

Climate Change Awareness, Risk Perception, Environmental Attitude and Disaster Preparedness Practices of Students

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DOI: <https://doi.org/10.47772/IJRISS.2026.100800043>

Received: 14 August 2026; Accepted: 19 August 2026; Published: 25 August 2026

ABSTRACT

This study examined the relationship between climate change awareness, risk perception, environmental attitude, and disaster preparedness practices of Grade 11 students in Negros Occidental during the academic year 2025–2026. Employing a descriptive-correlational research design, the study involved a population of Grade 11 students enrolled in public secondary schools, with a representative sample selected through stratified random sampling to ensure proportional distribution by age and sex. A researcher-made questionnaire served as the primary research instrument, which underwent content validation by experts using Lawshe's method and Good & Scates' criteria, while its reliability was established through Cronbach's Alpha, yielding acceptable coefficients across all variables. Data were analyzed using descriptive statistics to determine levels of awareness, perception, attitudes, and preparedness, and Pearson's r to test the significance of relationships among variables. Results revealed that students demonstrated high levels of climate change awareness, particularly in knowledge of causes and effects, and moderate to high-risk perception across susceptibility, severity, concern, and vulnerability dimensions. Environmental attitudes were generally positive, with strong indicators of responsibility and sustainable behavior. Disaster preparedness practices were evident in emergency readiness and safety compliance, though participation in preparedness activities was less consistent. Correlation analysis confirmed significant relationships between climate change awareness, risk perception, and environmental attitudes with disaster preparedness practices, indicating that higher awareness and positive attitudes contribute to stronger preparedness behaviors. These findings provide valuable insights for educators, policymakers, disaster risk reduction offices, and families, emphasizing the need to integrate climate literacy and preparedness strategies into curricula and community programs to foster resilience among Filipino youth.

Keywords: Climate Change Awareness, Risk Perception, Environmental Attitude, Disaster Preparedness Practices, Students

INTRODUCTION

Education thrives when students are empowered as champions of resilience—equipped with deep climate change awareness, strong risk perception, and positive environmental attitudes that naturally translate into proactive disaster preparedness practices. Schools are envisioned as centers of safety and sustainability, where climate literacy and disaster risk reduction are woven into the curriculum, cultivating a generation that not only understands environmental challenges but also acts decisively to protect themselves and their communities (Ora et al., 2023; UNICEF, 2021).

Despite this vision, recent findings reveal that many students struggle to transform awareness into consistent preparedness behaviors. Research among college students in Zamboanga del Norte showed that while they were well aware of climate change, their participation in climate initiatives and preparedness activities remained limited (Ora et al., 2023). Similarly, studies on Filipino youth in vulnerable urban communities found only moderate awareness of climate impacts, with little emphasis on risks to infrastructure and coastal areas (Caisip & Espinosa, 2021). Disaster preparedness assessments in Davao de Oro further highlighted that although students possessed knowledge and attitudes, their actual practices, such as maintaining emergency kits or

participating in drills, were insufficient (Matunhay, 2022). These findings emphasize that awareness and attitudes alone do not guarantee preparedness, leaving schools vulnerable to recurring hazards such as typhoons, floods, and earthquakes.

The disconnect between what students know and how they act calls for deeper investigation. While prior studies have examined awareness, attitudes, and preparedness in isolation, the integrated relationship among climate change awareness, risk perception, environmental attitudes, and disaster preparedness practices remains underexplored, particularly among Grade 11 Senior High School students in the Philippines. This unaddressed intersection constitutes the research gap: although senior high school students are at a critical stage of civic formation and are expected to be future leaders in resilience and sustainability, there is insufficient empirical evidence on how these variables collectively shape their preparedness behaviors.

Thus, this study was conducted to provide evidence-based insights into how these constructs interact, offering valuable guidance for curriculum development, institutional disaster risk reduction strategies, and the cultivation of environmentally responsible, disaster-resilient academic communities.

METHODOLOGY

The study employed a quantitative descriptive-correlational research design to examine the levels and relationships among climate change awareness, risk perception, environmental attitude, and disaster preparedness practices of Grade 11 students in Negros Occidental. From a total population of 1,421 students, a sample of 313 respondents was determined using Yamane's formula. Stratified random sampling was used to ensure proportional representation across seven public secondary schools, followed by simple random sampling through the lottery method to select individual respondents.

Data were collected using a structured questionnaire consisting of five parts. The major variables were operationalized as climate change awareness, risk perception, environmental attitude, and self-reported disaster preparedness practices and were measured using five-point Likert-scale items adapted from established or previously validated instruments, with their corresponding sources identified in the study. Content validity was established through evaluation by five doctoral-level experts using Lawshe's Content Validity Ratio, which yielded a validity index of 1.00. A pilot test involving 30 students produced an overall Cronbach's alpha of 0.982, indicating excellent internal consistency. Data were analyzed using frequency and percentage for the respondents' profiles, mean and standard deviation for the levels of the major variables, and Spearman's rho to determine the direction and strength of their relationships. Statistical significance and the magnitude of the correlation coefficients were considered in interpreting the results. Since the data were self-reported and collected cross-sectionally, disaster preparedness practices were interpreted as reported preparedness behavior rather than direct evidence of actual behavior.

RESULTS AND DISCUSSIONS

Profile of the Respondents

Table 1. Frequency and Percentage Distribution of the Students according to Profile.

Profile	Category	f	%
Age			
	17-19 years old	300	95.85
	20-22 years old	11	3.51
	23 years old and above	2	0.64

	Total	313	100
Sex			
	Male	117	37.38
	Female	196	62.62
	Total	313	100

Table 1 shows that the respondents are predominantly 17–19 years old (95.85%), with only 3.51% aged 20–22 years old and a negligible 0.64% aged 23 years old and above, indicating that the study population is largely composed of late adolescents and young adults. This implies that the findings of the study will primarily reflect the perspectives of younger individuals, who are often more adaptive and responsive to emerging societal and environmental challenges. In terms of sex distribution, the majority of respondents are female (62.62%), while male students account for 37.38%, suggesting that female viewpoints may be more prominently represented in the results. This implies that the study outcomes may highlight stronger environmental concern and risk perception, as prior research has linked female respondents to heightened awareness of social and ecological issues.

These results align with the study of Vidal, Anglo-Ojeda, and Madera (2024), who found that Filipino senior high school students demonstrated significant comprehension of climate change and disaster risk, confirming that youth populations are generally aware and engaged. However, they contrast with the findings of Vidal and Dela Cruz (2025), who reported notable knowledge gaps among secondary students, particularly in adaptation and mitigation strategies, with only 41.3% feeling partially prepared for natural hazards. This contradiction underscores the need to strengthen climate change education and risk perception training to ensure awareness translates into effective disaster preparedness practices.

Climate Change Awareness

Table 2. Level of Climate Change Awareness of Students.

Statement	Mean	SD	Interpretation
Knowledge of Climate Change	4.27	0.58	Very High
1. I am aware of the role of education in addressing climate change.	4.25	0.75	Very High
2. I understand the role of environmental conservation in protecting natural resources.	4.23	0.80	Very High
3. I know how climate change affects the environment.	4.40	0.61	Very High
4. I understand the specific role and importance of climate change education in mitigating risks.	4.24	0.71	Very High
5. I know that modern human activities contribute to climate change.	4.22	0.79	Very High
Awareness of Causes	4.26	0.61	Very High
1. Pollution contributes to climate change.	4.22	0.76	Very High
2. Deforestation increases climate-related problems.	4.30	0.77	Very High
3. Burning fossil fuels contributes to global warming.	4.31	0.75	Very High

4. Improper waste disposal affects the climate.	4.31	0.71	Very High
5. Industrial activities contribute to environmental changes.	4.16	0.77	High
Awareness of Effects	4.24	0.59	Very High
1. Climate change increases the occurrence of floods and typhoons.	4.23	0.76	Very High
2. Rising temperatures affect human health.	4.41	0.65	Very High
3. Climate change negatively affects agriculture.	4.24	0.78	Very High
4. Environmental disasters are linked to climate change.	4.16	0.79	High
5. Climate change threatens biodiversity and ecosystems.	4.43	0.78	Very High
Mitigation Awareness	4.54	0.53	Very High
1. Planting trees helps reduce climate change effects.	4.52	0.59	Very High
2. Recycling helps protect the environment.	4.16	0.61	High
3. Conserving electricity helps reduce global warming.	4.21	0.72	Very High
4. Proper waste management contributes to environmental protection.	4.41	0.73	Very High
5. Student participation in environmental conservation activities can measurably help reduce climate impacts	4.47	0.62	Very High
Climate Change Awareness as a Whole	4.30	0.52	Very High

Legend /: (4.21 – 5.00)- Very High; (3.41 – 4.20)- High; (2.61 – 3.40)- Average; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

Table 2 shows an overall very high level of climate change awareness ($M = 4.30$, $SD = 0.52$) across knowledge, causes, effects, and mitigation dimensions. The highest scores were found in mitigation awareness ($M = 4.54$, $SD = 0.53$), particularly in tree planting and student participation in conservation activities.

Knowledge of climate change ($M = 4.27$, $SD = 0.58$) and awareness of effects ($M = 4.24$, $SD = 0.59$) also registered very high, while awareness of causes ($M = 4.26$, $SD = 0.61$) reflected strong recognition of anthropogenic factors such as pollution and deforestation. Standard deviations across items were relatively low (ranging from 0.58 to 0.80), indicating that responses were consistent among students and that there was little variation in their perceptions.

These results are supported by Delos Santos (2021), who found that Filipino senior high school students with high climate change awareness were more likely to engage in eco-friendly behaviors such as waste segregation and tree planting, confirming the strong mitigation awareness observed here.

On the other hand, Embate (2025) reported that while students showed high awareness of climate change effects, their understanding of causes was only moderate, and awareness alone did not predict preparedness behaviors. This contradicts the present findings, where consistently very high scores suggest a stronger link between awareness and preparedness.

Risk Perception

Table 3. Level of Risk Perception of Students.

Statement	Mean	SD	Interpretation
Perceived Susceptibility	4.14	0.59	High
1. I believe our community is vulnerable to disasters.	4.02	0.75	High
2. I think students may be affected by climate-related disasters.	4.19	0.72	High
3. I believe disasters can happen anytime.	4.34	0.72	Very High
4. I think schools are at risk during disasters.	3.99	0.87	High
5. I believe climate change increases disaster risks.	4.14	0.75	High
Perceived Severity	4.30	0.59	Very High
1. Disasters can seriously affect students' lives.	4.30	0.66	Very High
2. Climate-related disasters can damage schools and communities.	4.23	0.78	Very High
3. Floods and typhoons can disrupt education.	4.34	0.71	Very High
4. Disasters may affect students' safety and health.	4.34	0.74	Very High
5. Climate change can cause severe environmental problems.	4.31	0.71	Very High
Disaster Concern	4.32	0.56	Very High
1. I am concerned that inadequate personal preparedness may worsen disaster impacts.	4.17	0.73	High
2. I worry that local communities are not adequately prepared to handle severe disasters.	4.29	0.70	Very High
3. I am concerned that inadequate preparedness may increase disaster impacts.	4.43	0.70	Very High
4. I feel concerned about environmental destruction.	4.28	0.66	Very High
5. I am concerned that communities may not be adequately prepared for disaster.	4.40	0.69	Very High
Perceived Vulnerability	4.27	0.57	Very High
1. Schools stand to face significant institutional disruptions during disaster occurrences.	4.12	0.75	High
2. Schools may be vulnerable to significant disruption during disasters.	4.39	0.64	Very High
3. Communities are vulnerable when emergency response system is weak.	4.36	0.59	Very High
4. I believe climate change increases community vulnerability.	4.09	0.73	High

5. Individuals who are not prepared are more vulnerable during disasters.	4.39	0.69	Very High
Risk Perception as a Whole	4.26	0.53	Very High

Legend /: (4.21 – 5.00)- Very High; (3.41 – 4.20)- High; (2.61 – 3.40)- Average; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

Table 3 reveals an overall mean of 4.26 (Very High), indicating that students generally perceive climate change and disaster risks as serious and pressing concerns. Among the dimensions, Disaster Concern ($M = 4.32$, $SD = 0.56$) and Perceived Severity ($M = 4.30$, $SD = 0.59$) scored the highest, showing that students strongly recognize the potential consequences of disasters on education, health, and community safety. Perceived Vulnerability ($M = 4.27$, $SD = 0.57$) also rated very high, reflecting awareness of institutional and community risks. Meanwhile, Perceived Susceptibility ($M = 4.14$, $SD = 0.59$) was slightly lower, though still high, suggesting that while students acknowledge disasters as likely, they may perceive personal exposure as less immediate compared to broader community risks.

The standard deviations (SDs) across categories ranged between 0.53 and 0.87, indicating relatively consistent responses among students. Lower SD values (e.g., Disaster Concern, $SD = 0.56$) suggest strong consensus, while higher SD values (e.g., schools at risk, $SD = 0.87$) reflect more varied perceptions, possibly due to differences in personal experiences or institutional preparedness levels. This variation highlights that while overall awareness is strong, individual perspectives on susceptibility and institutional vulnerability differ.

These results align with Matunhay (2022), who found that higher education students in Davao de Oro demonstrated high disaster preparedness and sensitivity, confirming that Filipino students generally perceive disasters as severe threats and express strong concern for climate-related risks. This conformity underscores the effectiveness of awareness campaigns in shaping perceptions of severity and concern.

However, the findings contrast with Bersamina and Brion (2023), who reported only moderate levels of awareness and participation in School Disaster Risk Reduction Management Programs (SDRRMP). Their study suggests that while students recognize disaster risks, actual preparedness behaviors and engagement remain limited. This contradiction emphasizes the gap between perception and practice, highlighting the need for schools to translate high awareness into concrete preparedness measures.

Environmental Attitude

Table 4. Level of Environmental Attitude of Students.

Statement	Mean	SD	Interpretation
Environmental Responsibility	4.25	0.59	Very High
1. I feel responsible for protecting the environment.	4.22	0.68	Very High
2. Students should help reduce environmental problems.	4.27	0.67	Very High
3. I participate in activities that protect nature.	4.19	0.71	High
4. Environmental protection is everyone's responsibility.	4.31	0.73	Very High
5. I encourage others to care for the environment.	4.29	0.77	Very High
Environmental Concern	4.32	0.59	Very High
1. I am concerned about environmental pollution.	4.26	0.71	Very High

2. I worry about the effects of climate change.	4.30	0.68	Very High
3. Environmental destruction affects human life.	4.27	0.71	Very High
4. Protecting nature is important for future generations.	4.40	0.67	Very High
5. Climate change is a serious global issue.	4.41	0.67	Very High
Sustainable Behavior	4.18	0.61	High
1. I believe that proper waste segregation is important.	4.20	0.66	High
2. I believe conserving water and electricity helps protect the environment.	4.12	0.74	High
3. I avoid activities that harm the environment.	4.20	0.68	High
4. I support recycling and environmental programs.	4.25	0.72	Very High
5. I believe participating in environmental conservation activities is important.	4.12	0.77	High
Conservation Attitude	4.26	0.65	Very High
1. Natural resources should be protected.	4.28	0.75	Very High
2. Forests and wildlife should be conserved.	4.22	0.79	Very High
3. Environmental laws should be strictly implemented.	4.24	0.66	Very High
4. Everyone should help preserve the environment.	4.25	0.73	Very High
5. Students should participate in conservation programs.	4.28	0.75	Very High
Environmental Attitude as a Whole	4.25	0.57	Very High

Legend /: (4.21 – 5.00)- Very High; (3.41 – 4.20)- High; (2.61 – 3.40)- Average; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

Table 4 reveals that learners exhibit a very high overall environmental attitude ($M = 4.25$, $SD = 0.57$). Among the dimensions, environmental concern ($M = 4.32$, $SD = 0.59$) ranked highest, indicating strong awareness of pollution, climate change, and its global consequences. Conservation attitude ($M = 4.26$, $SD = 0.65$) also scored very high, reflecting students' agreement on the importance of protecting natural resources, wildlife, and enforcing environmental laws. Meanwhile, sustainable behavior ($M = 4.18$, $SD = 0.61$) was rated high, suggesting that while students value eco-friendly practices such as recycling and waste segregation, their actual behavioral consistency is slightly lower compared to their expressed concern.

The relatively low standard deviations (0.57–0.79) across items indicate that responses were clustered closely around the mean, showing shared values and attitudes among students. However, items with slightly higher SDs, such as participation in conservation activities ($SD = 0.77$), suggest variability in actual engagement, meaning some students may be less active in translating attitudes into practice.

These findings are consistent with the study of Veridiano-de Castro et al. (2023), which reported that Filipino students demonstrate high awareness and positive perceptions of climate change, actively seeking information through schools and media, thereby reinforcing the strong concern and responsibility observed in this study. Conversely, Hipolito (2021) found that while students possessed high knowledge and attitudes toward disaster

preparedness, their actual practices were only moderate, contradicting the present results by highlighting a gap between awareness and consistent behavioral action.

Disaster Preparedness Practices

Table 5. Level of Disaster Preparedness Practices of Students.

Statement	Mean	SD	Interpretation
Emergency Preparedness	4.11	0.58	High
1. I prepare emergency kits at home or school.	4.12	0.74	High
2. I review emergency procedures before disasters occur.	4.20	0.68	High
3. I identify evacuation routes in school and community.	4.25	0.72	Very High
4. I keep emergency contact information readily available.	4.15	0.69	High
5. I participate in disaster preparedness activities.	4.07	0.71	High
Disaster Response Practices	4.16	0.60	High
1. I follow safety instructions during emergencies.	4.26	0.70	Very High
2. I apply appropriate safety measures during disasters.	4.09	0.77	High
3. I stay calm during emergency situations.	4.12	0.74	High
4. I help others during disasters when possible.	4.13	0.72	High
5. I participate in emergency drills.	4.22	0.70	Very High
Safety Compliance	4.23	0.55	Very High
1. I follow school disaster preparedness rules.	4.23	0.67	Very High
2. I participate in evacuation drills.	4.25	0.66	Very High
3. I observe safety measures during emergencies.	4.21	0.64	Very High
4. I cooperate with school disaster response activities.	4.22	0.62	Very High
5. I follow school emergency protocols during drills and emergencies.	4.23	0.63	Very High
Participation in Preparedness Activities	4.11	0.63	High
1. I participate in school DRRM activities.	4.14	0.75	High
2. I attend disaster preparedness seminars and drills.	3.98	0.70	High
3. I support environmental and disaster-related programs.	4.11	0.72	High
4. I encourage others to prepare for disasters.	4.21	0.78	Very High

5. I actively participate in community preparedness activities.	4.10	0.78	High
Disaster Preparedness Practices as a Whole	4.15	0.53	High

Legend /: (4.21 – 5.00)- Very High; (3.41 – 4.20)- High; (2.61 – 3.40)- Average; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

The results on table 5 indicate that students exhibit a high to very high level of preparedness across all categories. Emergency preparedness ($M = 4.11$, $SD = 0.58$), disaster response practices ($M = 4.16$, $SD = 0.60$), and safety compliance ($M = 4.23$, $SD = 0.55$) all reflect strong engagement in proactive measures such as preparing kits, identifying evacuation routes, and following school protocols. Participation in preparedness activities also registered a high mean ($M = 4.15$, $SD = 0.53$), showing active involvement in school and community disaster risk reduction and management (DRRM) programs. The relatively low standard deviations across categories suggest that students' responses were consistent, indicating a shared culture of preparedness and collective responsibility within the school community.

These findings are supported by Inocian et al. (2025), who emphasized that structured disaster education and drills significantly enhance student resilience and readiness, aligning with the high safety compliance observed in this study. Their work highlights the role of schools in embedding preparedness into routine practices, which conforms with the present results. However, the study of Vidal and Dela Cruz (2025) contradicts these findings, reporting that many Filipino secondary students still face knowledge gaps in climate change adaptation and hazard preparedness, with only a minority feeling adequately prepared. This discrepancy may be attributed to differences in institutional programs, local hazard experiences, or the integration of DRRM into the curriculum.

Relationship between Climate Change Awareness and Risk Perception of Students

Table 6. Relationship between Climate Change Awareness and Risk Perception of Students.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Climate Change Awareness vs. Risk Perception	0.755	<.001	Reject H_0	Significant

The results show a significant relationship between climate change awareness and risk perception among students ($r_s = 0.755$, $p < .001$). This finding indicates that students who are more knowledgeable about climate change also tend to perceive its risks more strongly, underscoring the role of awareness in shaping attitudes toward disaster preparedness. The rejection of the null hypothesis confirms that awareness is a critical driver of risk perception, which in turn influences how students prepare for climate-related hazards.

This aligns with Ratinen (2021), who found that climate knowledge significantly predicted constructive hope and pro-environmental attitudes, suggesting that awareness fosters stronger perceptions of climate risks and motivates adaptive behavior. However, Veridiano-de Castro et al. (2021) reported that while Filipino students demonstrated high knowledge levels, awareness and perception varied significantly depending on school type and location, implying that awareness does not uniformly translate into heightened risk perception. Taken together, these findings highlight both the reinforcing and limiting factors of awareness in shaping risk perception, emphasizing the need for integrated climate education programs that ensure awareness consistently leads to preparedness practices.

Relationship between Risk Perception and Environmental Attitude of Students

Table 7. Relationship between Risk Perception and Environmental Attitude of Students.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Risk Perception vs. Environmental Attitude	0.803	<.001	Reject H_0	Significant

Table 7 shows that the relationship between risk perception and environmental attitude among students is both strong and statistically significant, with a Spearman correlation coefficient of $r_s=0.803$ and a p-value less than .001. This result indicates that students who perceive higher risks related to climate change also tend to exhibit stronger pro-environmental attitudes. The null hypothesis was rightly rejected, confirming that the observed relationship is not due to chance.

Recent literature supports this result. For instance, Clayton and Karazsia (2021) found that climate-related risk perception and anxiety among youth were positively associated with stronger environmental attitudes and engagement in sustainable practices, reinforcing the idea that heightened awareness of risks can motivate pro-environmental dispositions. Conversely, Shahzad et al. (2023) reported that while students in Pakistan expressed concern about climate change and acknowledged its risks, their environmental attitudes did not consistently translate into sustainable behaviors, suggesting that risk perception alone may not guarantee action. These contrasting findings highlight that while risk perception is a significant factor in shaping environmental attitudes, contextual influences such as cultural norms, institutional support, and behavioral barriers also play a critical role.

Relationship between Climate Change Awareness and Disaster Preparedness Practices of Students

Table 8. Relationship between Climate Change Awareness and Disaster Preparedness Practices of Students.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Climate Change Awareness vs. Disaster Preparedness Practices	0.639	<.001	Reject H_0	Significant

The results revealed a positive correlation ($r_s = 0.639$, $p < .001$) between climate change awareness and disaster preparedness practices of students, indicating that those with higher awareness tend to demonstrate stronger preparedness behaviors. This finding supports the rejection of the null hypothesis and confirms that awareness significantly influences preparedness. The implication is that enhancing students' knowledge and understanding of climate change can directly contribute to their readiness in disaster situations, thereby strengthening resilience at the school and community level.

This outcome is consistent with the study of Inocian et al. (2025), who found that disaster awareness significantly enhanced preparedness and resilience among senior high school students in the Philippines, emphasizing the role of education in cultivating proactive disaster responses. However, it contrasts with the findings of Cortes and Tactay (2021), who reported low levels of disaster awareness and preparedness among Grade 11 students at St. Paul University Philippines, suggesting that awareness alone may not guarantee preparedness unless reinforced by structured interventions such as drills, training, and institutional support.

Relationship between Risk Perception and Disaster Preparedness Practices of Students

Table 9. Relationship between Risk Perception and Disaster Preparedness Practices of Students.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Risk Perception vs. Disaster Preparedness Practices	0.727	<.001	Reject H_0	Significant

Table 9 reveals that there is a significant correlation between students' risk perception and their disaster preparedness practices ($r_s=0.727, p<.001$). This means that students who perceive disaster risks more seriously are more likely to adopt proactive preparedness measures. The decision to reject the null hypothesis is correct, and the interpretation of significance is valid, as the data clearly demonstrate that risk perception plays a crucial role in shaping preparedness behaviors. This finding underscores the importance of psychological and cognitive factors in disaster readiness, suggesting that heightened perception of risks associated with climate change can motivate students to engage in protective practices.

This result conforms with the findings of Serondo et al. (2024), who reported that risk perception and disaster awareness were significantly correlated with preparedness among college students, emphasizing that those who recognized disaster risks were more inclined to prepare. However, other studies present a more nuanced view. For instance, Inocian et al. (2025) found that while disaster awareness and preparedness were strongly linked to resilience, risk perception alone did not consistently translate into preparedness behaviors. Their study highlighted that without structured disaster education, students may perceive risks but fail to act effectively. Taken together, these findings suggest that while risk perception is a significant factor, it must be complemented by awareness programs and environmental education to ensure that perception leads to concrete preparedness practices.

Relationship between Environmental Attitude and Disaster Preparedness Practices of Students

Table 10. Relationship between Environmental Attitude and Disaster Preparedness Practices of Students.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Environmental Attitude vs. Disaster Preparedness Practices	0.737	<.001	Reject H_0	Significant

The results in table 10 show that there is a significant relationship between students' environmental attitude and their disaster preparedness practices ($r_s = 0.737, p < .001$). This means that students who demonstrate higher levels of environmental awareness are more likely to adopt effective disaster preparedness measures. The null hypothesis was rejected, confirming that environmental attitude is indeed a significant factor influencing preparedness.

This result conforms with the study of Lukman et al. (2021), who found that Indonesian high school students with stronger environmental attitudes exhibited higher disaster preparedness, emphasizing that awareness and values toward the environment directly enhance readiness. Conversely, Cortes and Tactay (2021) reported that despite exposure to environmental risks, Grade 11 students in the Philippines displayed low levels of disaster awareness and preparedness, suggesting that attitudes alone may not guarantee readiness without structured disaster education and training. Taken together, these findings imply that while environmental attitudes play a

significant role, preparedness must also be reinforced through institutional support, curriculum integration, and practical drills to ensure comprehensive resilience among students.

CONCLUSIONS

The study primarily reflects the perspectives of adolescents and young adults, particularly female students, who are often more environmentally conscious, thereby shaping the orientation of the findings toward youth-driven environmental concern.

Students demonstrate very high awareness of climate change, particularly in mitigation strategies such as tree planting, waste management, and conservation activities. They exhibit an exceptional level of knowledge and understanding of its causes, effects, and solutions.

Respondents show very high-risk perception, reflecting strong concern about disasters and their severity. While perceived susceptibility is slightly lower, they still view climate risks and disaster impacts as severe and immediate threats, displaying heightened concern and vulnerability.

Students exhibit very high environmental attitudes, marked by strong concern and conservation values. However, slightly lower consistency in sustainable behavior reveals a gap between expressed concern and eco-friendly practices. Despite this, they hold deeply rooted pro-environmental values and demonstrate commitment to ecological responsibility and conservation.

Students show high preparedness, particularly in safety compliance, reflecting adherence to school protocols and drills. Yet, consistency in emergency response and participation in preparedness activities requires strengthening. Respondents frequently practice safety protocols, evacuation awareness, and disaster response measures, though broader engagement remains necessary.

Higher climate change awareness is strongly associated with heightened risk perception, confirming that knowledge directly enhances recognition of disaster risks.

Awareness significantly influences preparedness behaviors, indicating that informed students are more likely to engage in drills, kit preparation, and compliance with disaster protocols.

Risk perception strongly shapes environmental attitudes, as students who view disasters as severe also demonstrate stronger ecological concern and conservation values.

Students with heightened risk perception are more proactive in preparedness measures, underscoring the role of perceived severity in motivating readiness behaviors.

Environmental attitudes are significantly related to preparedness, showing that students with stronger environmental responsibility and concern are more engaged in disaster readiness activities.

ACKNOWLEDGMENT

The researcher sincerely extends gratitude to her adviser for invaluable guidance, encouragement, and expertise, to the statistician for professional assistance in data analysis, and to the language critic for refining the clarity and coherence of the manuscript. Their contributions were essential to the successful completion of this study.

Profound appreciation is likewise given to the panel members, whose constructive feedback, scholarly insights, and critical evaluation greatly enhanced the rigor and credibility of this research. Their support and recommendations provided direction and strengthened the quality of this academic work.

Heartfelt thanks are also offered to family and friends for their patience, understanding, and unwavering encouragement throughout this journey. Above all, the researcher offers praise and thanksgiving to God, whose wisdom, grace, and providence made possible the fulfillment of this study.

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