

## Strengthening Disaster Literacy and Psychosocial Support Through Participatory Community Learning Centers in Post-Disaster Areas

### Memperkuat Literasi Bencana dan Dukungan Psikososial Melalui Pusat Pembelajaran Partisipatif Berbasis Masyarakat di Daerah Pasca-Bencana

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**Abstract:** Disasters create multidimensional impacts that affect not only physical conditions but also the social, educational, and psychological well-being of communities. In many post-disaster areas, recovery programs tend to prioritize infrastructure rehabilitation, while disaster literacy and psychosocial support remain underemphasized. Community Learning Centers have strategic potential as community-based educational spaces that can support disaster preparedness and emotional recovery. Therefore, this study aims to strengthen disaster literacy and psychosocial support through a participatory approach implemented in Community Learning Centers in post-disaster areas of Kampung Darussalam, Langkat Regency. This study employed a Research-Based Community Service approach integrated with Participatory Action Research (PAR). Data were collected through observation, interviews, Focus Group Discussions (FGD), documentation, and pre-test and post-test assessments involving community members, children, and Community Learning Center managers. The intervention included disaster literacy education, participatory learning activities, trauma healing programs, and community-based counseling. The findings indicate significant improvements in disaster literacy, community participation, emotional stability, and social interaction among participants. The integration of disaster education and psychosocial support within participatory learning activities contributed to strengthening community resilience and adaptive capacity in post-disaster contexts. This study concludes that participatory Community Learning Centers can function effectively as community resilience hubs that support integrated learning, recovery, and empowerment in disaster-prone communities.

**Keywords:** Disaster Literacy; Psychosocial Support; Community Participation; Community Learning Centers; Post-Disaster Recovery; Community Resilience

**Abstrak:** Bencana menimbulkan dampak multidimensi yang tidak hanya memengaruhi kondisi fisik, tetapi juga kesejahteraan sosial, pendidikan, dan psikologis masyarakat. Di banyak wilayah pascabencana, program pemulihan cenderung memprioritaskan rehabilitasi infrastruktur, sementara literasi bencana dan dukungan psikososial masih kurang mendapat perhatian. Pusat Pembelajaran Masyarakat memiliki potensi strategis sebagai ruang pendidikan berbasis masyarakat yang dapat mendukung kesiapsiagaan bencana dan pemulihan emosional. Oleh karena itu, penelitian ini bertujuan untuk memperkuat literasi bencana dan dukungan psikososial melalui pendekatan partisipatif yang diterapkan di Pusat Pembelajaran Masyarakat di wilayah pasca-bencana Kampung Darussalam, Kabupaten Langkat. Penelitian ini menggunakan pendekatan Pengabdian Masyarakat Berbasis Penelitian yang diintegrasikan dengan Penelitian Tindakan Partisipatif (PAR). Data dikumpulkan melalui observasi, wawancara, Diskusi Kelompok Terfokus (DKT), dokumentasi, serta penilaian pra-tes dan pasca-tes yang melibatkan anggota masyarakat, anak-anak, dan pengelola Pusat Pembelajaran Masyarakat. Intervensi yang dilakukan meliputi pendidikan literasi bencana, kegiatan pembelajaran partisipatif, program penyembuhan trauma, dan konseling berbasis masyarakat. Temuan menunjukkan peningkatan yang signifikan dalam literasi bencana, partisipasi masyarakat, stabilitas emosional, dan interaksi sosial di antara para peserta. Integrasi pendidikan bencana dan dukungan psikososial dalam kegiatan pembelajaran partisipatif berkontribusi pada penguatan ketahanan masyarakat dan kapasitas adaptasi dalam konteks pasca-bencana. Penelitian ini menyimpulkan bahwa Pusat Pembelajaran Masyarakat yang bersifat partisipatif dapat berfungsi secara efektif sebagai pusat ketahanan masyarakat yang mendukung pembelajaran terpadu, pemulihan, dan pemberdayaan di komunitas yang rawan bencana.

**Kata kunci:** Literasi Bencana; Dukungan Psikososial; Partisipasi Masyarakat; Pusat Pembelajaran Masyarakat; Pemulihan Pasca-Bencana; Ketahanan Masyarakat



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## Introduction

Disasters pose multidimensional challenges that extend beyond physical destruction, significantly affecting social structures, educational access, and the psychological well-being of affected communities. In disaster-prone regions such as flood-affected areas in Indonesia, post-disaster recovery efforts often prioritize infrastructure rehabilitation, while critical aspects such as disaster literacy and psychosocial recovery remain underemphasized. Disaster literacy, which encompasses the ability to understand risks, implement mitigation strategies, and respond effectively during emergencies, is a key determinant of community resilience (Widodo et al., 2021). In parallel, psychosocial support is essential in addressing trauma, restoring emotional stability, and strengthening social cohesion, particularly among vulnerable groups such as children and low-education communities (Kurniawan & Lestari, 2022).

Empirical conditions in flood-prone areas, such as Kampung Darussalam in Langkat Regency, North Sumatra, illustrate these challenges. Recurrent flooding has caused significant disruptions to community life, affecting social, economic, and educational aspects. Field observations indicate that approximately 70% of community members have never participated in disaster preparedness education, while around 60% lack family-level preparedness plans. In addition, local Community Learning Centers have not yet been equipped with disaster risk maps, evacuation modules, or structured psychosocial support programs. As a result, communities tend to respond reactively during disasters, demonstrating low adaptive capacity and increased vulnerability.

In this context, Community Learning Centers hold strategic potential as community-based non-formal education institutions. Community Learning Centers can function not only as literacy centers but also as spaces for empowerment, learning, and post-disaster recovery. Previous studies have shown that integrating disaster education into community-based learning significantly improves awareness and preparedness (Siregar et al., 2024). Furthermore, psychosocial interventions delivered through educational platforms have been proven effective in supporting emotional recovery and rebuilding social interaction (Nugraha & Putri, 2021). The participatory approach has also been identified as an effective method in enhancing community ownership and sustainability of disaster programs (Putra et al., 2024).

However, several critical limitations remain in existing studies. First, disaster literacy programs are often implemented in a fragmented manner, focusing primarily on cognitive knowledge without integrating psychosocial recovery in a structured way (Hidayat et al., 2022). Second, although Community Learning Centers have significant potential, their role in post-disaster contexts remains underutilized, particularly as centers for disaster education and psychosocial support (Rahmawati et al., 2023). Third, participatory approaches are frequently limited to community involvement as program beneficiaries rather than active co-creators, resulting in limited contextual relevance and sustainability. Additionally, previous studies rarely incorporate locally contextualized learning tools such as risk maps, evacuation modules, and community-based psychosocial guidelines within Community Learning Center settings.

To address these gaps, this study aims to strengthen community-based disaster literacy and psychosocial support through a participatory approach implemented in Community Learning Centers as the primary intervention platform. The approach emphasizes active community involvement, the development of context-based disaster literacy tools (such as local risk maps, evacuation modules, and infographics), and structured psychosocial support programs integrated into Community Learning Center activities. By positioning Community Learning Centers as community resilience hubs, this study seeks to enhance both cognitive and socio-emotional capacities of disaster-affected communities.

The scientific novelty of this study lies in the development of an integrative and participatory model that combines disaster literacy, psychosocial support, and community empowerment within a Community Learning Center-based framework. Unlike previous studies that treat these components separately, this research offers a holistic, locally contextualized, and sustainable approach. Furthermore, the integration of community-based learning tools and participatory design strengthens the role of Community Learning Centers as centers for post-disaster recovery and resilience building. Therefore, this study contributes both theoretically to community-based disaster management and practically to the optimization of Community Learning Centers in post-disaster areas.

## Methods

This study employed a Research-Based Community Service Approach integrated with Participatory Action Research (PAR) to strengthen disaster literacy and psychosocial support through Community Learning Centers. This approach combines systematic research processes with community-based interventions, allowing the study to generate both empirical findings and practical impacts. PAR was selected due to its emphasis on active community involvement in identifying problems, implementing solutions, and evaluating outcomes, which is particularly relevant in post-disaster contexts (Putra et al., 2024). The study adopted a participatory qualitative design supported by descriptive quantitative data. The intervention was centered in Darussalam Community Learning Center, located in Kampung Darussalam, Langkat Regency, a flood-prone area significantly affected by the 2025 disaster. The participants consisted of Community Learning Center managers, children, and community members actively engaged in Community Learning Center activities. This design aligns with recent studies that highlight the strategic role of Community Learning Centers as community-based learning spaces for strengthening disaster resilience and social recovery (Siregar et al., 2024; Rahmawati et al., 2023).

The implementation followed the PAR cycle, beginning with the planning stage through a needs assessment conducted using observation, in-depth interviews, and Focus Group Discussions (FGD). The findings revealed that approximately 70% of community members had never participated in disaster education, and the Community Learning Center lacked structured psychosocial support programs. These conditions indicate limited community preparedness and reinforce the need for integrated interventions within Community Learning Centers.

Based on these findings, the action stage focused on implementing Community Learning Center-based interventions, including the development of disaster literacy tools such as local risk maps, evacuation modules, and educational infographics. In addition, participatory learning activities were conducted through workshops, simulations, and group discussions to enhance community understanding and engagement. Psychosocial support programs were also provided, including trauma healing activities and community-based counseling, aimed at restoring emotional well-being and strengthening social cohesion. These interventions were designed using contextual and participatory learning principles, which have been shown to be effective in community education settings (Nugraha & Putri, 2021). During the observation stage, data were collected using multiple instruments, including pre-test and post-test to measure improvements in disaster literacy, observation sheets to assess participation levels, as well as interviews and documentation to capture community responses. The use of mixed data collection techniques enabled a more comprehensive understanding of both cognitive and socio-emotional outcomes.

The final stage involved reflection and evaluation through participatory discussions with Community Learning Center stakeholders. This process aimed to assess the effectiveness of the intervention and to refine the program for sustainability. Such reflective practices are essential in PAR, as they strengthen community ownership and ensure the continuity of the program beyond the intervention period (Putra et al., 2024). Data analysis was conducted using an interactive qualitative approach, including data reduction, data display, and conclusion drawing, while quantitative data were analyzed descriptively to identify trends in knowledge improvement. To ensure the validity of the findings, triangulation was applied across sources, methods, and time. Ethical considerations were also upheld by ensuring informed consent from participants and

maintaining a safe and supportive environment, particularly for children involved in psychosocial activities.

## Results and Discussions

The implementation of the participatory intervention through Community Learning Center Darussalam demonstrates a coherent improvement in disaster literacy and psychosocial well-being, directly addressing the gaps identified in the introduction regarding fragmented interventions and the underutilization of Community Learning Centers. The findings confirm that an integrative and participatory approach is effective in strengthening both cognitive and socio-emotional dimensions of community resilience.

From the quantitative perspective, the pre-test and post-test results show a significant increase in disaster literacy levels. Participants who initially had low understanding progressed to moderate and high levels, with approximately 75% able to identify risks, explain evacuation procedures, and demonstrate preparedness strategies. This finding directly supports the study's objective of enhancing disaster literacy through contextual tools such as risk maps, evacuation modules, and infographics, which have been proven to improve comprehension in community-based settings (Widodo et al., 2021; Siregar et al., 2024).

This improvement is strongly associated with increased community participation, which was a central issue highlighted in the introduction. Participation rates rose significantly, particularly among children and youth, indicating that participatory methods such as simulations and group discussions are effective in fostering engagement. This confirms that learning processes based on active involvement are more impactful than conventional approaches and are essential for sustainable community empowerment (Putra et al., 2024).

In line with the second focus of the study, the integration of psychosocial support within Community Learning Center activities also produced meaningful outcomes. Participants experienced reduced anxiety, improved emotional stability, and stronger social interaction. These results demonstrate that embedding trauma healing and counseling into educational activities effectively addresses the psychosocial gap often overlooked in post-disaster programs (Nugraha & Putri, 2021; Kurniawan & Lestari, 2022). More importantly, the findings reveal that the integration of disaster literacy and psychosocial support generates more comprehensive outcomes than treating them separately. This directly responds to the limitation identified in previous studies, where interventions tend to be fragmented (Hidayat et al., 2022). The combined approach enhances not only knowledge but also emotional resilience, creating a more adaptive community response to disasters.

Furthermore, the participatory approach implemented through PAR successfully transformed community members into active co-creators rather than passive beneficiaries. This strengthens program relevance and sustainability, addressing the issue of limited community ownership discussed earlier (Putra et al., 2024). As a result, Community Learning Centers evolved beyond their traditional role into community resilience hubs that integrate education, recovery, and empowerment, supporting previous findings on the strategic potential of community learning centers (Rahmawati et al., 2023). However, consistent with the methodological scope outlined earlier, this study is limited by its short intervention period and descriptive quantitative analysis. Therefore, future research is needed to examine long-term impacts and expand the model to different contexts.

## Conclusions

It can be concluded that the implementation of a participatory, Community Learning Center-based approach has proven to be effective in strengthening community disaster literacy and psychosocial well-being in post-disaster contexts. The integration of contextual disaster education tools, participatory learning activities, and structured psychosocial support programs has significantly improved both the cognitive and socio-emotional capacities of the community.

The findings indicate that community involvement plays a critical role in ensuring the relevance, effectiveness, and sustainability of the intervention. By positioning community members as active participants and co-creators, the program not only enhances knowledge and

preparedness but also fosters a sense of ownership and collective responsibility. Furthermore, the transformation of Community Learning Centers into community resilience hubs highlights their strategic potential as platforms for integrated learning, recovery, and empowerment.

This study contributes to the field of community-based disaster management by offering an integrative model that combines disaster literacy, psychosocial support, and participatory empowerment within a single framework. Such an approach addresses the limitations of fragmented interventions and provides a more holistic and sustainable solution for post-disaster recovery.

However, further research is needed to examine the long-term impacts of this model and to explore its applicability in diverse socio-cultural and disaster-prone settings. Overall, this study emphasizes the importance of optimizing Community Learning Centers as key actors in building resilient and adaptive communities.

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