

The collaborative efforts in Disaster Risk Reduction Management (DRRM) in Loreto West District Elementary Schools

Roselle Mae P. Otero

Agusan Colleges, Inc.

Butuan City, Philippines

Email: rosellemaeotero@gmail.com

ABSTRACT

This study examined how Loreto West District elementary schools collaborated to mitigate disaster risk. It profiled the schools' vulnerability, school size, topography, and risk level. It also examined the school's disaster risk reduction management, specifically on the indicators of SDRRM specified in DepEd Order 33 series of 2021 in terms of prevention and mitigation, preparedness, response, recovery, and rehabilitation. It also examined the school's DRRM team's challenges. The study revealed that blocked pathways were the greatest exposure risk in classrooms, followed by swinging doors and protruding nails from chairs and tables. Broken toilet bowls, sinks, and chairs/desks/tables were the greatest threat, followed by exposed chemicals and liquids. Stray animals inside the school and an open/incomplete perimeter barrier increase school vulnerability. There was also no emergency hotline or method for student release to parents. Respondents indicated that their school was less than a kilometer from the river, while others were 1 to 3 kilometers and 5 to 10 kilometers away. These studies found that most respondents reside near bodies of water, making them vulnerable to water disasters. In addition, some teachers are assigned to schools located on hills or mountains, while others live at the foot of these hills or mountains. In the four categories, risk level did not significantly affect DRRM implementation. The null hypothesis was therefore not rejected. The school's risk level did not correspond to the school's implementation of the DRRM program. To elucidate, the school should coordinate its implementation in combating the effects of disaster, as the schools are situated in a prone area. The more disaster-prone the school, the more crucial its DRRM program implementation. Implementers may have a heightened sense of urgency to execute, strengthen, and sustain DRRM programs in their assigned schools. It was also found that the DRRM team members lack disaster-resilience training, knowledge, and skills, and are therefore recommended for training. Materials, gadgets, and communication between schools and municipal governments were also lacking. As the number of staff, students, parents, and other stakeholders varies with school size, so do preparedness, mitigation, and recovery techniques vary.

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INTRODUCTION

The risks posed by both natural and man-made disasters have become increasingly evident in recent decades, threatening human lives and obstructing the pursuit of sustainable development. These hazards may strike suddenly, without regard for time or place, and schools are not exempt from their potential impact. While families often assume that schools are safe havens for children during the day, the reality is that institutions of learning may face the effects of natural disasters such as fires, floods, earthquakes, volcanic eruptions, typhoons, and tornadoes. Health crises like the COVID-19 pandemic and other infectious diseases can also spread rapidly, while the threat of rare but devastating school shootings further emphasizes the vulnerability of educational settings. To address such risks, schools must adopt short-, medium-, and long-term disaster management plans to ensure the safety and security of students and personnel. Effective disaster risk reduction and management (DRRM) strategies are therefore indispensable to protect both lives and property in the education sector.

Ensuring school safety requires a thorough assessment of institutional vulnerabilities. Factors such as school size, geographical location, topography, and the level of disaster preparedness all contribute to the degree of risk exposure. DRRM encompasses multiple stages—prevention, mitigation, preparedness, response, recovery, and rehabilitation—that go beyond physical protection of property, focusing instead on coordinated human actions to safeguard lives. The active involvement of teachers, students, parents, and communities is particularly important, as participatory engagement not only raises awareness but also fosters a culture of preparedness and resilience. By embedding disaster preparedness within schools and communities, adverse disruptions to education can be minimized, thereby strengthening overall disaster response capacity.

The Philippines ranks among the most disaster-prone nations in the world due to its geographic location along the Pacific Ring of Fire and typhoon belt. Records from the National Disaster Risk Reduction and Management Council (NDRRMC) indicate that the country experiences an average of 18–20 tropical depressions and storms annually, with 8–10 making landfall. Other recurrent hazards include volcanic eruptions, earthquakes, landslides, and floods, making the archipelago one of the most at-risk globally (Tobin, UNICEF representative). Children and youth, in particular, remain the most defenseless demographic, given their limited coping mechanisms and the significant time they spend within school premises each day. As Gagani and Montalban (2019) note, this reality necessitates that schools implement robust safety measures to protect students against the unpredictable nature of disasters.

Recognizing these vulnerabilities, the Department of Education (DepEd) has prioritized disaster preparedness through school-based programs and national directives. DepEd Order No. 33, series of 2021, for instance, outlines school-level disaster response measures aimed at mitigating damages caused by tropical cyclones, floods, and related calamities. This policy

represents a government investment in creating secure and resilient learning environments. Similarly, the Comprehensive DRRM in Basic Education Framework places emphasis on safe learning facilities, effective school disaster management, and education in DRRM (Martinez et al., 2019). Its objectives include protecting students and staff from harm, ensuring continuity of education despite hazards, safeguarding educational infrastructure, and strengthening resilience through awareness and training. These initiatives are operationalized by School Planning Teams (SPT) and School DRRM Teams (SDRRM), who are responsible for assessment, planning, implementation, monitoring, and reporting, with active participation from all stakeholders, including learners.

The urgency of localized disaster management is evident in Agusan del Sur, particularly in the Municipality of Loreto, where the researcher resides and serves in the education sector. Loreto is among the four largest municipalities in the province, occupying nearly 60% of its land area. Its proximity to the Agusan River renders it highly susceptible to flooding, with flood heights reaching between 1.0 and 2.0 meters and durations often exceeding three days (Tawas & Millan, 2021). The area's topographical vulnerabilities underscore the importance of implementing effective DRRM in schools, as many institutions in the district are located in high-risk zones without adequate response mechanisms. Given this context, the present study seeks to assess schools' readiness in disaster management, particularly in addressing flood and earthquake risks, with the goal of strengthening preparedness and informing DepEd's enhancement of its DRRM strategies for the benefit of learners.

This research draws upon the Emergency Management Theory developed by David McEntire in 2004, which emerged in response to the heightened awareness of disaster management needs following the September 11, 2001 terrorist attacks. The theory emphasizes a comprehensive approach that integrates preparedness, response, recovery, and mitigation as essential phases in addressing disasters (Ughulu et al., 2021). Preparedness involves the creation of contingency plans, training, and behavioral adjustments to reduce risks; response entails the mobilization of resources and execution of plans during crises; recovery focuses on assisting victims and restoring normalcy; and mitigation seeks to reduce the likelihood and impact of future hazards through evaluation and improved planning. Scholars argue that without such proactive and reactive measures, societies remain highly vulnerable to catastrophic emergencies (Farazmand, 2017; Ughulu et al., 2021). This theoretical grounding reinforces the study's focus on school-based disaster management as a means to systematically address vulnerabilities and build resilience.

The study also adopts a conceptual framework centered on profiling schools in Loreto West District, Division of Agusan del Sur, in relation to their vulnerability, size, topography, and risk level. These factors provide a foundation for understanding institutional readiness and inform the design of responsive DRRM strategies. Larger schools, for instance, may face a broader range of risks, while the geographical and structural conditions of certain areas amplify exposure to specific hazards. The research likewise evaluates compliance with indicators stipulated in DepEd Order No. 33, series of 2021, focusing on the phases of prevention, preparedness, response, recovery, and rehabilitation. Moreover, the study investigates the challenges encountered by school DRRM teams in implementing safety measures, with the ultimate objective of formulating a School Disaster Risk Reduction and Management Plan

(SDRRM Plan). This plan is envisioned as a practical tool to enhance school preparedness, improve institutional resilience, and strengthen the safety of learners and educators in disaster-prone areas.

Statement of the problem

This study investigated the collaborative efforts in Disaster Risk Reduction Management in Loreto West District Elementary Schools. It sought to answer the following sub-problems:

1. What is the profile of the schools in terms of vulnerability risks, school size, topography, and risk level?
2. What is the level of the collaborative efforts of the schools in implementing Disaster Risk Reduction Management (DRRM) in terms of prevention and mitigation, preparedness, response, and recovery and rehabilitation?
3. What are the challenges encountered by the School Disaster Risk Reduction and Management (SDRRM) Team?
4. Is there a significant association between the profile of the schools and their level of collaborative efforts in DRRM implementation?
5. Based on the outcomes of the study, what SDRRM Enhancement Plan may be proposed?

METHODOLOGY

This study employed a quantitative research design to determine the level of collaborative efforts in the implementation of School Disaster Risk Reduction and Resiliency Management (SDRRM). Quantitative research, as Leavy (2022) explains, uses deductive approaches to test theories by measuring variables and identifying patterns, correlations, or causal relationships. Through systematic data collection and analysis, it allows researchers to evaluate the effectiveness of programs or policies against specific standards. In this case, the study sought to describe how DRRM programs were implemented in schools within the West Loreto District and to provide a basis for enhancing existing programs for the benefit of the entire school community.

The research was conducted in Loreto West District, Division of Agusan del Sur, located in Patin-ay, Prosperidad, within the Caraga Region. This district, consisting of 12 elementary schools, is situated in a disaster-prone area vulnerable to flash floods, with several schools located near rivers and others surrounded by mountainous terrain. Sto. Tomas Central Elementary School, Guitas Elementary School, Waloe Elementary School, Magaud Elementary School, and Violanta Elementary School are close to riverbanks, while institutions such as Don Enesterio S. Otaza Elementary School, Kasapa Elementary School, and Pan-ajatan Elementary School are located in mountainous areas that can only be accessed by crossing one or two rivers. The geographical conditions of these schools highlight the necessity of examining their preparedness and management systems for disaster risk reduction.

The respondents of the study were members of the School DRRM committees in the district's elementary schools. In total, 145 individuals participated, representing varying numbers of committee members per school. Sto. Tomas Central Elementary School, being a central institution, had the highest number of committee members at 28, while smaller schools such as

Don Enesterio S. Otaza Elementary School, Tagbalihaw Elementary School, and Pan-ajatan Elementary School had only five members each. The variation in membership reflected differences in school size and teaching staff, which influenced committee composition.

To ensure representativeness, the study used stratified random sampling. The population was divided into subgroups or strata based on similarities, and participants were randomly selected from each group. This technique, as Bhardwaj (2019) notes, reduces population heterogeneity and produces a more accurate representation of the sample. Educators who were identified as members of the SDRRM committees formed the sampling frame. After compiling the list of potential respondents, every tenth name was selected for inclusion in the study.

The research instrument was a structured survey questionnaire divided into three parts. The first part gathered the schools' profiles, focusing on vulnerability risks, school size, topography, and risk level. Vulnerability risks were categorized into risks inside classrooms, inside laboratories, outside classrooms, around school premises, and in non-physical aspects. Respondents identified relevant risks from the checklist provided. School size was classified into small or medium-sized based on population. Topography was determined by proximity to water bodies and land type, while risk level was rated as low, moderate, medium, high, or very high. The second part of the questionnaire addressed indicators of DRRM implementation, including prevention and mitigation, preparedness, response, and recovery and rehabilitation. Respondents indicated their perceptions using a scale that reflected the level of implementation. The final section focused on challenges encountered by the SDRRM Teams in program and project implementation.

To establish validity, the survey instrument was reviewed by three expert validators. These included a master teacher specializing in DRRM-related instruction, an Education Program Specialist in Disaster Management, and personnel from either the Civil Defense Office or the Municipal Disaster Risk Reduction and Management Office (MDRRMO). Letters of intent were submitted to their respective offices for formal approval, and a validation form was provided for feedback. A language and linguistics teacher also reviewed the instrument to ensure clarity and accuracy in phrasing. Reliability was confirmed using Cronbach's alpha, which yielded a coefficient of 0.92, indicating strong internal consistency.

Following validation, the questionnaires were distributed to respondents after obtaining approval from the Public Schools District Supervisor and school principals. Participants were given sufficient time to respond, and the researcher facilitated clarifications when needed. After collection, the responses were tabulated and consolidated for analysis. The study employed descriptive and inferential statistical tools to interpret the data. Means were computed to assess common responses regarding school profiles, vulnerability, and DRRM implementation levels. Frequencies and percentages were calculated to identify patterns and distributions across responses. Analysis of variance (ANOVA) was used to test for significant differences and associations, particularly in relation to school profiles and the implementation of DRRM programs.

The results were interpreted using a five-point scale corresponding to verbal descriptions of implementation, ranging from "very poorly implemented" to "very highly implemented." This facilitated the identification of strengths and gaps in the schools' DRRM practices. By integrating these methodological steps, the study ensured rigor in the collection, validation, and

analysis of data, thereby providing reliable insights into disaster preparedness and management among schools in the district.

RESULTS AND DISCUSSION

A total of 145 respondents composed of members of the School Disaster Risk Reduction and Management (SDRRM) committees across the twelve elementary schools in Loreto West District, Division of Agusan del Sur, participated in this study. These schools are situated in flood-prone and mountainous areas that require careful disaster preparedness. The data gathered describe the profile of schools in terms of vulnerability risks, size, topography, and risk level, followed by the extent of DRRM implementation across the four thematic areas of prevention and mitigation, preparedness, response, and recovery and rehabilitation. Furthermore, the challenges encountered by SDRRM teams were identified, and statistical analyses were conducted to determine differences and associations between DRRM implementation, school size, and risk level.

Profile of the schools

In terms of vulnerability risks inside classrooms, the most common concern reported by respondents was broken windows, observed by 75 or 82.4 percent of the participants. Swinging doors were identified by 54 or 59.3 percent, while protruding nails from chairs and tables were noted by 45 or 49.5 percent. Other significant risks included broken doorknobs, cited by 44 or 48.4 percent, and unmounted cabinets or shelves, reported by 40 or 44 percent. Electrical hazards were also observed, with 36 or 39.6 percent pointing to exposed electrical wires, and 35 or 38.5 percent identifying busted plugs, bulbs, or other faulty facilities. Lesser but still noteworthy hazards included dripping ceilings (29.7 percent), broken or dilapidated ceilings (23.1 percent), and blocked corridors (22.0 percent). The absence of medical kits or alarms was also reported by 23.1 percent. These findings reveal that broken windows, swinging doors, and protruding nails were the most pressing risks within classrooms, posing direct dangers to teachers and learners, while electrical and structural issues further compromised safety.

Laboratory-related risks were less frequent but still critical. Exposed chemicals and liquids were the most common hazard, identified by 25 respondents or 27.5 percent, while unlabeled chemicals were reported by 12 respondents or 13.2 percent. Such conditions pose dangers during emergencies such as earthquakes, where chemical spills could threaten the health of both students and teachers.

Outside classrooms, the highest reported risk was the presence of condemnable buildings—ancient structures, collapsing buildings, or walls with prominent cracks—which were noted by 72 respondents or 79.1 percent. Broken toilet bowls, sinks, and furniture such as chairs and tables followed at 49.5 percent, while flooded areas were cited by 40 respondents or 44 percent. Garbage areas and stagnant water, both recorded by 37 respondents or 40.7 percent, were additional concerns. Other risks included the absence of ramps in elevated school buildings (31.9 percent), insufficient warning signs on slippery corridors (28.6 percent), plants mounted on building railings (26.4 percent), and rusty metal along stairways (13.2 percent). The lack of emergency exits, reported by 12.1 percent, was also a significant but less common issue. These

findings show that unsafe structures, sanitation deficiencies, and water-related risks are the most prevalent hazards outside classrooms.

Vulnerability risks around school premises centered on stray animals and incomplete or open perimeter fences, both reported by 38 respondents or 41.8 percent. Electrical posts or transformers located within school compounds were noted by 33 or 36.3 percent, while unpruned trees, bushes, and shrubs were reported by 30 or 33 percent. Open or clogged canals were cited by 28 or 30.8 percent, and flooding within premises by 25 or 27.5 percent. Open pits were the least frequent risk, noted by 19 or 20.9 percent, while rusty metal posts in areas like basketball courts were reported by 12 or 13.2 percent. These risks threaten not only internal stakeholders but also external visitors such as parents and agency personnel.

Non-physical vulnerability risks were also prominent. Thirty-four respondents or 37.4 percent reported the absence of a system for releasing learners to parents during emergencies, while 30 or 33 percent cited the lack of posted emergency hotlines around the school. These results underscore the importance of communication and coordination systems as part of effective DRRM implementation.

The profile of schools in terms of size showed that 24 or 26.4 percent were categorized as small schools, while 67 or 73.6 percent were medium-sized. This indicates that larger institutions carry greater responsibilities due to the size of their student population. In terms of topography, 73 or 80.2 percent of schools were located less than one kilometer from a river, 13 or 14.3 percent were one to three kilometers away, and 5 or 5.5 percent were situated more than ten kilometers away. Regarding land formations, 13 or 14.3 percent were located on the tops of hills or mountains, 19 or 20.9 percent below hills or mountains, and 20 or 22 percent on elevated or slightly elevated areas. A further 39 or 42.9 percent of respondents indicated that their schools were located far from any landforms. These results show that most schools are located near bodies of water or in vulnerable terrains, heightening disaster risk.

The risk level profile revealed that 39 respondents or 42.9 percent rated their schools at a medium risk level. Twenty-six or 28.6 percent identified their schools as low risk, while another 26 or 28.6 percent indicated moderate risk. This confirms that the majority of schools in the district face at least moderate to medium vulnerability.

Level of school DRRM implementation

The implementation of DRRM across the four thematic areas was assessed comprehensively. In terms of prevention and mitigation, indicators such as the conduct of orientations and posting of early warning systems and safety signages against communicable diseases like COVID-19 received the highest evaluation, with a mean of 4.42 and an interpretation of “Very Good.” Developing early warning system guidelines scored 4.29, while risk assessments scored 4.07. Hazard mapping was less consistently practiced, with student-led hazard mapping rated at 4.00 and community hazard mapping at 3.82. The overall weighted mean for prevention and mitigation was 4.05, corresponding to “Very Good.”

For preparedness, the strongest practices included the development of databases for learner records (mean of 4.46), capacity-building activities such as earthquake and fire drills (4.40), and integration of DRRM concepts in teaching and learning (4.35). The lowest-rated

activity was conducting DRRM-related research, with a mean of 3.60, though still interpreted as “Very Good.” Other practices such as developing contingency plans, communication mechanisms, integrating DRRM into School Improvement Plans, and providing evacuation spaces and kits also scored above 4.00. The overall weighted mean for preparedness was 4.08, again interpreted as “Very Good.”

In terms of response, the highest-rated indicator was the establishment of communication mechanisms among SDRRM members and school stakeholders, with a mean of 4.08. Institutional mechanisms for disaster response operations scored 4.02, while communication with local government units was the lowest at 3.77. The overall mean for response was 3.96, which was still rated “Very Good.”

For recovery and rehabilitation, the availability of alternative learning materials received the highest mean score of 4.02. The presence of recovery plans, temporary learning spaces, and mechanisms for class resumption also scored highly, ranging from 3.93 to 3.99. The lowest indicators were the provision of trained individuals for post-disaster assessment and psychosocial support, both rated at 3.74. The overall weighted mean was 3.90, which indicates “Very Good” practices but also highlights the need for more trained personnel in recovery and psychosocial interventions.

Challenges encountered by SDRRM teams

The most pressing challenges faced by SDRRM teams included a lack of materials or equipment, cited by 72 respondents or 79.1 percent, and excessive paperwork, reported by 70 or 76.9 percent. Lack of training among SDRRM members was also a major concern, noted by 63 or 69.2 percent. Other issues included too many ancillary responsibilities (47.3 percent), lack of external stakeholder support (44 percent), insufficient planning skills (42.9 percent), and limited time (39.6 percent). Lack of administrative support was cited by 33 percent, while insufficient cooperation among internal stakeholders was reported by 28.6 percent. Lesser concerns included lack of teacher interest (15.4 percent), lack of colleague support (7.7 percent), and other unspecified issues (2.2 percent). These findings demonstrate that logistical and training deficiencies were the most significant barriers to effective DRRM implementation.

Significant differences and associations

The t-test revealed significant differences in DRRM implementation between small and medium-sized schools in prevention and mitigation ($t=-3.264$, $p=0.002$) and response ($t=2.636$, $p=0.010$). However, no significant differences were observed in preparedness and recovery. This indicates that school size influences certain aspects of DRRM implementation, particularly those requiring rapid response or preventive actions. Similarly, ANOVA results showed significant differences in prevention and mitigation based on school risk level ($F=3.919$, $p=0.023$), but no significant differences in preparedness, response, or recovery.

Correlation analysis further demonstrated significant associations between school size and DRRM implementation in prevention and mitigation ($r=0.327$, $p=0.002$) and response ($r=-0.269$, $p=0.010$), but not in preparedness or recovery. By contrast, no significant associations were found between school risk level and DRRM implementation in any thematic area. These

results suggest that while school size influences implementation capacity, risk level does not necessarily determine effectiveness, possibly due to shared geographic and cultural contexts and uniform DepEd implementation guidelines.

Proposed enhanced DRRM plans

Based on the findings, three enhanced DRRM plans were proposed. The first, School Safety Facility Check (SSF Check), focuses on addressing vulnerabilities caused by unchecked facilities inside and outside schools. Proposed activities include facility orientations, crafting a safety manual, organizing facility check committees, conducting quarterly inventories, mapping stray animals, and submitting requests for the demolition of unsafe buildings and relocation of hazardous electric posts.

The second plan, School Staff Enhancement Program (SSEP), addresses the lack of training among SDRRM members by providing workshops and team-building activities on psychosocial support, pre- and post-disaster assessment, risk governance, early warning systems, and communication mechanisms. Regular earthquake, fire, and flood drills, along with benchmarking best practices from other schools, are included.

The third plan, Stakeholders' Support and Partnership (SSPa), emphasizes improving school-community partnerships through stakeholder orientations, LGU participation, provision of DRRM equipment, monthly forums, and property inventories. This plan seeks to create a communication mechanism linking schools, communities, and LGUs to strengthen disaster preparedness and resilience.

In summary, the findings reveal that while schools in Loreto West District demonstrate strong implementation of DRRM across all thematic areas, significant challenges remain in terms of training, resource availability, and coordination with external stakeholders. Addressing these gaps through the proposed enhancement plans would ensure safer learning environments and more resilient educational institutions.

Demographic profile of the respondents

The results revealed that out of the fifty-five participants, forty-nine (89.09%) were female and six (10.91%) were male, confirming the female dominance in the nursing profession as supported by Meadus (2000), who emphasized the gendered association of nursing with nurturing roles. In terms of cord care cases, the majority or forty-nine respondents (89.09%) reported having three cases, while only one student each (1.82%) recorded one, four, or five cases. This indicates that most students were able to meet the minimum requirement for cord care exposure, with repeated practice strengthening their understanding of the Unang Yakap policy. The low percentage of those with fewer or more cases reflects variations due to patient availability, clinical placement, and opportunities for competency development, as noted by Abalona et al. (2025b).

Performance in return demonstrations for Immediate Newborn Care showed that twenty-nine participants (52.73%) received a "very good" rating, while twelve (21.82%) were rated "excellent," another twelve (21.82%) were rated "good," and two (3.64%) earned a "passing"

mark. These findings reveal that the majority of students exhibited commendable competence, consistent with the Maternal and Child Nursing (MCN) curriculum's emphasis on enhancing both knowledge and skills in newborn care through hands-on demonstrations (Caorong & Bangcola, 2015; Drake, 2016). Similarly, the clinical performance evaluation showed twenty-eight students (50.91%) obtaining a "very good" rating, followed by seventeen (30.91%) with "good," eight (14.54%) with "excellent," and two (3.64%) with "passing." No respondents received a "fair" evaluation in either measure, indicating that most participants demonstrated competence, further supported by Munangatire et al. (2024), who emphasized the role of direct clinical exposure in developing proficiency and confidence.

Level of knowledge on the Unang Yakap policy

In assessing knowledge across the four time-bound interventions of the Unang Yakap Policy, findings varied. Within the first 30 seconds of life, twenty-seven students (49.09%) showed adequate knowledge, while thirteen (23.64%) displayed superior knowledge, eleven (20%) basic knowledge, and four (7.27%) minimal knowledge. This suggests that most students were aware of the critical need for immediate drying and warming to prevent hypothermia, echoing the findings of Mbava et al. (2019). However, the presence of minimal knowledge highlights inconsistent clinical exposure and training, an issue also identified by Brennan et al. (2017), who observed reliance on outdated practices in the absence of simulation-based training.

For the second intervention, conducted after 30 seconds of life, twenty-one participants (38.18%) demonstrated superior knowledge, fifteen (27.27%) adequate knowledge, and sixteen (29.09%) basic knowledge, while three (5.46%) exhibited minimal knowledge. The data imply that most students were confident with procedures such as skin-to-skin contact, repositioning, and suctioning, essential for neonatal stability. These findings align with Ashi et al. (2019), who noted that nursing students often grasp the importance of skin-to-skin contact. Still, a small percentage of students lacked clarity on the sequence of steps, a concern reinforced by Dong et al. (2020), who argued that learners with lower prior knowledge may experience cognitive overload in such high-pressure situations.

The third intervention, performed within one to three minutes of life, revealed the weakest knowledge retention. Twenty-four participants (43.64%) showed only basic knowledge, eighteen (32.73%) adequate knowledge, eight (14.54%) superior knowledge, and two (3.64%) minimal knowledge, while three (5.46%) had no knowledge at all. This marks the first instance of complete lack of knowledge within any intervention. Although students recognized procedures such as early breastfeeding initiation and delayed cord clamping, many struggled to prioritize or connect these steps with their life-saving outcomes. This deficiency is significant given the growing global emphasis on delayed cord clamping, with Jabeen et al. (2024) and Peberdy et al. (2022) both stressing the hematological benefits of the procedure and the persistent gap in clinical practice due to insufficient hands-on training.

For the fourth intervention, conducted within 90 minutes after delivery, nineteen students (34.54%) demonstrated adequate knowledge, sixteen (29.09%) superior knowledge, eighteen (32.73%) basic knowledge, and two (3.64%) minimal knowledge. These findings indicate stronger awareness of later newborn care measures such as breastfeeding support, danger sign monitoring, and temperature regulation. They are consistent with studies by Tali et al. (2022) and

Berhe et al. (2017), who observed high retention of breastfeeding knowledge among students. However, the persistence of minimal knowledge in a few respondents points to weaknesses in training for extended post-delivery care, particularly in interventions such as vitamin K administration and eye care, as documented by Teklehaimanot et al. (2017) and Hussein and Abbas (2022).

Relationship between participants' profile and knowledge

Statistical analysis revealed significant relationships between participants' profiles and their level of knowledge of the Unang Yakap Policy. Sex was shown to be a significant factor, with a chi-square value of 18.55 exceeding the critical value of 5.99, a P-value of 0.001, and a Cramer's V of 0.581, indicating a moderate correlation. Similarly, the number of cord care cases was significantly related to knowledge levels, with a chi-square value of 14.91 and a P-value of 0.046, demonstrating that greater clinical exposure contributes to improved understanding. Return demonstration performance also showed a strong influence, with a chi-square value of 70.87, P-value of 0.001, and a Cramer's V of 0.803, signifying that students who performed better in simulations tended to retain higher levels of knowledge. Likewise, clinical performance evaluations exhibited a strong correlation, with a chi-square value of 61.75, P-value of 0.001, and a Cramer's V of 0.749. Overall, the factor average yielded a chi-square value of 41.52, a P-value of 0.012, and a moderate correlation coefficient (Cramer's V = 0.586), confirming that demographic and experiential variables significantly affect knowledge acquisition.

These findings strongly affirm that hands-on training and consistent clinical exposure are pivotal in shaping students' knowledge of essential newborn care. They align with Barreira et al. (2023), who concluded that repeated practice and performance of policy-driven interventions improve nursing students' competencies. The evidence underscores that while theoretical instruction lays the foundation, experiential learning through demonstrations and clinical practice significantly enhances readiness for real-world application of the Unang Yakap Policy.

CONCLUSION

This study investigated the disaster risk reduction and management (DRRM) practices of the twelve elementary schools in Loreto West District, Division of Agusan del Sur, focusing on their profiles in terms of vulnerability risks, school size, topography, and risk level. The investigation was anchored on the Emergency Management Theory, which emphasizes preparedness, response, recovery, and mitigation as key pillars in addressing hazards and emergencies. A quantitative research design was employed to measure the level of collaborative efforts in implementing the School Disaster Risk Reduction and Resiliency Management (SDRRM) program, as mandated under DepEd Order No. 33, series of 2021. Through the use of validated survey questionnaires distributed to 145 members of SDRRM committees, the study explored not only the schools' profiles but also the extent of DRRM implementation, the challenges encountered, and the significant associations between school characteristics and program practices.

The findings revealed that schools exhibit multiple vulnerability risks across different domains. Inside classrooms, the most common issues were broken windows, swinging doors, and protruding nails from chairs and tables, while less frequent but notable problems included blocked corridors, broken or dilapidated ceilings, and the lack of medical kits and alarms. In laboratories, exposed and unlabeled chemicals posed significant hazards. Outside classrooms, condemnable buildings with cracks and structural weaknesses emerged as the most pressing concern, followed by broken toilet facilities, damaged furniture, and flooding. Around the school premises, the most significant risks identified were stray animals within school grounds and incomplete perimeter fences, while non-physical risks included the absence of learner release systems during emergencies and the lack of posted emergency hotlines. These findings underscore that schools are exposed to a combination of physical, environmental, and organizational vulnerabilities.

In terms of size, most respondents belonged to medium-sized schools, accounting for 73.6 percent of the sample, while 26.4 percent came from small schools. Geographically, 80.2 percent of schools were located less than one kilometer from a river, increasing their exposure to floods, while several others were situated on or near hills and mountains, making them prone to landslides and other terrain-related risks. Risk levels were generally assessed as medium by 42.9 percent of respondents, while 28.6 percent each rated their schools as low or moderate risk. This distribution indicates that schools in Loreto West District face varying degrees of vulnerability depending on their location and size.

Despite these risks, the level of DRRM implementation across the four thematic areas was consistently evaluated as “Very Good.” In prevention and mitigation, schools performed best in conducting orientations and posting early warning systems, with a mean rating of 4.42. Preparedness was also strong, with the development of learner databases (mean of 4.46) and capacity-building activities such as earthquake and fire drills (mean of 4.40) ranking highest. Response mechanisms were well established within schools, especially in terms of internal communication, though linkages with local government units were weaker, reflected in a lower mean score of 3.77. Recovery and rehabilitation efforts included the availability of alternative learning materials and mechanisms for class resumption, but the provision of psychosocial support and trained personnel for post-disaster assessment remained limited, both at a mean of 3.74. Overall, these results demonstrate that schools in the district maintain strong DRRM practices, though gaps remain in external coordination and psychosocial interventions.

The challenges encountered by SDRRM teams further explain these gaps. The most significant difficulties were the lack of materials and equipment (79.1 percent), excessive paperwork (76.9 percent), and insufficient training (69.2 percent). Other concerns included too many ancillary responsibilities, lack of external stakeholder support, and limited planning skills. Less common challenges were lack of teacher interest (15.4 percent) and lack of colleague support (7.7 percent), indicating that while internal cooperation is generally strong, logistical and capacity-related barriers hinder full implementation.

Statistical tests provided additional insights into how school characteristics influence DRRM practices. Significant differences were found between small and medium-sized schools in the areas of prevention and mitigation and response, with medium schools generally showing stronger implementation due to larger personnel and resource bases. No significant differences were found in preparedness or recovery, suggesting that these practices are consistently applied

regardless of size. When grouped by risk level, schools differed significantly only in prevention and mitigation, likely due to their varying geographical exposures. Correlation analyses confirmed that school size was significantly associated with prevention and mitigation ($r = .327$, $p = .002$) and response ($r = -.269$, $p = .010$), while risk level showed no significant associations with any thematic area. This suggests that institutional capacity, rather than geographic risk exposure, plays a more critical role in DRRM implementation.

Based on these findings, the study proposed three enhanced DRRM plans to address the identified gaps. The School Safety Facility Check (SSF Check) aims to address facility-related vulnerabilities through regular inspections, manuals, and community coordination. The School Staff Enhancement Program (SSEP) focuses on strengthening teachers' and SDRRM members' skills in pre- and post-disaster resiliency through training, drills, and benchmarking best practices. The Stakeholders' Support and Partnership (SSPa) plan emphasizes building stronger linkages with local government units and external partners to improve communication mechanisms, secure equipment and gadgets, and increase disaster awareness among the wider community.

In conclusion, this study confirms that while schools in Loreto West District exhibit considerable vulnerability due to their size, location, and facility conditions, they also demonstrate commendable practices in implementing DRRM programs. The challenges they face are primarily resource- and training-related rather than due to lack of commitment. It is recommended that school principals, DRRM coordinators, and committee members regularly convene to monitor mitigation measures and that schools integrate DRRM more fully into their improvement plans. Disaster preparedness activities should include not only drills but also the dissemination of information materials in local dialects to engage communities effectively. Furthermore, psychosocial support systems should be developed to meet the emotional and mental health needs of affected learners and stakeholders. Infrastructure projects in schools should adhere strictly to safety codes, and additional budgetary support from local government units should be allocated for equipment and communication tools. Finally, sustained training for all personnel in disaster-prone schools must be prioritized to ensure resilience, reduce vulnerabilities, and safeguard both students and teachers. Through these measures, schools in Loreto West District can strengthen their role as safe havens for learners while building a culture of preparedness and resilience within their communities.

REFERENCES

- Bhardwaj, P. (2019). Types of sampling in research. *Journal of the Practice of Cardiovascular Sciences*, 5(3), 157.
- Cañete, S. M. Regression model for the professional engagement among high school teachers in disaster risk reduction management.
- Cubillas, A. U. (2018). The implementation of the elementary schools. *International Journal of Current Research*.

- Dimalanta, R. C., & Salcedo, R. E. (2018). Disaster risk reduction and management capability of coordinators in schools division office of San Carlos City, Pangasinan. *PSU Multidisciplinary Research Journal*, 1(2), 35–44.
- Farazmand, A. (2017). Crisis and emergency management: Theory and practice. In *Crisis and emergency management* (pp. 1–10). Routledge.
- Gabion, J. G., & Bernardino, L. T., Jr. Teachers' awareness on the implementation of the school-based disaster management program: Bases for a proposed action plan.
- Gagani, R. F. M., & Montalban, R. (2019). Disaster and risk reduction preparedness evaluation of the 6th district schools of Lapu-Lapu City. *American Journal of Humanities and Social Sciences Research*, 203–206.
- Gumasing, M. J. J., Prasetyo, Y. T., Ong, A. K. S., Nadlifatin, R., & Persada, S. F. (2022). Determining factors affecting the perceived preparedness of super typhoon: Three broad domains of ergonomics approach. *Sustainability*, 14(19), 12202. <https://doi.org/10.3390/su141912202>
- Ibrahim, A. K., & Pezario, F. I. R. (2019). Hindering factors in implementing the disaster risk reduction and management plan of Daliao Elementary School: Basis for strengthening DRRM program. *Ascendens Asia Journal of Multidisciplinary Research Abstracts*, 3(2N).
- Lapada, A. (2022). Disaster risk reduction knowledge among Filipino senior high school students. *Journal of Social Sciences Review*, 2(1), 56–73.
- Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications.
- Lopez, A. A., Echavez, N. A., Magallen, J. C., & Sales, E. L. (2018). Level of compliance with the risk reduction and disaster preparedness program among public secondary schools in Buenavista, Bohol, Philippines. *ACADEME*, 12.
- Mamon, M. A. C. (2020). Implementation and practices of the comprehensive school safety framework: Views of senior high school students.
- Martinez, M. Q., Mella, M. C. G., & Lisay, M. S. (2019). Capacity-building initiatives for a disaster-ready school community: Development of a comprehensive disaster risk reduction management plan.
- Mella, M. C. G., Martinez, M. Q., & Lisay, M. S. (2021). Capacity-building initiatives for a disaster-ready school community: Development of a comprehensive disaster risk reduction management plan. *I DREAM Research Journal*, 222.

Nakileza, B. R., & Nedala, S. (2020). Topographic influence on landslides characteristics and implication for risk management in upper Manafwa catchment, Mt Elgon Uganda. *Geoenvironmental Disasters*, 7, 1–13.

Rahmawati, Mathias, S., Reaney, S., Vesuviano, G., Suwarman, R., & Ramdhan, A. (2022). Impact of land cover, rainfall, and topography on flood risk in West Java. *Natural Hazards*. <https://doi.org/10.1007/s11069-022-05737-6>

Salita, C., Tiongco, R. E., & Kawano, R. (2021). Assessment of school teachers' disaster preparedness using the extended parallel process model: A cross-sectional study in Angeles City, Philippines. *Journal of Public Health*, 29(6), 1275–1282.

Sukamolson, S. (2007). Fundamentals of quantitative research. Language Institute Chulalongkorn University, 1(3), 1–20.

Tabilon-Tizon, R., & Comighud, S. M. T. (2020). Implementation of the public schools' disaster risk reduction management program and level of capabilities to respond. UBT Knowledge Center, 48.

Tawas, S. K. A., & Millan, M. S. R. (2021). Susceptibility and proximity of schools to potential landslides in Agusan del Sur: A geospatial analysis. *Revista Geintec-Gestao Inovacao E Tecnologias*, 11(3), 1606–1613.

Tizon, R. T., & Comighud, S. M. T. (2020). Implementation of the public schools' disaster risk reduction management program and level of capabilities to respond.

Toledo, R. J. T., Tantoy, O. A., & Paraiso, R. M. (2020). Development of disaster risk management and mitigation extension program for school-aged children in the province of Bukidnon. *Asia Pacific Journal of Social and Behavioral Sciences*, 18, 62.

Tolentino, K. (2021). Education in emergency—the school managers' practices on risk reduction and management of disaster. *Journal of Education, Management and Development Studies*, 1(1), 10–23.

Tsioulou, A., Faure Walker, J., Lo, D. S., & Yore, R. (2021). A method for determining the suitability of schools as evacuation shelters and aid distribution hubs following disasters: Case study from Cagayan de Oro, Philippines. *Natural Hazards*, 105(2), 1835–1859.

Ughulu, S., & Thomas, I. (2021). Applicability of emergency management theory in the management of COVID-19 pandemic in Nigeria. *Global Journal of Social Sciences*, 20, 87–97. <https://doi.org/10.4314/gjss.v20i1.9>