



Review Article

## Collective Memory in Disaster Management: A Thematic Synthesis of International Studies

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### Abstract

Collective memory plays a crucial role in supporting disaster risk management by strengthening community preparedness culture. This study aims to analyze the contribution of collective memory to disaster management through a thematic synthesis of international studies. The method used is a literature review of ten selected journals published between 2020 and 2025. The results show that collective memory manifests in various forms, such as storytelling, monuments, digital archives, memorial facilities, and community activities. These forms are effective when connected to concrete actions, educational programs, and policy planning. Practices in Japan, Germany, and Europe demonstrate the success of collective memory in supporting preparedness strategies. However, challenges arise when memory is not updated to address new risks, its meaning becomes fragmented, or it remains merely symbolic without concrete action. These findings highlight the need for policies that integrate collective memory into risk reduction, update narratives to remain relevant, and leverage technology for adaptation. This study is limited to literature analysis and has yet to capture the complexity of practices at the community level directly.

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## INTRODUCTION

Collective memory has long been recognized as a key element in supporting disaster risk management across various parts of the world. Research in Japan shows that collective memory is transmitted through a combination of storytelling, monuments, digital archives, and annual commemorations, which directly strengthen community resilience against tsunami risks (Pisa, 2024). A similar pattern is seen in Europe, where a preparedness culture built on local cultural values and shared experiences is more effective than purely top-down approaches (Appleby-Arnold et al., 2021). In New Zealand, local disaster memory fosters active citizen participation in emergency response groups and community centers, strengthening social networks and collective action (Das et al., 2024). These studies affirm the role of collective memory as a critical pillar in shaping a preparedness culture grounded in real-life community experience.

However, several studies also reveal serious challenges in maintaining the relevance and effectiveness of collective memory. In Montserrat, collective memory serves more as a means of trauma recovery or cultural identity, rather than as an active tool to support preparedness (Monteil et al., 2020). In Chile, collective memory has become a political arena, blurring the meaning and direction of preparedness messages (Funtealba, 2021). Additionally, global studies highlight the weak integration of collective memory into formal policies, causing past lessons to fail as a basis for strategic decision-making (Shmueli et al., 2021). This raises a fundamental question: to what extent does collective memory truly persist and function in supporting disaster risk management?

Collective memory also shows varying dynamics across regions, emphasizing the need for cross-case synthesis. In Germany, memories of the 1962 flood laid the foundation for flood control policies, but challenges arise in maintaining its relevance to new risks, such as those driven by climate change (Guttry & Ratter, 2022). Memorial facilities in Tohoku, Japan, effectively educate the public about disaster risks, although their contribution to strengthening local social networks remains limited



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(Zhang & Izumi, 2024). Meanwhile, elderly groups in Chile can apply collective memory to past risks but struggle to cope with new threats like heatwaves or pandemics (Sandoval-Díaz et al., 2023). A persistent gap is the lack of comprehensive studies comparing these diverse contexts to formulate effective patterns for integrating collective memory into adaptive disaster management strategies.

This study aims to analyze and synthesize findings from ten international studies to address the question of how collective memory continues to exist, function, and play a role in supporting disaster risk management across countries. This research seeks to fill the gap by linking previous study results with current needs to develop a collective memory strategy that not only endures as a symbol or historical narrative but truly drives concrete action in risk reduction. By uniting findings across countries, this paper offers novelty by mapping patterns of success and challenges in collective memory activation and recommending directions for integrating collective memory into policy, local culture, and technological innovation to better adapt to contemporary risks.

## METHOD

This study employs a literature review approach, focusing on thematic synthesis of ten international journals published between 2020 and 2025. The journals were selected based on inclusion criteria: indexed in reputable international databases (such as Scopus), addressing the topic of collective memory in the context of disaster management, and available through open access for in-depth review. The journal search process was conducted through online database platforms such as ScienceDirect, MDPI, and other international publishers.

The analysis was carried out using a thematic synthesis approach, categorizing findings from each journal into themes: forms of collective memory, mechanisms of memory transmission, the function of memory in disaster management, and challenges in integrating collective memory into policy and practice. Each finding was compared and organized to map patterns of both the successes and weaknesses of collective memory in supporting disaster risk reduction across countries. Additionally, the author provides analytical insights to link the synthesis results with the needs of adaptive risk management strategies for contemporary risks.

**Table 1.** Literature review of previous research (2020-2025)

No.	Author(s)	Title	Year	Source
1	Esteban	Collective engagement as a navigational framework for urban resilience	2025	ScienceDirect
2	Pisa	Understanding memory transmission in disaster risk reduction practices: A case study from Japan	2024	ScienceDirect
3	Das, et al.	Fostering civic participation and collective actions for disaster risk reduction	2024	ScienceDirect
4	Zhang & Izumi	The role of disaster memorial facilities in disaster risk reduction	2024	MDPI
5	Sandoval-Díaz, et al.	Collective memories and previous experiences of older people in the face of disaster risk processes	2023	Frontiers
6	Guttry & Ratter	Expiry date of a disaster: Memory anchoring and the storm surge 1962 in Hamburg, Germany	2022	ScienceDirect
7	Appleby-Arnold et al.	Developing a “culture of disaster preparedness”: The citizens’ view	2021	ScienceDirect
8	Shmueli, et al.	Collaborative planning principles for disaster preparedness	2021	ScienceDirect
9	Fuentealba	Divergent disaster events? The politics of post-disaster memory on the urban margin	2021	ScienceDirect
10	Monteil, et al.	Remembering, Forgetting, and Absencing Disasters in the Post-disaster Recovery Process	2020	Springer

## RESULT AND DISCUSSION

Collective memory in the context of disaster management is reflected in various forms and transmission channels developed across different countries. In Japan, practices such as storytelling, the construction of monuments, digital archives, and annual commemorations serve as key mechanisms for preserving collective memory of tsunami and earthquake events. The combination of symbolic elements and actual narratives is believed to strengthen community resilience against future risks (Pisa, 2024). In Germany, memories of the major 1962 flood are maintained through memory anchoring strategies such as street names, monuments, and the use of archives and visual documentation, which underpin spatial planning and flood control policies (Guttry & Ratter, 2022). Similarly, in Europe, local cultural values are integrated through workshops, community training, and citizen-based memorial events to strengthen social bonds and a culture of preparedness (Appleby-Arnold et al., 2021).

In Pacific regions like New Zealand, collective disaster memory is maintained through intergenerational learning and community action. Studies show that shared experiences of earthquakes and tsunamis have led to the formation of community centers and local emergency response groups, serving as the foundation for social networks and triggering citizen solidarity (Das et al., 2024). Such mechanisms demonstrate that memories of past disasters function not only as historical records but also as adaptive learning sources that strengthen collective action in the present. Memory transmission is not merely symbolic but can be realized through participatory and structural activities. This proves that embedding memory within the social sphere can foster deeper and more sustainable awareness of recurring risks.

The contribution of collective memory to policy and community preparedness is evident in several studies that highlight the importance of state facilitation. In Japan, memorial facilities serve a dual function as public education centers and as platforms for intergenerational transmission of disaster experiences (Zhang & Izumi, 2024). Meanwhile, in European cities, the presence of historical symbols integrated into citizens' daily activities reinforces a shared sense of responsibility for safety (Appleby-Arnold et al., 2021). This approach contrasts with more administrative, top-down models that fail to accommodate residents' emotional and cultural dimensions. Esteban's (2025) study shows that horizontal collective engagement strengthens community attachment to risk reduction strategies. Thus, policies that adopt participatory approaches are more effective in revitalizing collective memory as a pillar of preparedness culture.

However, not all contexts demonstrate effective collective memory activation. The study in Montserrat shows that post-disaster memory plays a greater role in trauma recovery and cultural identity reinforcement rather than serving as a practical preparedness tool (Monteil et al., 2020). In Chile, disaster memorialization has become a site of political contestation, where the meaning of collective memory is disputed between state and citizen narratives (Fuentelba, 2021). This shows that when the state fails to build inclusive narratives, memory can become fragmented and lose its function in supporting risk mitigation. At the global level, Shmueli et al. (2021) reveal the persistent weakness in integrating past lessons into policy planning documents, both at city and national levels. As a result, collective memory often remains a symbol rather than a practical knowledge resource for the future.

The sociopolitical dimension of collective memory is a crucial aspect that determines its effectiveness. When symbols, commemorations, and event narratives are controlled by state power or dominant groups, the risk of meaning narrowing or historical distortion becomes greater (Fuentelba, 2021). In Montserrat, the focus on memory as cultural identity without integration into formal policy also leads to minimal utilization of memory for adaptive preparedness (Monteil et al., 2020). In this context, it is essential to have dialogue spaces among social actors to shape more inclusive and relevant collective narratives. Alternative narratives from communities should be supported through community media, the arts, and formal education to compete with often exclusive dominant narratives. This approach can transform collective memory into a space of empowerment, not merely symbolic consumption.

Another challenge arises from the ability of collective memory to adapt to new types of risks. A study in Chile shows that elderly groups are still effective in using collective memory to address past risks like earthquakes but are less relevant when facing new risks such as heatwaves or pandemics (Sandoval-Díaz et al., [2023](#)). In Germany, the public memory focus on historical risks like the 1962 flood has led to neglecting threats driven by climate change (Guttry & Ratter, [2022](#)). This indicates that updating the content and forms of memory is crucial to remain contextual. Without revitalization, collective memory risks becoming frozen and losing its urgency in the contemporary risk landscape. Therefore, dynamic and predictive approaches in the design of memory programs become indispensable.

The use of digital technology offers significant potential to update and disseminate collective memory across generations and regions. Governments and communities can leverage online archives, multimedia documentation, and interactive educational platforms to replant disaster narratives in language relevant to younger generations. Pisa ([2024](#)) highlights the importance of community involvement in managing digital content to ensure it remains representative and inclusive. On the other hand, technology can overcome the physical limitations of monuments and symbols, especially in remote or post-disaster areas. However, technological integration must be accompanied by adequate digital literacy so that collective memory is not only documented but also understood and internalized.

To make collective memory more functional in disaster risk reduction, cross-sector collaboration is needed between governments, communities, academics, and cultural actors. Esteban ([2025](#)) emphasizes the importance of a collective approach that not only relies on the government but also positions citizens as active agents in shaping resilience strategies. This approach can foster a sense of ownership over memory, ultimately strengthening social resilience and local preparedness. Memorial facilities and community activities should be designed not only as places of remembrance but also as spaces for learning and risk-based decision-making. When developed collaboratively, collective memory can become a transformative tool in disaster risk management.

Thus, the main conclusion of this synthesis is that collective memory holds great potential to strengthen disaster risk management, as long as it does not remain merely symbolic or ceremonial. Historical narratives, monuments, annual commemorations, and digital technology need to be linked to concrete actions such as education, training, and spatial planning policies. Governments are called upon to open participatory spaces, update memory content, and harmonize local narratives with national policies to keep collective memory alive and relevant. Challenges such as meaning fragmentation, the politicization of memory, and evolving risks require innovative, adaptive, and inclusive approaches. With collaborative and participatory approaches, collective memory can transform into a strategic force underpinning a culture of preparedness and community resilience against disasters.

## CONCLUSION

This study shows that collective memory plays an important role in supporting disaster risk management, especially when activated through integration into policy, citizen participation, and the use of technology. The findings reveal that various forms of collective memory, such as storytelling, monuments, digital archives, and memorial facilities, can contribute to fostering a preparedness culture, particularly when connected to concrete actions and educational programs. However, collective memory risks losing its function if it is not updated to address new threats, if its meaning becomes fragmented within sociopolitical dynamics, or if it remains at a symbolic level without practical implementation. Furthermore, memory can be manipulated or monopolized by power if it is not accompanied by inclusive participatory spaces. Therefore, disaster risk reduction policies need to be designed to harmonize various collective memory narratives, update their content to suit contemporary challenges, and encourage intergenerational engagement in mitigation efforts.

This study has limitations as it is solely based on a literature review of ten journals, without involving field data or in-depth interviews, and thus does not fully capture the complexity of practices at the local level. Additionally, the research focuses mostly on natural disasters and has not thoroughly

explored non-natural disaster contexts, such as pandemics. Future research is recommended to examine community-based collective memory implementation through empirical studies, further explore the use of digital technology for memory transmission and compare the role of collective memory across different types of disasters. This step is crucial to strengthen the function of collective memory as the foundation for adaptive, inclusive, and sustainable risk reduction strategies.

## Declarations

### Ethics approval and consent to participate

Not applicable.

### Consent for publication

The author has given approval for the publication of this manuscript.

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