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Enhancing Disaster and Emergency Preparedness in Schools: An Examination of Management Knowledge and Practices Among Elementary Educators

Allyza Ross U. Manuel[1], Elpedio A. Arias[2], Marlene E. Orfrecio[3], Norge D. Martinez[4], Vinus P. Java[5], Moreno B. Java, Jr[6], Cheeze R. Janito[7], Ruben L. Tagare, Jr[8]
[1,2,3,4,5,6,7,8]Institute of Sports, Physical Education, and Recreation, University of Southern Mindanao, Kabacan, Cotabato, Philippines

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ABSTRACT

Purpose of the study: This study aims to assess disaster management knowledge and practices among elementary school teachers in Selected Schools in Cotabato, Philippines, with a focus on preparedness, safety prioritization, and response strategies.

Methodology: A quantitative research design was applied using a researcher-made survey questionnaire, validated with Cronbach's alpha values (0.85 and 0.91) to ensure reliability. Simple random sampling, supported by Slovin's formula, was used to select 70 respondents from five elementary schools, with survey data gathered via school-provided teacher lists.

Main Findings: The study found that teachers possess good disaster management knowledge and are prepared with essential supplies but need a stronger focus on personal safety. Awareness is high regarding drought impacts and water conservation, but improvements are needed in early warning systems and device installations.

Novelty/Originality of this study: This study provides targeted insights into specific preparedness gaps in school disaster management, especially in early warning and response capabilities. Its findings contribute to disaster readiness by suggesting practical actions that enhance teachers' skills, align with local needs, and foster community involvement in preparedness efforts.

Corresponding Author:
Ruben L. Tagare,
Institute of Sports, Physical Education, and Recreation, University of Southern Mindanao, Kabacan, Cotabato, Philippines
Email: gadlaon@usm.edu.ph

1. INTRODUCTION

Disaster and emergency preparedness involves the systematic planning and readiness to effectively respond to emergencies, minimizing risks to life, health, and property. This preparedness includes setting protocols for immediate response, safety measures, and resource management to handle disasters such as earthquakes, floods, and fires [1]. It encompasses understanding potential hazards, creating emergency plans, and training individuals to respond effectively during crises, with an emphasis on swift action and situational awareness [2]. The importance of disaster preparedness is especially emphasized in settings with vulnerable populations, like schools, where preparation can significantly reduce risks for young children [3].

The management knowledge and practices of disaster preparedness are especially critical for teachers, particularly those in elementary education, as they are responsible for the safety of young students during emergencies. Teachers' understanding of disaster management equips them to guide students through appropriate safety measures and respond quickly in crisis situations [4]. In elementary schools, teachers need to be familiar

with specific crisis management practices suited to the developmental needs of young children, whose limited awareness and preparedness skills increase their vulnerability [5]. The presence of knowledgeable teachers can thus play a pivotal role in reducing risks and ensuring the safety of children during emergencies.

However, schools often face challenges in implementing comprehensive disaster and emergency preparedness measures. Research highlights gaps in the availability of resources, limited training for teachers, and inadequate disaster management policies, especially in resource-constrained areas [6]. Additionally, schools may lack essential early warning systems, emergency response tools, and clear communication protocols, which complicates effective crisis management [7]. These issues underscore the need for improved preparedness and the prioritization of disaster management training and resources in schools [8].

Studies on disaster and emergency preparedness in educational settings have highlighted several strategies to improve school resilience. Research has explored training programs for school personnel, the implementation of emergency drills, and the importance of developing comprehensive crisis management plans [9]. Various studies have also examined the attitudes and awareness levels of teachers regarding disaster preparedness, indicating a positive impact of regular training on school-wide preparedness [10]. Despite these findings, there remains a need for research specific to teachers' disaster management knowledge in different educational and geographical contexts.

The issue of disaster and emergency preparedness in schools can be better understood through the lens of broader social science theories such as Community Resilience Theory and Social Constructivism [11]. Community Resilience Theory emphasizes the capacity of communities—including educational institutions—to anticipate, absorb, and recover from adverse events through collective learning and preparedness [12]. In this context, teachers play a pivotal role as knowledge transmitters and frontline responders, making their preparedness critical to school and community resilience [13]. Meanwhile, Social Constructivism suggests that knowledge is socially constructed through interaction and experience, emphasizing the importance of active participation in learning processes [14]. Thus, equipping teachers with disaster management skills not only enhances their individual competencies but also fosters a shared culture of preparedness within the school. Cotabato represents a significant case study due to its geographic vulnerability to natural disasters such as earthquakes and typhoons, as well as its socio-political complexities stemming from historical conflict and underdevelopment. These factors compound the risks faced by local schools, making it essential to examine and strengthen the disaster management capacities of elementary educators in the region. Understanding the unique challenges of Cotabato allows for the development of localized, culturally relevant interventions that contribute to broader efforts in building disaster-resilient education systems in vulnerable areas.

While several studies have explored disaster preparedness in schools across various regions, there remains a notable gap in the literature specifically focusing on the disaster management knowledge and practices of elementary school teachers in Cotabato, Philippines. Most existing research either centers on urban settings or involves broader school populations without disaggregating the roles and preparedness levels of elementary educators. This oversight limits the development of locally relevant interventions tailored to the unique challenges faced by schools in rural or less-resourced areas like Cotabato. What sets this study apart is its targeted focus on elementary teachers in this specific geographic context, offering new data on an understudied group critical to school safety. The research is essential as it provides empirical evidence to support context-specific training programs, policies, and resource allocation that reflect the realities of local schools. By bridging this knowledge gap, the study aims to contribute meaningfully to disaster resilience planning, ensuring both teachers and students are better protected during emergencies.

2. RESEARCH METHOD

2.1. Research design

This study used a quantitative descriptive research design. Specifically, descriptive research design was employed to identify hazards in the school, assess the respondents' disaster management knowledge and practices, and design a feasible intervention plan to strengthen the school's disaster management system [15]. Quantitative research design is a structured approach used to investigate and analyzing numerical data to test hypotheses and answer research questions [16].

According to Pattern [17], descriptive research is research design used to examine the situation involving identification of attributes of a particular phenomenon based on an observational basis. So, this type of research is used to describe and interpret the data being studied based on fact that is supported by accurate theories. Thus, this research used quantitative-descriptive research design as it aimed to describe the respondents' disaster management and practices.

2.2. Respondents of the Study

The respondents of the study were the teachers from selected elementary school in Cotabato, Philippines which were identified as having high risks of natural disasters. The respondents included school administrators,

teachers, staff, and school Disaster Risk Reduction Management (DRRM) committee members. There were 80 population but only 70 were willing to participate in the research.

2.3. Research Instrument

This research utilized a self-constructed questionnaire divided into four primary sections: demographic profile of the respondents, assessment of natural hazards, disaster management knowledge, and disaster management practices. Two 4-point scales were employed—one for assessing vulnerability to natural hazards (4 = "Very Prone" to 1 = "Not Prone at All") and another using a Likert scale (4 = "Strongly Agree" to 1 = "Strongly Disagree") to measure knowledge and practices. To ensure content validity, the questionnaire was reviewed by three experts in the fields of disaster risk reduction and educational research. The instrument's validity index, based on their evaluations, reached a scale-level Content Validity Index (S-CVI) of 0.92, indicating strong agreement on the relevance and clarity of the items. A pilot test was also conducted with a group of non-participating teachers to check for clarity and comprehensibility. For reliability, the instrument was tested using Cronbach's alpha, yielding coefficients of 0.85 and 0.91 for the knowledge and practice sections respectively, which demonstrate excellent internal consistency.

Out of 80 eligible respondents, 70 participated, resulting in an 87.5% response rate. While this is generally acceptable for survey-based research, potential non-response bias should be acknowledged, as the perspectives of the 10 non-participants may differ in ways that could influence the findings. Efforts were made to minimize bias through random distribution of questionnaires and reminders to complete the survey.

Ethical standards were strictly observed throughout the research process. Beyond obtaining informed consent, participants were assured of the voluntary nature of their participation, with the freedom to withdraw at any stage without any repercussions. Confidentiality of responses was maintained through anonymized data collection and secure storage of records. The study also adhered to institutional ethical guidelines, ensuring that participants were protected from any form of psychological or social harm during the course of the research.

2.4. Sampling Procedure

The researcher used a simple random sampling method on the population, considering elementary school teachers as the respondents for data collection. Simple random sampling is a type of probability sampling which the researcher randomly selects subset of participants from a population [18]. The list of elementary school teachers was requested from school principals. The research used this sampling to select the teachers from the 5 elementary schools. To determine the desired sample size, Slovin's formula was employed. A total of 80 population of teachers, administrators, and staff, and only 70 were identified as respondents of the study.

2.5. Data Gathering Procedure

The researcher first sought approval from the relevant academic authority to conduct the study. Once approval was granted, the researcher proceeded to request permission from the school principals to carry out the survey. Informed Consent Forms were then distributed to all potential participants, ensuring that they fully understood the study's purpose, procedures, and their rights regarding confidentiality and voluntary participation. After the survey was completed, the researcher collected the filled-out questionnaires from the participants. These questionnaires were then systematically organized for tabulation. The data underwent statistical analysis to identify patterns and insights, followed by a thorough interpretation of the results to draw meaningful conclusions related to the research objectives.

2.6. Statistical Analysis

The study employed descriptive statistical tools such as mean and percentage to determine demographic profile of the research respondents. This included assessing their positions or designations in the school, whether they were administrators, teachers, administrative staff, or DRRM committee members, and calculating the hazard in the school. The disaster management knowledge and practices of the respondents were calculated using mean and frequency counts.

3. RESULTS AND DISCUSSION

Table 1. Hazards in the School as Experienced by the Respondents

	Statements	Mean	Verbal Description
1.	Flash Floods	2.81	High Risk
2.	Earthquakes	2.61	High Risk
3.	Landslide	2.18	Moderate Risk
4.	Typhoons	2.07	Moderate Risk
5.	El-Niño/drought	1.87	Moderate Risk

6.	Fire or Wildfires	1.80	Moderate Risk
7.	Volcanic Eruption	1.50	No Risk at All

Range	Verbal Interpretation
1.00 – 1.49	No Risk at All
1.50 – 2.49	Moderate Risk
2.50 – 3.49	High Risk
3.50 – 4.00	Very High Risk

Table 1 shows the disaster management knowledge of selected elementary schools in Matalam, Cotabato. The result revealed that the majority of respondents strongly agreed on the need to prepare an essential supplies kit with items such as drinking water, non-perishable food items, medications, batteries, lights, and a first aid kit with a highest mean of 3.64. The result implies that respondents are knowledgeable in the disaster management that there is a need for them to prepare essential kits, first aid kits, drinking water and other necessary items that are useful for emergency purposes. Moreover, being prepared could help them survive when disaster strike.

Based on the study of Smith et al. [19], the significance of proactive attitudes among respondents, as demonstrated by the strong agreement regarding the preparation of essential supplies kits it is important by easy to medicate themselves, handy and also accessible. This resonates with the notion that a positive attitude is a key driver for effective disaster preparedness [20].

On the other hand, the statement "during disaster I need to secure myself first before assisting others" got the lowest mean of 2.13. Disagreement with the statement about securing oneself before assisting others signals a commendable option for helping others but also raises the need for a balanced approach that prioritizes personal safety. This result implies that teacher prioritize the safety of their pupils than theirselves and achieving a balance between helping others and ensuring personal well-being for the teachers who have the full responsibility of the pupils in the school and in their classroom [21].

This result highlights an opportunity for educational interventions and training programs to emphasize the significance of self-preservation as a prerequisite for offering assistance, fostering a holistic understanding of disaster preparedness within the school community. It encourages a thoughtful and balanced approach to ensure the safety and well-being of individuals while actively contributing to collective resilience during emergencies [22].

According to Drabek [23], altruism, defined as the selfless concern for the well-being of others, is considered a fundamental aspect of effective disaster response . Research has shown that communities with individuals who prioritize helping others during disasters tend to exhibit higher levels of overall resilience. In the context of emergency preparedness, Drury et al. [24] argue that effective emergency preparedness must strike a balance between personal safety and helping others. They propose that focusing solely on self-preservation can erode social trust and communal strength, which are critical to surviving and recovering from collective threats. Research grounded in social identity theory reveals that people are more likely to assist others when they perceive a shared group identity during emergencies—highlighting the importance of community-centered disaster education [25].

Similarly, the role of social capital—networks of trust and reciprocity—as an essential determinant of community resilience [26]. They note that individuals embedded in strong social networks are more likely to engage in altruistic behaviors and resource-sharing, both of which are vital during the early stages of disaster response [27]. This further reinforces this point by emphasizing that emergent volunteer behavior and informal helping systems are frequently more agile and responsive than formal institutional mechanisms during crises [28]. Scholars found that social bonds and civic engagement often outperform physical infrastructure in predicting recovery outcomes after disasters. His empirical work in Japan following the 2011 tsunami showed that communities with higher social cohesion experienced lower mortality rates and quicker reconstruction, largely due to collective decision-making and mutual assistance [29].

In this light, the importance of fostering both individual preparedness and collective responsibility becomes evident [30]. Educational programs targeting teachers and school communities should therefore not only equip individuals with the technical knowledge of disaster response but also promote values of solidarity and shared responsibility [31]. This dual approach aligns with contemporary frameworks in disaster sociology and community resilience theory, which emphasize the interplay between individual agency and collective capacity in mitigating disaster impacts.

Overall, the disaster management knowledge of elementary schools in Matalam, Cotabato got a composite mean of 3.30 with a verbal description of agree. This implies that the respondents have a commendable level of disaster management knowledge within elementary schools in Matalam, Cotabato. This sets a positive tone for ongoing efforts, continuous improvement, and collaborative initiatives to further strengthen the overall disaster resilience of the school community. This implies that schools have laid a solid foundation for ongoing efforts, emphasizing the need for continuous improvement in disaster preparedness initiatives. The high level of

knowledge provides a positive backdrop for collaborative endeavors between schools, local authorities, and community stakeholders to further strengthen the overall disaster resilience of the school community.

Based on United Nations Office for Disaster Risk Reduction [32], the crucial role of schools in building disaster-resilient communities serve as essential hubs for disseminating information, fostering a sense of collective responsibility, and preparing the next generation to respond effectively to disasters . Additionally, research by Ronan et al. [33], suggests that disaster education in schools not only enhances knowledge but also positively influences attitudes and behaviors related to disaster preparedness.

Table 2. Disaster Management Knowledge of the Respondents

	Statements	Mean	Verbal Description
1.	There is a need for me to prepare for essential supplies kit with drinking water, non-perishable food items, medications, batteries, lights, and a first aid kit.	3.64	Strongly Agree
2.	There is a need for me to safeguard important documents and valuable belongings in waterproof containers or bags.	3.60	Strongly Agree
3.	In case of a flooding incident, I must turn off the electrical power and shut off gas supplies before evacuating the area.	3.56	Strongly Agree
4.	I must establish and maintain communication with local authorities and emergency services to stay informed about the situation and receive updates, warnings, or evacuation instructions.	3.50	Strongly Agree
5.	When I am indoors when an earthquake occurs, I avoid running outside the vanity. Hence, seek shelter within the building, away from windows, glass, and heavy furniture that may fall. Thus, I stay inside until the shaking stops, until it is safe to exit.	3.47	Agree
6.	I am very much aware of our building locations of stairwells and exits.	3.47	Agree
7.	During a flash flood, I must avoid walking or diving through floodwaters.	3.46	Agree
8.	After an earthquake, I need to check for any gas leaks, damaged electrical lines, or water pipe damage immediately.	3.44	Agree
9.	After an earthquake, I must immediately evacuate the location if I detect gas smell, which possibly indicates gas leaks.	3.44	Agree
10.	There is a need to monitor and regulate room or classroom temperatures during extreme heat.	3.44	Agree
11.	In an incident of an earthquake, the first and most important action is to drop down to the ground, take cover under a sturdy piece of furniture (such as a table or desk), and hold on until the shaking stops.	3.43	Agree
12.	I need to avoid using electrical appliances or open flames if I suspect a gas leak after an event of a disaster.	3.43	Agree
13.	In extreme heat, I need to drink water frequently throughout the day, even if I do not feel thirsty.	3.43	Agree
14.	I make it certain that I know whether our location resides in low-lying areas, flood-prone zones, or areas at risk of typhoons.	3.41	Agree
15.	If there is an immediate fire threat, I need to leave the area promptly and alert others about the need to evacuate.	3.41	Agree
16.	In emergencies, I need to follow evacuation orders or guidelines provided by local authorities.	3.38	Agree
17.	I ensure that I have sufficient knowledge of the signs and symptoms of heat-related illnesses, such as heat exhaustion and heatstroke.	3.38	Agree
18.	When a fire is ceased, I know that I cannot re-enter the building or affected area until it has been declared safe by firefighters or authorities.	3.38	Agree
19.	In case of a flooding incident, I need to go to higher ground or designated evacuation centers.	3.34	Agree
20.	I know how to activate fire alarms or notify emergency services about a fire threat.	3.34	Agree
21.	We always need to trim trees and remove any loose objects in our surroundings.	3.33	Agree

22. I need to secure or reinforce doors, windows, and roofs during heavy rains and wind.	3.31	Agree
23. If I observe a sign of a landslide, I need to move to higher ground or a safe location away from the potential path, preferably to an area with stable terrain.	3.30	Agree
24. I must avoid steep slopes, cliffs, or areas with loose soil or rocks during or after heavy rainfall or seismic activity.	3.30	Agree
25. In any event, I make sure that I am always informed about the local weather conditions and any hazard warnings or alerts issued by authorities.	3.24	Agree
26. I must have the local numbers of our disaster management unit, police, fire-fighters, or emergency responders.	3.16	Agree
27. I am aware that my location is either identified as a safe zone or a danger zone for pyroclastic flows, lava flows, or lahars (mudflows).	2.98	Agree
28. In an incident of a fire, there is a need to close doors and windows to prevent the spread of smoke and flames.	2.80	Agree
29. I am proficient in operating a fire extinguisher.	2.53	Agree
30. During disasters, I need to secure myself first before assisting others.	2.13	Disagree
Grand Mean	3.08	Moderate Disaster Management Knowledge

Legend:

Range	Verbal Description	Interpretation
1.00 – 1.49	Strongly Disagree	No Disaster Management Knowledge
1.50 – 2.49	Disagree	Low Disaster Management Knowledge
2.50 – 3.49	Agree	Moderate Disaster Management Knowledge
3.50 – 4.00	Strongly Agree	High Disaster Management Knowledge

Table 3 displays the disaster management practices of selected elementary schools in Matalam, Cotabato. The results revealed that the school raises awareness among students, teachers, and staff about drought's impacts and water conservation's importance through educational campaigns and programs engage in disaster management practices with a highest mean of 3.24 with verbal interpretation of agree. The result implies that the school is making significant strides in raising awareness and engaging in practices related to drought and water conservation. These efforts not only contribute to the immediate well-being of the school community but also have the potential for broader positive impacts on the environment and the community at large.

Rahman et al. [34] highlight the pivotal role of schools in disseminating knowledge about disasters, fostering a culture of resilience, and empowering students and staff to actively participate in risk reduction measures. The engagement observed in the current study aligns with the idea that educational institutions serve as crucial platforms for building disaster resilience . Moreover, Nasreen et al. [20] emphasized the importance of integrating disaster risk reduction into educational curricula and activities, highlighting the positive impact such initiatives can have on community resilience. The engagement of schools in raising awareness about drought impacts and water conservation is indicative of a proactive approach towards disaster risk reduction, contributing to the overall preparedness of the community [35].

Contrariwise, to this result respondents agreed that school has an installed early warning system, such as flood sensors, earthquake monitoring devices, fire alarms, ground temperature checkers, and monitoring devices to receive timely alerts about rising risks or potential disasters with a lowest mean 2.84 with a verbal interpretation of agree. The result implies that the presence of early warning systems, there is a potential for further enhancement and continuous improvement of the school to avoid damages.

The Federal Emergency Management Agency FEMA [36] highlights that early warning systems can significantly reduce the impact of disasters by providing timely information, allowing for prompt evacuation, and facilitating coordinated responses. This supports the notion that schools with established early warning systems are better equipped to protect the safety of students, teachers, and staff [37]. Additionally, the United Nations Office for Disaster Risk Reduction, underscores the importance of integrating early warning systems into the broader context of disaster risk reduction. The study argues that an effective early warning system should not only provide alerts but also be part of a comprehensive risk reduction strategy, involving community engagement and preparedness activities [38]. The agreement observed in the current study suggests a positive step toward a more comprehensive and resilient approach to disaster risk reduction within the school setting [32].

Overall, the disaster management practices of the schools got a composite mean of 3.08 with a verbal interpretation of agree. It means that elementary schools in Matalam, North Cotabato are observing and practicing the disaster management practices. It is an advantage since it could make them more equipped and prepared in times of emergency or disasters.

Cutter et al. [39], argued that schools are central to building community resilience, and effective disaster management practices within schools contribute significantly to overall community preparedness. The agreement observed in the current study aligns with the idea that schools, when equipped with efficient disaster management practices, can serve as anchors for community-wide resilience [40]. Furthermore, Ronan et al. [33] highlight the positive impact of well-implemented disaster management practices in schools on students' and staff's knowledge, attitudes, and behaviors related to preparedness. Schools that actively engage in disaster management contribute not only to the safety of their immediate community but also to the broader goal of fostering a culture of resilience [41].

Table 3. Disaster Management Practices of the Respondents

	Statements	Mean	Verbal Description
1.	Our school raises awareness among students, teachers, and staff about drought's impacts and water conservation's importance through educational campaigns and programs.	3.24	Agree
2.	Our school ensures that roofs, windows, doors, and other critical infrastructure are appropriately maintained, which can withstand typhoons.	3.23	Agree
3.	Our school keeps the school community well-informed about disaster risks, prevention measures, and emergency response procedures through regular communication channels.	3.20	Agree
4.	Our school has continuous initiatives to mitigate disaster risks, such as training, tree planting, clearing, and other relevant activities.	3.18	Agree
5.	Our school has first aid stations and medicines that can be used during emergencies.	3.18	Agree
6.	Our school conducts regular earthquake drills to ensure that students and staff are familiar with the appropriate actions to take during an earthquake.	3.18	Agree
7.	Our school regularly monitors water supply sources, such as wells or water tanks, to ensure an adequate and sustainable supply during drought.	3.18	Agree
8.	Our school educates students, teachers, and staff about the nature and caused of disasters, and warning signs.	3.17	Agree
9.	Our school regularly inspects buildings and facilities to identify and address structural weaknesses or vulnerabilities that could be exacerbated by strong winds or heavy rainfall.	3.17	Agree
10.	Our school practices evacuation drills and ensures that everyone knows how to respond effectively during a typhoon, including seeking shelter and following safety protocols.	3.17	Agree
11.	Our school has rainwater harvesting systems to collect and store rainwater for non-potable uses, such as irrigation and toilet flushing, which can be used during droughts.	3.16	Agree
12.	Our school has evacuation routes, safe assembly areas, communication protocols, and roles and responsibilities of staff members during disasters.	3.14	Agree
13.	Our school conducts regular structural safety assessments of school buildings to identify and address potential vulnerabilities to seismic activity.	3.14	Agree
14.	Our school implements flood mitigation measures such as proper landscaping, grading, or the installation of barriers to redirect or slow down floodwaters.	3.13	Agree
15.	We conduct regular drills and exercises to ensure staff and students are familiar with evacuation procedures and know how to respond effectively during disasters.	3.11	Agree
16.	Our school has a comprehensive emergency response plan with specific protocols and procedures for dealing with disasters.	3.10	Agree

17.	The school community is aware of the warning systems and understands the actions to take when alerted.	3.10	Agree
18.	Our school incorporates water conservation and sustainable practices into the curriculum, and integrates water conservation, climate change, and environmental stewardship topics.	3.10	Agree
19.	Our school continuously and regularly inspect drainage systems, gutters, and downspouts to ensure they are clear and functioning correctly.	3.08	Agree
20.	Our school displays clear and visible safety signage that provides guidance on evacuation procedures and the location of fire safety equipment.	3.08	Agree
21.	Our school conducts geotechnical assessments and hazard mapping to identify areas within or near the school campus prone to landslides.	3.07	Agree
22.	Our school conducts routine maintenance to promptly address any signs of erosion, soil movement, or instability.	3.07	Agree
23.	Our school retrofit or reinforce school structures to meet the recommended standards and guidelines for earthquake resilience.	3.06	Agree
24.	Our school regularly monitors the stability of slopes, retaining walls, and other vulnerable areas within the premises.	3.06	Agree
25.	Our school has adequate emergency kits containing drinking water, non-perishable food items, medications, batteries, lights, and a first aid kit.	3.04	Agree
26.	Our school regularly inspects the school facilities to identify potential fire hazards, such as faulty wiring, blocked exits, or improper storage of flammable materials.	3.04	Agree
27.	The school provides periodic training on first aid, CPR, and other relevant skills to enhance the ability to respond effectively during emergencies.	3.01	Agree
28.	We regularly test and inspect fire extinguishers, alarms, and other fire safety equipment to ensure they function correctly.	3.00	Agree
29.	We have undergone training and workshops on disaster preparedness, response procedures, and first aid techniques for all disaster incidents.	2.97	Agree
30.	Our school provides comprehensive fire safety education to students, teachers, and staff, including fire prevention, evacuation procedures, and the proper use of fire extinguishers.	2.97	Agree
31.	Our school implements slope stabilization measures, such as terracing, retaining walls, or vegetative cover, to prevent or minimize soil erosion and landslides.	2.96	Agree
32.	Our school installed reliable fire detection and alarm systems throughout the school premises.	2.93	Agree
33.	Our school marks evacuation routes and emergency exit throughout the building, ensuring they are unobstructed and well-lit.	2.93	Agree
34.	Our school conducts regular fire drills to ensure that everyone is familiar with evacuation routes and emergency procedures.	2.87	Agree
35.	Our school has an installed early warning system, such as flood sensors, earthquake monitoring devices, fire alarms, ground temperature checkers, and monitoring devices to receive timely alerts about rising risks or potential disasters.	2.84	Agree
	Grand Mean	3.30	Moderate Disaster Management Practices

Legend:

Range	Verbal Description	Interpretation
1.00 – 1.49	Strongly Disagree	No Disaster Management Practices
1.50 – 2.49	Disagree	Low Disaster Management Practices
2.50 – 3.49	Agree	Moderate Disaster Management Practices
3.50 – 4.00	Strongly Agree	High Disaster Management Practices

This research has significant implications for improving disaster preparedness in elementary schools, particularly in rural areas like Cotabato, Philippines. By identifying strengths and gaps in teachers' knowledge and practices, the study can inform the design of localized training programs, influence policy development, and encourage school-wide initiatives that enhance emergency readiness. However, certain limitations must be acknowledged. The study was confined to selected elementary schools in Cotabato, which may limit the generalizability of the findings to other regions with different socio-economic and geographic conditions. Additionally, the use of self-reported data may introduce response bias, as participants might overstate their preparedness. Despite these limitations, the study offers a valuable foundation for further research and serves as a catalyst for more comprehensive disaster risk reduction strategies in the basic education sector.

4. CONCLUSION

Based on the findings, it is concluded that flash floods and earthquakes pose significant threats to elementary schools in Matalam, North Cotabato. The participating teachers demonstrated commendable disaster management knowledge, particularly in preparedness practices such as maintaining essential supply kits and conducting drills. This reflects a solid foundational awareness within the education sector. However, while their commitment to aiding others during disasters is notable, the findings underscore the importance of reinforcing personal safety as a central aspect of emergency response. The study also highlighted a critical gap in the availability and utilization of early warning systems and proper monitoring devices—an area that must be urgently addressed.

This research advances the body of knowledge by providing localized data on disaster preparedness within rural school settings, a topic often underrepresented in national and regional studies. By situating the study within the context of Community Resilience Theory, the research reinforces the role of teachers not only as educators but as frontline actors in building disaster-resilient communities. It also contributes to the educational discourse by aligning practical school-level preparedness with broader social science theories, thus offering both empirical insights and theoretical relevance.

From a policy perspective, the findings call for enhanced support for rural schools in terms of training resources, early warning technology, and community-based disaster response planning. Education authorities and local government units should collaborate to institutionalize regular, comprehensive training programs tailored to local hazards. Future research is recommended to broaden the scope by including more schools across various geographic regions, enabling comparative analysis and enhancing generalizability. Longitudinal studies can track changes in preparedness over time, while qualitative approaches may reveal the lived experiences and adaptive strategies of teachers during emergencies. Moreover, involving other stakeholders such as students, parents, and disaster response officials would create a more holistic picture of school disaster readiness, leading to more inclusive and effective interventions.

REFERENCES

[1] E. Widowati, A. H. Sutomo, and W. Istiono, "Are Elementary Schools Ready for Disaster Preparedness and Safety?," in *E3S Web of Conferences*, EDP Sciences, 2021, p. 01087.

[2] H. Bahmani, Y. Ao, D. Yang, and D. Wang, "Students' evacuation behavior during an emergency at schools: A systematic literature review," *International journal of disaster risk reduction*, vol. 87, p. 103584, 2023.

[3] A. A. Shah, W. Wu, Z. Gong, I. Pal, and J. Khan, "Multidimensional six-stage model for flood emergency response in schools: A case study of Pakistan," *Natural Hazards*, vol. 105, no. 2, pp. 1977–2005, 2021.

[4] S. S. Miresmaeeli, N. Esmaeili, S. S. Ashlaghi, and Z. A. Dolatabadi, "Disaster risk assessment among Iranian exceptional schools," *Disaster Med Public Health Prep*, vol. 16, no. 2, pp. 678–682, 2022.

[5] S. Mirzaei *et al.*, "Design and psychometric evaluation of schools' resilience tool in emergencies and disasters: A mixed-method," *PLoS One*, vol. 16, no. 7, p. e0253906, 2021.

[6] E. A. Opabola, C. Galasso, T. Rossetto, E. Meilianda, Y. Idris, and S. Nurdin, "Investing in disaster preparedness and effective recovery of school physical infrastructure," *International journal of disaster risk reduction*, vol. 90, p. 103623, 2023.

[7] H. Kawasaki, S. Yamasaki, M. Kurokawa, H. Tamura, and K. Sonai, "Relationship between teachers' awareness of disaster prevention and concerns about disaster preparedness," *Sustainability*, vol. 14, no. 13, p. 8211, 2022.

[8] S. A. Poblador and R. J. Tagare, "Phenomenological Probe on Senior High School Teachers' Experiences in Teaching Sports Track During the Transition Years of Philippine K To 12," *Sportis. Scientific Journal of School Sport, Physical Education and Psychomotricity*, vol. 9, no. 1, pp. 20–40, 2023, doi: 10.17979/sportis.2023.9.1.9203.

[9] R. Yusuf, I. Fajri, and S. A. Gani, "Disaster education in disaster-prone schools: a systematic review," in *IOP Conference Series: Earth and Environmental Science*, IOP Publishing, 2022, p. 012034.

[10] R. D. Dela Cruz and R. C. G. Ormilla, "Disaster risk reduction management implementation in the public elementary schools of the department of education, Philippines," *International Journal of Disaster Risk Management*, vol. 4, no. 2, pp. 1–15, 2022.

[11] M. K. Rañeses, A. Chang-Richards, J. Richards, and J. Bubb, "Measuring the level of disaster preparedness in Auckland," *Procedia Eng*, vol. 212, pp. 419–426, 2018.
[12] N. D. Baker and L. Grant Ludwig, "Disaster preparedness as social control," *Crit Policy Stud*, vol. 12, no. 1, pp. 24–43, 2018.
[13] S. Appleby-Arnold, N. Brockdorff, I. Jakovljev, and S. Zdravković, "Applying cultural values to encourage disaster preparedness: Lessons from a low-hazard country," *International journal of disaster risk reduction*, vol. 31, pp. 37–44, 2018.
[14] J. V Castañeda, N. C. Bronfman, P. C. Cisternas, and P. B. Repetto, "Understanding the culture of natural disaster preparedness: exploring the effect of experience and sociodemographic predictors," *Natural Hazards*, vol. 103, pp. 1881–1904, 2020.
[15] P. J. B. Ongcoy and R. L. Tagare, "The Role of Social Support in Shaping Students' Goal Achievement," vol. 31, no. 1, 2024.
[16] J. W. Creswell, "Research methods," *JW Creswell, Research design: qualitative, quantitative and mixed methods approaches*, pp. 15–17, 2009.
[17] M. L. Patten, *Understanding research methods: An overview of the essentials*. Routledge, 2016.
[18] L. R. Gay, G. E. Mills, and P. W. Airasian, *Educational research: Competencies for analysis and applications*. Pearson, 2012.
[19] J. M. O. M. Smith JA, "Doing interpretative phenomenological analysis. In: Murray M, Chamberlain K, editors. Qualitative health psychology: theories and methods. ," *London (UK): Sage Publications*, p. 218, 1999.
[20] M. Nasreen, K. M. Hossain, and M. M. Khan, *Coastal Disaster Risk Management in Bangladesh*. Routledge, London, 2023.
[21] F. McCallum and D. Price, "Well teachers, well students," *The Journal of Student Wellbeing*, vol. 4, no. 1, pp. 19–34, 2010.
[22] A. Nashte, P. K. Agrawal, D. Patil, N. Parati, U. T. Kumbhar, and N. Shelke, "Examining the Ethics of Public Health Interventions: Balancing Individual Rights and Collective Well-being," *South East Eur J Public Health*, pp. 150–161, 2023.
[23] T. E. Drabek, "Social dimensions of disaster," 2004, *Emmitsburg, Maryland: Emergency Management Institute, Federal Emergency …*.
[24] J. Drury, C. Cocking, and S. Reicher, "Everyone for themselves? A comparative study of crowd solidarity among emergency survivors," *British Journal of Social Psychology*, vol. 48, no. 3, pp. 487–506, 2009.
[25] N. Narayanan *et al.*, "Disaster preparedness: biological threats and treatment options," *Pharmacotherapy: The journal of human pharmacology and drug therapy*, vol. 38, no. 2, pp. 217–234, 2018.
[26] R. Das, "Disaster preparedness for better response: Logistics perspectives," *International journal of disaster risk reduction*, vol. 31, pp. 153–159, 2018.
[27] B. Ryan, K. A. Johnston, M. Taylor, and R. McAndrew, "Community engagement for disaster preparedness: A systematic literature review," *International journal of disaster risk reduction*, vol. 49, p. 101655, 2020.
[28] L. J. Labrague *et al.*, "Disaster preparedness among nurses: a systematic review of literature," *Int Nurs Rev*, vol. 65, no. 1, pp. 41–53, 2018.
[29] G. Erbeyoğlu and Ü. Bilge, "A robust disaster preparedness model for effective and fair disaster response," *Eur J Oper Res*, vol. 280, no. 2, pp. 479–494, 2020.
[30] N. L. Munasinghe and K. Matsui, "Examining disaster preparedness at Matara district general hospital in Sri Lanka," *International Journal of Disaster Risk Reduction*, vol. 40, p. 101154, 2019.
[31] M. A. Tkachuck, S. E. Schulenberg, and E. C. Lair, "Natural disaster preparedness in college students: Implications for institutions of higher learning," *Journal of American college health*, vol. 66, no. 4, pp. 269–279, 2018.
[32] A. D. R. Center, "Sendai framework for disaster risk reduction 2015–2030," *United Nations Office for Disaster Risk Reduction: Geneva, Switzerland*, 2015.
[33] K. R. Ronan, K. Crellin, D. M. Johnston, K. Finnis, D. Paton, and J. Becker, "Promoting child and family resilience to disasters: Effects, interventions, and prevention effectiveness," *Child Youth Environ*, vol. 18, no. 1, pp. 332–353, 2008.
[34] A.-U.- Rahman, A. N. Khan, and R. Shaw, *Disaster risk reduction approaches in Pakistan*. 2015.
[35] N. M. Samsuddin, R. Takim, A. H. Nawawi, and S. N. A. S. Alwee, "Disaster preparedness attributes and hospital's resilience in Malaysia," *Procedia Eng*, vol. 212, pp. 371–378, 2018.
[36] U. S. DHS, "Federal Emergency Management Agency (FEMA).(2017)," *National Incident Management System*.
[37] M. Titko and J. Ristvej, "Assessing importance of disaster preparedness factors for sustainable disaster risk management: The case of the Slovak Republic," *Sustainability*, vol. 12, no. 21, p. 9121, 2020.
[38] D. Kyne *et al.*, "Empirical evaluation of disaster preparedness for hurricanes in the Rio Grande Valley," *Progress in disaster science*, vol. 5, p. 100061, 2020.

[39] S. L. Cutter *et al.*, "A place-based model for understanding community resilience to natural disasters," *Global environmental change*, vol. 18, no. 4, pp. 598–606, 2008.
[40] G. Taskiran and U. Baykal, "Nurses' disaster preparedness and core competencies in Turkey: a descriptive correlational design," *Int Nurs Rev*, vol. 66, no. 2, pp. 165–175, 2019.
[41] M. L. M. I. Verheul and M. L. A. Dückers, "Defining and operationalizing disaster preparedness in hospitals: a systematic literature review," *Prehosp Disaster Med*, vol. 35, no. 1, pp. 61–68, 2020.