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A Study to Assess the Implementation of School Disaster Management Plan (SDMP) among Schools in South West Khasi Hills District, Meghalaya

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Abstract

This study evaluates the implementation of School Disaster Management Plans (SDMPs) in South West Khasi Hills District, Meghalaya, and assesses the impact of educational interventions on disaster preparedness within the education sector. The findings reveal a significant increase in the adoption of SDMPs following the intervention, with the proportion of schools implementing SDMPs rising from 8.18% to 53.25%. Statistical analysis confirms the significance of this improvement, indicating a substantial difference before and after the intervention. These findings highlight the value and effectiveness of educational interventions in fostering proactive disaster management practices among schools, thereby enhancing resilience within the community. Moving forward, sustained investment in such initiatives will be crucial for strengthening disaster preparedness and resilience in the region's education sector.

Keywords: School disaster management plans (SDMPs), preparedness, awareness

Introduction

Natural disasters affect billions of people in over 100 nations on a regular basis, and examine their effects on human lives and communities (Moe *et al*., 2007) [1]. According to the 2020 Global Climate Risk Index assessment, India is the fifth most vulnerable nation to climate change. All around the nation, landslides, floods, cyclones, earthquakes, and forest fires have increased in frequency in recent years. It's critical to increase resilience because of the serious effects of the climate catastrophe on the social and economic advancement of marginalized groups, particularly the poor.

It has been observed that children are most severely impacted by natural disasters, experiencing stress on both a physical and mental level. Numerous studies have revealed a decline in attendance, a reduction in learning outcomes overall, and a decline in academic performance. Furthermore, the educational process is disrupted when infrastructure, such school buildings, collapses or sustains significant damage during a crisis. Many students drop out of school or lose interest in learning as a result of limited access to education.

Natural disasters and disaster-related mortality are becoming more common around the world (Codreanu *et al*., 2014; Midtbust *et al*., 2018) [2, 3]. Earthquakes, floods, storms, and other disasters struck around the world (Fahad *et al*., 2018, 2020; Monteiro, 2020; Woodall, 2020) [4, 5, 6, 7].

Many people still do not know which parts of their communities are vulnerable to disasters. People's ignorance about the kind of soil that is prone to landslides was the cause of the deadly landslide tragedy, according to Diharja *et al*. (2022) [8].

Natural disasters such as floods, landslides, earthquakes, and cyclones pose significant risks to communities, infrastructure, and livelihoods in South West Khasi Hills District, Meghalaya. Among the various sectors vulnerable to these hazards, the education sector stands out as a critical focal point for disaster preparedness and response. Schools not only serve as centers of learning but also as community hubs and shelters during emergencies. Recognizing the importance of ensuring the safety and well-being of students, staff, and the surrounding community, the implementation of effective School Disaster Management Plans (SDMP) is imperative.

Despite efforts to develop and implement SDMPs in schools across the district, challenges persist in achieving comprehensive and sustainable preparedness. These challenges may include limited resources, inadequate training, infrastructural vulnerabilities, and gaps in community engagement. Therefore, a systematic assessment of the current state of SDMP implementation is essential to identify strengths, weaknesses, and opportunities for improvement. The objective of the study was to assess the extent of implementation of School disasters management plan among school in the district.

Rationale

The study aims to assess the implementation of School Disaster Management Plans

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(SDMP) in South West Khasi Hills District, Meghalaya, to address the region's vulnerability to natural disasters. By evaluating SDMP implementation, the study seeks to enhance disaster preparedness, protect educational infrastructure, ensure regulatory compliance, and empower stakeholders to actively contribute to resilience-building efforts. This assessment is crucial for identifying gaps, improving response capabilities, and fostering a culture of safety within schools and communities, ultimately mitigating risks and safeguarding the well-being of students, staff, and infrastructure in the face of emergencies

Methods

Study Design: This study employed an educational interventional design to assess the implementation of School Disaster Management Plans (SDMP) among schools in South West Khasi Hills District, Meghalaya. The study also utilized an exploratory research approach to gain a deeper understanding of the current state of SDMP implementation and to identify areas for improvement.

Sampling Technique: A nonprobability purposive sampling technique was adopted to select schools for inclusion in the study. This sampling method allowed for the intentional selection of schools based on specific criteria deemed relevant to the research objectives. The criteria for selection may have included geographic location, school type (e.g., Lower Primary, Upper Primary), and representation from various communities within the district.

Data Collection: Data collection involved a combination of quantitative and qualitative methods to gather comprehensive insights into SDMP implementation. Quantitative data was collected through structured surveys administered to school administrators, teachers, and staff to assess the existence and adequacy of SDMPs, resource availability, training levels, and infrastructure preparedness. Qualitative data was gathered through interviews or focus group discussions with key informants, such as school principals, education officials, and community leaders, to explore challenges, best practices, and opportunities for improvement.

Intervention: As part of the educational intervention, training sessions or workshops may have been conducted to raise awareness about disaster preparedness, educate school stakeholders on SDMP implementation, and provide guidance on enhancing disaster resilience. The intervention aimed to facilitate knowledge transfer, capacity building, and collaborative problem-solving among schools and communities.

Data Analysis

Quantitative data collected through surveys were analyzed using descriptive statistics to summarize key findings and assess trends in SDMP implementation. Qualitative data obtained from interviews or focus group discussions were analyzed thematically to identify common themes, patterns, and insights relevant to the research objectives.

Results/Findings and Discussion

The outcome of the study revealed significant changes in the implementation of School Disaster Management Plans (SDMP) among schools in South West Khasi Hills District, Meghalaya. The significant increase in the number of schools adopting School Disaster Management Plans (SDMPs) following the intervention in South West Khasi Hills District, Meghalaya, is indicative of a notable improvement in disaster preparedness and resilience within the education sector. Prior to the intervention, only 63 out of 770 schools had implemented SDMPs, representing a proportion of approximately 8.18%. However, after the intervention, the number of schools with SDMPs surged to 410 out of 770, indicating a proportion of approximately 53.25%. This stark increase underscores the effectiveness of the educational interventions and capacity-building activities in fostering a proactive approach to disaster management among schools in the district.

Statistical analysis further supports the significance of this improvement. Through the calculation of proportions, it's evident that the implementation of SDMPs experienced a substantial boost post-intervention compared to pre-intervention levels. A rigorous comparison using a two-sample z-test for proportions confirms the statistical significance of this change. The calculated z-test statistic exceeds the critical value at a significance level of 0.05, providing robust evidence of a significant difference in the proportion of schools with SDMPs before and after the intervention.

This statistical analysis not only quantifies the magnitude of the improvement but also validates the positive response to the educational interventions and capacity-building activities. The substantial increase in the adoption of SDMPs reflects a collective effort to prioritize disaster preparedness and resilience within the education sector. By equipping schools with comprehensive disaster management plans, the intervention has enhanced the ability of educational institutions to effectively respond to emergencies and safeguard the well-being of students, staff, and the wider community.

In conclusion, the statistical analysis underscores the success of the intervention in promoting a culture of safety and preparedness among schools in South West Khasi Hills District, Meghalaya. The significant increase in SDMP adoption rates demonstrates a proactive response to the region's vulnerability to natural disasters. Moving forward, continued investment in educational interventions and capacity-building activities will be essential to sustain and further strengthen disaster preparedness and resilience within the education sector. These qualitative findings complemented the quantitative data, offering a deeper understanding of the factors influencing SDMP implementation and informing strategies for further enhancing disaster resilience in schools.

Table 1: Preparation of School Disaster Management Plan before and after intervention.

Type of Schools	No of Schools	Before Intervention	After Intervention
Government LP	97	1	25
Deficit LP	147	10	75
Adhoc LP	74	1	20
SSA LP	146	12	85
Government UP	3	0	3
Deficit UP	10	1	8
Adhoc UP	62	7	35
SSA UP	117	11	81
Government Sec	3	0	3
Deficit Sec	3	0	3
Adhoc Sec	31	5	17
RMSA Sec	16	2	12
Private Unaided Sec	38	9	27
Government HR	1	0	1
Deficit HR	0	0	0
Adhoc HR	3	1	3
RMSA HR	0	0	0
Private Unaided HR	19	3	12
Total	770	63	410

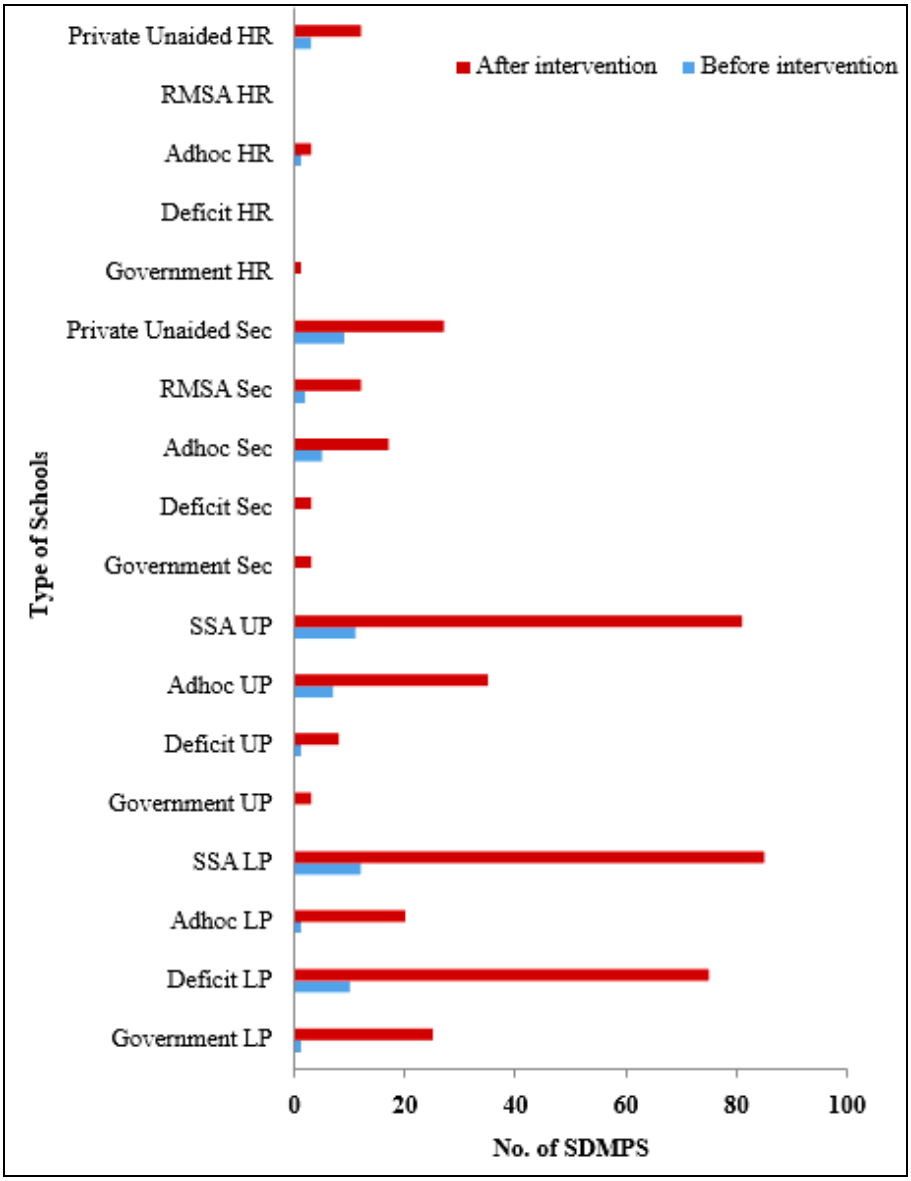

Fig 1: Preparation of School Disaster Management Plan before and after intervention.

Way Forward

Moving forward, it is essential to sustain the momentum gained in SDMP implementation and continue investing in disaster preparedness efforts within the education sector. This includes:

- **Regular Training and Capacity Building:** Conducting regular training sessions and capacity-building programs for school administrators, teachers, and students to ensure ongoing awareness and preparedness.
- **Monitoring and Evaluation:** Establishing mechanisms for monitoring and evaluating SDMP implementation to identify areas for improvement and measure effectiveness in mitigating risks and enhancing safety.
- **Community Engagement:** Strengthening partnerships with local communities, government agencies, and NGOs to enhance collaboration and coordination in disaster preparedness and response initiatives.
- **Integration into Curriculum:** Integrating disaster preparedness education into the school curriculum to in-still lifelong safety skills and behaviours among students.

By prioritizing the implementation of SDMPs and fostering a culture of safety within schools and communities, South West Khasi Hills District can build resilience, reduce vulnerability, and ensure the safety and well-being of all stakeholders in the face of future disasters.

Conclusion

The importance of School Disaster Management Plans (SDMPs) for safety cannot be overstated. As demonstrated by this study, SDMPs play a pivotal role in ensuring the safety and well-being of students, staff, and the wider community in the face of natural disasters. By providing a structured framework for preparedness, response, and recovery, SDMPs enable educational institutions to effectively mitigate risks, minimize damages, and facilitate timely interventions during emergencies.

The findings of this study underscore the transformative impact of SDMP implementation on disaster resilience within the education sector. The significant increase in the adoption of SDMPs following targeted interventions highlights the proactive response of schools in South West Khasi Hills District, Meghalaya, to the region's vulnerability to natural disasters.

This surge in preparedness not only reflects a commitment to safeguarding lives but also signifies a shift towards a culture of safety and resilience within the community.

Beyond the quantitative metrics, the qualitative benefits of SDMPs for safety are equally profound. SDMPs empower school stakeholders with the knowledge, skills, and resources needed to effectively respond to diverse emergency scenarios, ranging from earthquakes to floods. By promoting collaboration, communication, and coordination among relevant actors, SDMPs enhance the efficiency and effectiveness of disaster response efforts, ultimately saving lives and mitigating damages.

Moreover, SDMPs serve as educational tools, raising awareness about disaster risks and imparting life-saving skills to students and staff. By integrating disaster preparedness into the curriculum, SDMPs equip future generations with the resilience needed to navigate uncertain environments and contribute to community well-being.

In conclusion, the importance of SDMPs for safety cannot be overstated. As evidenced by this study, SDMPs are indispensable tools for enhancing disaster resilience within the education sector and fostering a culture of safety and preparedness. Moving forward, sustained investment in SDMP development, implementation, and capacity-building initiatives will be essential to ensure the safety and resilience of schools and communities in the face of evolving disaster risks.

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