process helped enhance objectivity and reduced the risk of selection bias.

In synthesizing the findings, a narrative approach was adopted due to the heterogeneity of the studies in terms of objectives, methodologies, and contexts. The diversity in study designs and variables examined precluded a meta-analytic synthesis. Instead, findings were categorized thematically according to recurring topics such as communication channels, trust and credibility, participatory practices, and cultural adaptation. These themes served as the foundation for further discussion and analysis in subsequent sections of the review.

Overall, this methodology was designed to produce a balanced and comprehensive synthesis of the current evidence on risk communication and behavioral responses in disaster contexts. By applying a structured search strategy, well-defined criteria for inclusion and exclusion, and a



rigorous selection process, the review aspires to provide valuable insights that are both academically robust and practically relevant for policymakers, researchers, and practitioners involved in disaster risk reduction.

## RESULT AND DISCUSSION

The findings of this narrative review are organized into four major thematic categories that emerged from the literature: media and communication platforms, behavioral change among communities, the role of trust and community engagement, and global comparative perspectives. Each of these domains sheds light on how risk communication strategies are implemented and received across varying disaster contexts, highlighting best practices, persistent challenges, and contextual specificities that shape public response.

### Media and Communication Platforms

Research consistently reveals that the effectiveness of risk communication varies considerably across different media platforms. Traditional media, including television and radio, continue to serve as important channels for disseminating emergency information to large populations rapidly. According to Lokmic-Tomkins et al. (2023), these channels are particularly effective in reaching audiences that lack internet access or digital literacy. However, their one-way nature often limits interactivity, making it difficult for users to seek clarification or provide feedback in real time.

In contrast, digital media such as social media platforms, mobile applications, and immersive technologies like virtual reality (VR) provide more dynamic and interactive communication environments. Backfried et al. (2016) argue that social media enables bidirectional dialogue, allowing the public to not only receive updates but also engage in conversations, ask questions, and share localized experiences. This participatory dimension strengthens both the reach and relevance of disaster communication efforts.

The integration of new technologies further enhances public understanding and preparedness. De Fino et al. (2023) demonstrate that mobile applications designed with geolocation features can significantly improve public awareness by offering real-time alerts tailored to specific regions. These tools provide users with direct access to actionable information, such as evacuation routes or shelter locations. Additionally, virtual reality training simulations offer experiential learning opportunities that deepen understanding of disaster scenarios without exposing individuals to actual risk. Users who undergo VR-based disaster drills report greater confidence and clarity in emergency procedures, underscoring the potential of immersive technologies in enhancing risk literacy.

## Behavioral Change Among Communities

One of the central goals of risk communication is to influence behavior in ways that reduce vulnerability and enhance preparedness. Studies emphasize the importance of message clarity, emotional appeal, and community involvement as key drivers of behavioral change. Haque et al. (2021) found that messages conveyed in plain and accessible language are more likely to be understood, retained, and acted upon. Complex or technical jargon, on the other hand, can alienate audiences and hinder effective response.

Narrative and emotionally charged messages have also been found to be more impactful than purely informational content. Mendes et al. (2019) highlight how storytelling formats that evoke empathy or fear can trigger stronger social responses and motivate individuals to take precautionary measures. Similarly, Ross and Jaenichen (2021) observe that emotionally resonant narratives improve message retention and influence long-term behavioral change, particularly when combined with visual elements and real-life case studies.

These findings suggest that successful risk communication must go beyond the mere transfer of data; it must consider the psychological and social dimensions of message reception. By crafting messages that are not only informative but also engaging and emotionally relevant, communicators can foster deeper connections with their audiences and encourage proactive behavior.

## The Role of Trust and Community Engagement

Trust in authorities is a pivotal factor in determining how communities respond to disaster-related messages. According to Haque et al. (2021), populations with high trust in government and emergency services are more likely to accept and act upon official warnings. Trust functions as a psychological filter, shaping the perceived credibility of information and the urgency of the recommended actions. Conversely, in contexts where historical grievances, misinformation, or institutional failures have eroded public trust, communication efforts often face skepticism and resistance (Benzian et al., 2021).

Building trust requires not only consistent and transparent messaging but also the meaningful inclusion of community voices in the communication process. Community engagement fosters a sense of ownership and legitimacy, transforming citizens from passive recipients of information into active participants in risk management. Backfried et al. (2016) report that locally-led communication initiatives that incorporate community members in message development and dissemination are more effective in building resilience. These programs often align more closely with local needs, cultural norms, and language preferences, thereby increasing their impact and acceptance.

Furthermore, participatory communication enhances social capital and mutual support networks, both of which are critical during and after disasters. When communities are empowered to share knowledge and collaborate on preparedness strategies, they are better positioned to respond collectively and recover more quickly. This underscores the necessity of integrating community perspectives into formal risk communication frameworks.

## Global Comparative Perspectives

Comparative analyses reveal substantial differences in how risk communication is conceptualized and implemented in high-income versus low- and middle-income countries. In developed nations, communication strategies tend to emphasize evidence-based messaging, high-tech delivery systems, and centralized coordination. For instance, during the COVID-19 pandemic, countries like Germany and South Korea utilized data-driven dashboards, mobile contact tracing applications, and coordinated media briefings to inform the public (Schweizer & Renn, 2019; Benzian et al., 2021). These efforts were generally supported by robust public health infrastructure and high levels of institutional trust.

In contrast, many developing countries face infrastructural limitations that necessitate more context-specific and community-based approaches. Faisal et al. (2021) illustrate how participatory models in Bangladesh, which involve local stakeholders in risk assessment and message crafting, yield better outcomes in terms of community engagement and preparedness. Such approaches leverage indigenous knowledge systems and build upon existing social structures to improve message relevance and dissemination.

One of the key lessons from disaster-prone regions is the centrality of inclusivity and co-production in communication processes. Rabbani and Cotton (2025) argue that communication strategies that prioritize dialogue, adaptability, and mutual learning are more likely to succeed in heterogeneous and high-risk environments. These approaches help bridge the information gap between institutions and citizens, reducing the likelihood of miscommunication and enhancing compliance with safety directives.

Furthermore, culturally tailored communication tools, such as the use of local languages, symbols, and storytelling traditions, have proven effective in diverse settings. In the Pacific Islands, for example, McNaught et al. (2014) found that embedding risk messages within traditional narratives helped convey complex information in accessible and memorable ways. Such strategies not only improve comprehension but also resonate emotionally with local audiences, thereby strengthening behavioral change and resilience.

In sum, while technological sophistication is a hallmark of risk communication in the Global North, the Global South demonstrates the effectiveness of participatory and culturally sensitive approaches. Both models offer valuable insights, and their integration may yield hybrid frameworks that combine the strengths of top-down efficiency with bottom-up engagement. These global perspectives underscore the importance of flexibility, inclusivity, and responsiveness in crafting risk communication strategies that are effective across diverse socio-political landscapes.

Together, the findings from this review emphasize that the success of risk communication in disaster contexts hinges on more than just information delivery. It involves understanding the media ecosystem, crafting psychologically impactful messages, building trust, and fostering genuine community participation. As disaster risks continue to escalate globally due to climate change, urbanization, and socio-economic inequality, the importance of refining these communication strategies becomes ever more urgent. Through this review, a foundation has been



laid for further exploration of integrated, evidence-based, and culturally responsive approaches to disaster risk communication.

This discussion analyzes the key findings of this narrative review in light of existing risk communication theories, highlighting systemic factors that contribute to success or failure in disaster contexts and exploring their implications for future policy and research. The discussion is structured around emergent themes from the review, including the role of trust and community engagement, comparative approaches in developed and developing countries, case study insights, and structural enablers and constraints. It also outlines potential pathways for evidence-based and inclusive policy formulation.

One of the most salient findings of this review is the critical role of public trust in governmental and institutional authorities, a cornerstone of risk communication theory. As Rodriguez et al. (2022) and Benzian et al. (2021) suggest, trust mediates the reception and interpretation of risk messages. The review reaffirms that when populations have high confidence in the information source, they are more likely to follow recommended actions. This supports the theoretical assertion by Schweizer and Renn (2019) that trust is not ancillary but foundational: effective risk communication is as much about the message as it is about the relationship between the sender and the receiver. Failures in this relationship can undermine even the most technically accurate information.

Community engagement emerged as another decisive factor in disaster preparedness and behavioral change. Participatory approaches enable the co-creation of messages that resonate with community values, leading to higher compliance and resilience (Rabbani & Cotton, 2025). This supports the dialogic model of risk communication, which views communication as a two-way process involving mutual learning and adaptation. It also challenges top-down models, which, though efficient in message control, often neglect local knowledge and reduce message uptake. These findings echo Rodriguez et al. (2022), who advocate for integrating feedback loops in communication strategies to enhance efficacy.

The comparative analysis between developed and developing countries revealed important distinctions in strategy and implementation. Developed nations tend to rely on high-tech, science-based, centralized approaches that assume high levels of public trust and digital access (Kim et al., 2022). Meanwhile, in the Global South, risk communication is more often embedded in local contexts, prioritizing oral traditions, community networks, and vernacular knowledge. Schweizer and Renn (2019) argue that risk communication cannot be universal; this review provides empirical support for that claim, suggesting that localization is not just desirable but necessary for effectiveness.

Case studies from countries with high disaster vulnerability reinforce the necessity of contextual adaptation. Faisal et al. (2021) show that in Bangladesh, participatory strategies lead to more robust mitigation outcomes, affirming that communication must be continuous, inclusive, and educational. The embeddedness of communication in community life—rather than its imposition from outside—enhances both trust and responsiveness. These insights validate the expansion of risk communication theory to accommodate cultural, socioeconomic, and political dynamics, recognizing that risk is perceived and managed differently across societies.

Systemic factors significantly shape the implementation and impact of risk communication. Trust, as discussed, stems from institutional transparency, message consistency, and a track record of effective governance (Haque et al., 2021; Lokmic-Tomkins et al., 2023). Where these attributes are lacking, communication efforts falter. Community engagement requires platforms for dialogue and decision-making authority for local actors, but such mechanisms are often underdeveloped in centralized disaster management systems (Volenzo & Odiyo, 2019). Similarly, resource availability—financial, technological, and human—determines a community's capacity to disseminate and act on risk information. Kim et al. (2022) emphasize that limited access to modern communication tools in rural areas obstructs preparedness, while Parkoo et al. (2022) link resource instability to the ineffectiveness of mitigation strategies.

Government policy also plays a pivotal role. Bubeck et al. (2024) found that participatory policies support better risk outcomes than technocratic ones. Policies that mandate inclusive planning, support local training, and facilitate horizontal coordination among stakeholders are more successful. Backfried et al. (2016) further underscore that without explicit policy frameworks to support community involvement, engagement remains ad hoc and dependent on individual initiative. These findings highlight that political will, institutional design, and inter-agency collaboration are critical components of systemic support.

Cultural context further shapes how risk messages are received and interpreted. Messages that fail to align with local norms, values, or linguistic practices often lack salience. Bubeck et al. (2024) and McNaught et al. (2014) show that storytelling, symbolism, and cultural idioms enhance message recall and credibility. Thus, communication strategies must be culturally sensitive and contextually grounded. This aligns with findings from this review, which emphasize that cultural competence is not an optional add-on but a fundamental component of risk communication in diverse societies.

The implications of these findings for policy formulation are substantial. First, trust must be institutionalized through transparent, consistent, and accountable communication. Parkoo et al. (2022) suggest that communication policies should not only aim to inform but also empower communities through participatory governance and shared decision-making. This could involve regular public briefings, inclusive scenario planning, and transparent data-sharing platforms.

Second, community engagement should be formalized through institutional mechanisms. Lokmic-Tomkins et al. (2023) argue for community forums, local risk committees, and participatory training modules as effective conduits for embedding risk communication in community routines. Policies must allocate resources for capacity building and ensure that community voices influence strategy development and resource allocation.

Third, evidence-based innovation should guide communication design. Fino et al. (2023) demonstrate that mobile applications and VR simulations can enhance understanding and retention of risk information. These technologies should be integrated into national risk communication plans, with investment in digital infrastructure and digital literacy programs to ensure equitable access. Volenzo & Odiyo (2019) advocate for tech-enabled platforms that accommodate two-way communication and real-time feedback.

Fourth, localization of communication strategies is essential. Backfried et al. (2016) argue that tailoring messages to specific linguistic, cultural, and socioeconomic contexts increases relevance and efficacy. Kim et al. (2022) further emphasize that adaptive strategies—those that evolve with local feedback—outperform rigid, top-down approaches. Policymakers should prioritize local consultations and adapt message formats to suit diverse audiences.

Finally, multi-stakeholder collaboration is necessary for inclusive and sustained risk communication. Bubeck et al. (2024) note that inter-agency coordination, cross-sector partnerships, and community alliances enrich the planning and execution of communication strategies. Policy frameworks should institutionalize collaborative platforms to ensure coherence, reduce redundancy, and enhance coverage.

Despite these insights, limitations remain in the current literature. Much of the empirical evidence is fragmented, with limited longitudinal data to assess the sustainability of communication impacts. Studies often focus on single events or locations, restricting generalizability. Moreover, there is a dearth of research on how intersecting vulnerabilities—such as disability, gender, or socioeconomic status—influence the reception and response to risk communication. These gaps constrain the development of comprehensive, equity-oriented communication strategies.

Future research should address these limitations by employing mixed-method and longitudinal designs, exploring underrepresented contexts, and examining the intersectionality of vulnerability. It should also assess the scalability of community-based innovations and test the efficacy of emerging technologies in diverse settings. The evolving nature of risk in a changing climate, coupled with rapid technological advancement, necessitates continuous innovation and critical evaluation in risk communication practice and scholarship.

## CONCLUSION

This narrative review underscores the critical role of inclusive, trust-based, and context-sensitive risk communication in enhancing disaster preparedness and community resilience. The analysis revealed that message clarity, emotional resonance, and interactive platforms significantly influence behavioral change, particularly when communication is rooted in trust and community engagement. Findings also demonstrate that while digital technologies such as mobile apps and virtual reality enhance message delivery and comprehension, their effectiveness is contingent upon accessibility and integration with local cultural contexts. Moreover, the comparison between communication strategies in developed and developing countries emphasizes the value of localized, participatory approaches over rigid, top-down models.

The urgency of improving risk communication is amplified by increasing disaster frequency and complexity driven by climate change and global inequality. Effective communication strategies must therefore be embedded in policy frameworks that prioritize transparency, local empowerment, and multi-stakeholder collaboration. Governments should institutionalize community participation, invest in digital infrastructure, and design adaptive policies that reflect socio-cultural realities.

To address current research limitations, future studies should focus on underrepresented regions, longitudinal impacts, and intersectional vulnerabilities. Mixed-method approaches can offer deeper insights into behavioral outcomes and communication sustainability. The integration of emotional, participatory, and evidence-based communication techniques, supported by strong institutional trust, stands as a central strategy in mitigating risk and fostering preparedness.

Ultimately, strengthening communication systems is not merely a technical task but a governance challenge that demands holistic, equity-oriented, and adaptive interventions to ensure that no community is left behind in the face of disaster.

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