DISASTER KNOWLEDGE AND AWARENESS ASSOCIATED TO PREPAREDNESS IN THE FIRST CONGRESSIONAL DISTRICT IN ZAMBOANGA DEL NORTE

Joseph Salvel R. Campiseño
Jose Rizal Memorial State University, Main Campus, Dapitan City

Abstract

Knowledge and awareness coming from the community on the natural and human-induced disasters are crucial for the preparedness activities to be responsive to the needs of the people. This study was conducted to ascertain the disaster knowledge, disaster awareness, and disaster preparedness in the local communities of the first congressional district in the province of Zamboanga del Norteand to determine if disaster knowledge and awareness are associated to disaster preparedness among the constituents of the province. This study revealed that about 14 percent of the surveyed respondents possessed knowledge on disaster events, more than 75 percent were unaware about the presence of disasters, and almost 75 percent were unprepared on disasters to take place. It was also found out that disaster knowledge and awareness were significantly associated to preparedness. Hence, educating the respondents provides better opportunities for them in enhancing local knowledge and community awareness to access information related to the threats and the impacts of all hazards, risks, and vulnerabilities and, consequently, develop preparedness scheme to prevent, mitigate, response, and manage the occurrence of disasters.

Keyword and Phrases: *disaster knowledge, disaster awareness, disaster preparedness*

Introduction

Disaster knowledge is acknowledge system embedded in the local communities and is based on accumulations of empirical observation and interaction with the environment. On the other hand, disaster awareness pertains to engaging and educating individuals to actively and meaningfully learn from and share information with different segments of the community to enhance knowledge, skills and behaviors that promote optimum disaster preparedness opportunities. In short, disaster knowledge is a local knowledge and disaster awareness is community awareness which both link to the need of local disaster preparedness. Seamlessly, disaster preparedness is seen to have associated to local knowledge and community awareness on the occurrence of disasters.

According to Dekens (2007), taking local knowledge into consideration in terms of knowing natural and human-induced hazards could help implementing organizations improve their planning for and implementation of disaster preparedness activities. Local knowledge and practices need to be understood as adaptive responses to internal and external changes which result in disaster preparedness at local level. The International Federation of Red Cross and Red Crescent Societies (2000) also stressed that community disaster awareness informs and trains local populations about how to prepare for natural disasters and emergencies and reduces a population's vulnerability to specific hazards. In

a narrower sense, disaster preparedness is conceptualized based on disaster local knowledge and community disaster awareness.

However, in an interview with Reyes posted by the American Red Cross (2013) in the preparedness issues in Philippines Typhoon Yolanda pointed out that there was not enough public understanding of storm surge. It needs to improve risk knowledge to promote better understanding of this threat. Further, the public was not planning for worst case scenarios, thus, more attention is needed on awareness scenario planning for extreme scenarios. Moreover, it was found out that affected communities failed to rely on external help in the first days after a catastrophic disaster, hence, families and communities need to do own preparedness planning.

Information coming from local knowledge and community awareness on the natural and human-induced disasters is necessary for the preparedness activities to be responsive to the needs of the people and situation on the ground. Hence, this study was conducted to ascertain the disaster knowledge, disaster awareness, and disaster preparedness in the local communities of the first congressional district in the province of Zamboanga del Norte and determined if disaster knowledge and awareness were associated to disaster preparedness among the constituents of the province. The results of this study would lead to making plan of actions to prevent and mitigate disaster risks.

Methods and Materials

This study used the descriptive survey method of research with the aid of the questionnaire as its main instrument. There were 390 respondents involved in the study of which 78 were from Dapitan City, 42 were from La Libertad, 47 were from Rizal, 48 were from Sergio Osmeña, 41 were from Sibutad, 41 were from Mutya, 48 were from Polanco and 45 were from Piñan. Frequency counting and percent were used to determine the disaster knowledge, disaster awareness, and disaster preparedness of the respondents. Moreover, Chi- square test was utilized to determine the association between disaster knowledge and awareness and disaster preparedness of respondents in the first congressional district in the province.

Results

The Disaster Knowledge of the Respondents in the First Congressional District of Zamboanga del Norte. Figure 1 revealed that less than 5 percent of the respondents were knowledgeable about tsunami. Historically, the occurrence of tsunami was not yet experienced by the people of Zamboanga del Norte. However, it is essential to develop tsunami knowledge within the expected communities to tsunami exposure as a basis for tsunami disaster preparedness. Bernard et. al (2006) asserted that tsunamis rank high on the scale of natural disasters and knowledge of tsunamis saves lives.

In the same vein, the figure showed that only about 12 percent of the respondents indicated that they were knowledgeable about volcanic eruption. Similar to tsunami, volcanic eruption never happened in the province. This may be the reason why only negligible percent of the respondents indicated that they possessed the knowledge about the occurrence of the disaster. These individuals may be those who transferred to the

province and experienced the occurrence of tsunami in the place where they came from or those who had undergone training and symposia about tsunami. Palma (2014) pointed out that the knowledge of volcanic systems and the hazards they produce is rapidly advancing as internet resources become more readily accessible, new and more sensitive field techniques are developed, and ever greater amounts of data are collected. Such rapid advances drive the people of the province on the need for an online collaborative knowledge management system that enables them in the sharing of volcanological information.

However, the figure divulged that almost 80 percent of the surveyed respondents indicated that they were knowledgeable about extreme climatic variability. It is known that Zamboanga del Norte is an agricultural province. Hence, the province often feels and is exposed to the occurrence of the extreme climatic variability. This has made the province large progress in the past few years towards quantifying and understanding climate variability. According to **Brönnimann et. al (2008)**, present-day climate has been studied using state-of-the-art data sets and tools with respect to the physical and chemical mechanisms governing climate variability. Thus, both the understanding of the past and the knowledge of the processes are important for the province in assessing and attributing the anthropogenic effect on present and future climate.

It can be seen further in the figure the that no less than 20 percent and no more than 45 percent of the respondents persuaded that they were knowledgeable about earthquake, landslide, tropical cyclone, storm surge, floods, thunderstorm, tornado, human-induced hazards, and disaster readiness. In general, only about 14 percent of the surveyed respondents indicated that they possessed the knowledge on natural and human-made disasters. Grolinger (2013) posited that disaster knowledge is a service framework for disaster preparedness, prevention, mitigation, and management.

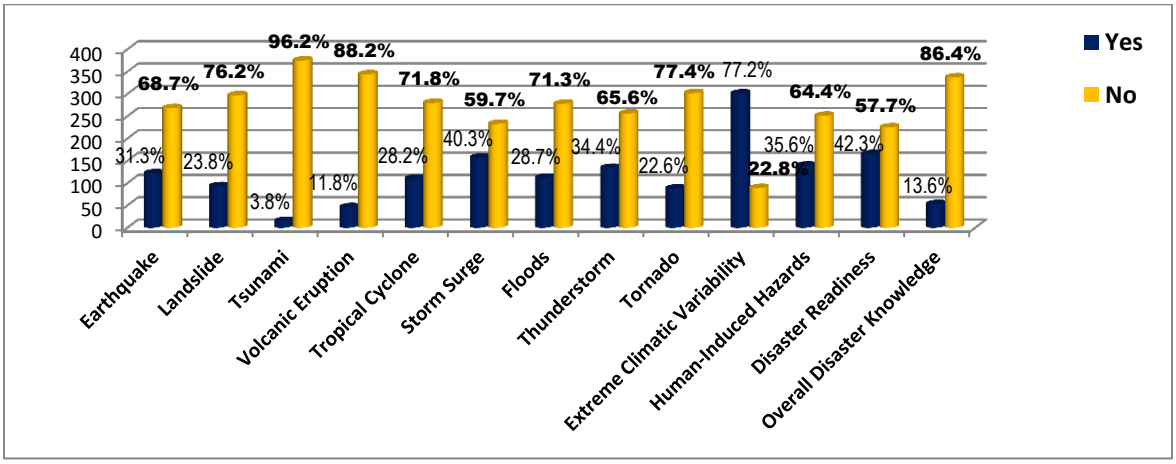

Figure 1 The Disaster Knowledge of the Respondents in the First Congressional District of Zamboanga del Norte

The Disaster Awareness of the Respondents in the First Congressional District of Zamboanga del Norte. Figure 2 showed that only 13 percent of the surveyed respondents were aware about the occurrence of tsunami. This would indicate that the presence of the tsunami disaster would bring greater negative impact to the province of Zamboanga del Norte once the hazard strikes the province. Bernard et. al (2006) stressed

that past events indicated that populations who were aware of tsunami hazards and physical indicators of their presence significantly reduced fatalities. They pointed out that in 1993, Japan experienced a local tsunami that killed about 15% of the exposed population on Okushiri Island, while a similar event occurred in Papua New Guinea in 1998 with a resultant 40% loss of life at a small village. The difference was that the Japanese people were educated about tsunamis and knew how to respond to the strong shaking of an earthquake, while the people in New Guinea did not. Thus, the challenge of the province is to effectively educate a wide range of communities that are vulnerable to tsunami for hazard preparedness, mitigation, response, recovery, and management.

On the other hand, the figure reflected that about 54 percent of the respondents confirmed that they were aware about the presence of thunderstorm. However, a considerable percent of the respondents (46.4%) were unaware of the occurrence and the effect of thunderstorm. Hence, there is still a need to educate the public on the importance of seeking proper shelter before, during and after thunderstorms. Keys (2014) posited that developing and applying a number of strategies to increase public awareness and understanding of storm threats and what can be done to mitigate their impacts is a necessity.

Similarly, the figure revealed that more than 50 percent of the respondents were unaware of the presence of earthquake, landslide, volcanic eruption, tropical cyclone, storm surge, floods, tornado, extreme climatic variability, human-induced hazards, and disaster readiness. In totality, more than 75 percent (77.4%) of the surveyed respondents revealed that they were unaware about the presence of disasters. This would lead to a finding that only about one-fourth of the respondents are responsive and conscious about the occurrence of disasters in the province. The present finding is corroborated by Minda News (2014) whose report revealed that 71 percent of Davao folks were unaware that they are living in disaster risk area.

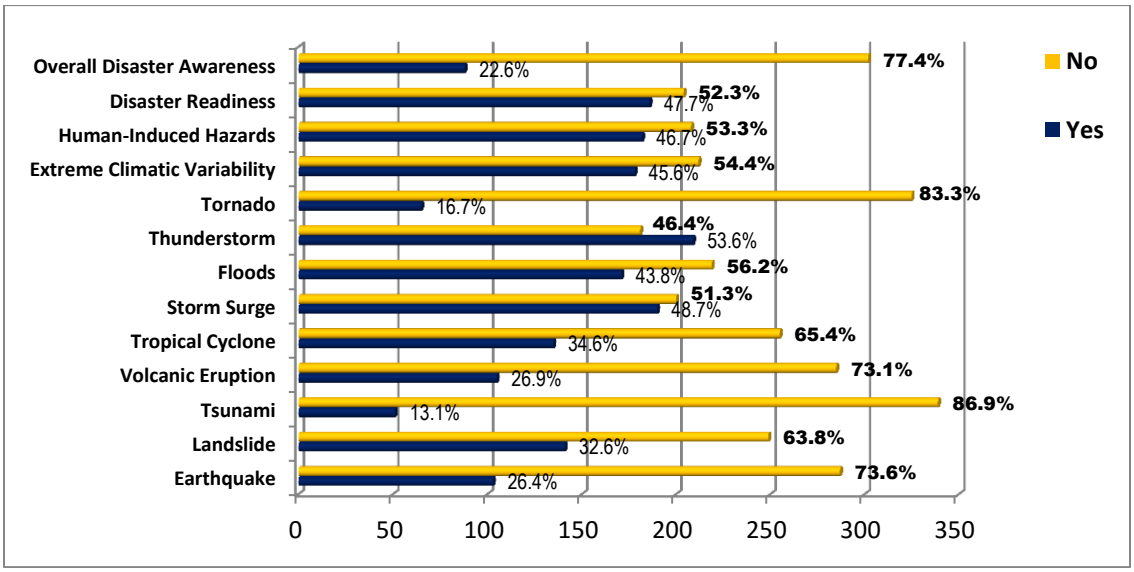

Figure 2 The Disaster Awareness of the Respondents in the First Congressional District of Zamboanga del Norte

The Disaster Preparedness of the Respondents in the First Congressional District of Zamboanga del Norte. The least percentage of respondents with preparation on the occurrence of disasters was on volcanic eruption and tornado as seen in Figure 3. The revelation of the respondents could be attributed to the fact that volcanic eruption and tornado were never experienced by the residents of the first congressional district in Zamboanga del Norte. Due to this, steps towards preparation were not observed and seriously advocated by the majority of the residents under study. However, the need to prepare for events such as volcanic eruptions and tornado attacks should still be done to provide protection against them rather than simply to await and endure them.

About 55 percent of the surveyed residents, on the other hand, indicated that they were prepared on the presence of floods. This means that more than 45 percent signified that they were not prepared on the hazard to happen. Flooding topped the list of disasters that residents were commonly worried about in the first congressional district in the province. With this considerable percentage of residents signifying unpreparedness of the disaster to occur, flood preparedness programme is a necessity. The National Center for Environmental Health (NCEH), Agency for Toxic Substances and Disease Registry (ATSDR), and National Center for Injury and Violence Prevention and Control (NCIPC) (2013) pointed out that learning how to prepare for a flood, stay safe during a flood, and protect health when returning home after a flood are the steps to reduce the harm caused by flooding.

As a whole, the figure showed that greater percentage of respondents were unprepared on the following hazards to happen, namely: earthquake, landslide, tsunami, tropical cyclone, storm surge, thunderstorm, extreme climatic variability, human-induced hazards, and disaster readiness. Moreover, almost 75 percent of the surveyed residents specified that they were unprepared on a disaster to take place. Results mean that disaster preparedness requires attention not just to specific types of hazards but also to steps that increase preparedness for any type of hazards. Lindell and Perry (2000) averred that prior to a disaster, it is desired that not only administrative bodies but also residents in local communities come up with community-based disaster preparedness measures by themselves, which are then reflected in administrative plans. They stressed further that it is necessary for a greater number of residents to participate in community-based disaster preparedness activities, such as drills and exercises, in order for them to be successful. Simpson (2002), however, observed that one problem associated with such drills/exercises is that community residents are rarely involved in the process.

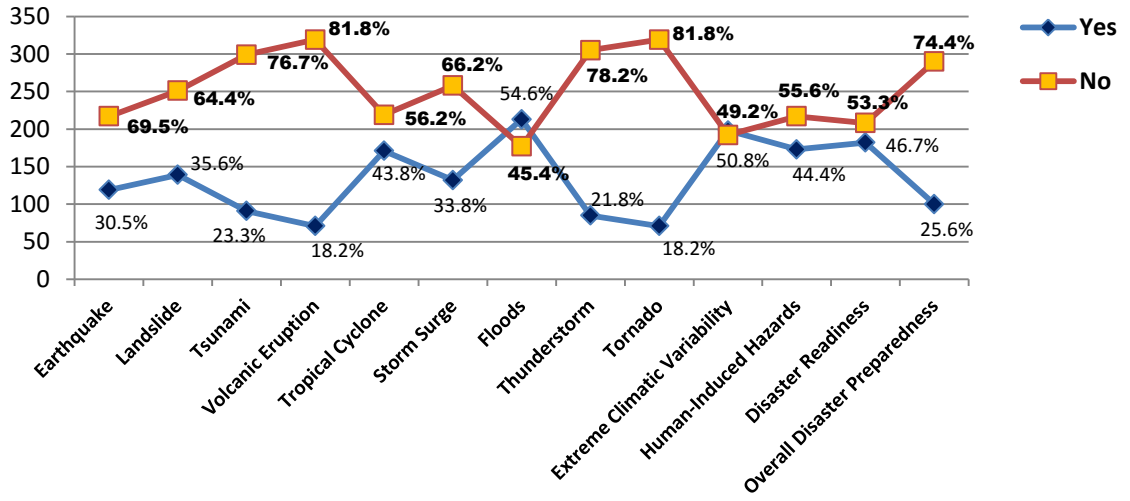

Figure 3 The Disaster Preparedness of the Respondents in the First Congressional District of Zamboanga del Norte

Association Between the Disaster Knowledge and Awareness and Disaster Preparedness of the Respondents in the First Congressional District of Zamboanga del Norte. Table 1 revealed that disaster knowledge was significantly associated with disaster preparedness. This means that disaster preparedness depends on disaster knowledge. This implies that the disaster knowledge of the respondents understudy significantly translated their disaster preparedness. Conversely, the finding concluded that unknowledgeable respondents on disaster events associated significantly with their unpreparedness of the occurrence of hazards. Hence, there is a need to educate these residents of the first district of Zamboanga del Norte. There is evidence that education increases the acquisition of general knowledge that could influence values, priorities, capacity to plan for the future, and ability to appropriately allocate available resources (Burchi 2010). The knowledge and competence gained through education thus could be useful when a disaster strikes. Muttarak and Pothisiri (2013) supported that formal education which enhanced the acquisition of knowledge increased disaster preparedness and reduce vulnerability to natural hazards.

In the same vein, the study also found out that disaster awareness was significantly associated with disaster preparedness. This means that disaster awareness influenced the preparedness of the residents under study. The finding, on the contrary, concluded that unaware respondents of disaster events significantly associated with their unpreparedness towards the hazards. Because preparedness action is closely related to how individuals perceive and act on risk information (Tierney et al. 2001), educated individuals might have more awareness of risks because they are likely to have greater access to information sources and be better able to evaluate the risk information (Asfaw and Admassie, 2004). Hence, educating the residents of the first congressional district of Zamboanga del Norte provides better opportunity of the people to easily access information related to disasters. Consequently, education increases the level of awareness of the community to the threats and impacts of all hazards, risks and vulnerabilities.

Table 1 Association Between the Disaster Knowledge and Awareness and Disaster Preparedness of the Respondents in the First Congressional District of Zamboanga del Norte

Factors	Disaster Preparedness		Interpretation
	X^2-*value*	*p-value*	
Disaster Knowledge	135.602	0.000	Significant
Disaster Awareness	165.964	0.000	Significant

Discussion

Disaster knowledge is not conceptualized massively among residents of the first congressional district in Zamboanga del Norte. Minimizing the impact of disasters is imperative in today's society (Grolinger, 2013). This concludes that the knowledge of the residents should be enforced to effectively anticipate, respond to, and recover from the impacts of likely, imminent or current hazard events or conditions. It is important that knowledge should be driven from the local communities and be based on accumulated experiences and interaction with the environment to ensure the formulation of safety plans.

Awareness towards the occurrence of natural and man-made hazards was also poorly understood by the majority residents of the district. Public awareness pertains to the extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken, individually and collectively, to reduce exposure and vulnerability to hazards (International Federation of Red Cross and Red Crescent Societies, 2011). There is a need, therefore, to educate the people to be resilient on disaster events. The International Federation of Red Cross and Red Crescent Societies (2011) posited that resilience pertains to the ability of a system, community or society exposed to hazards to resist, absorb, adapt to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Local knowledge and community awareness on disaster events were positively associated to preparedness actions at the local levels. The study found the importance of educating the residents towards acquiring knowledge and increasing awareness on the occurrence of disasters. Muttarak and Pothisiri (2013) asserted that education enhances the acquisition of knowledge, increases disaster preparedness, and reduces vulnerability to natural hazards. Subsequently, there was evidence that being affected by disasters increased the likelihood of preparedness, but this applied only to those with knowledge and awareness (Muttarak and Pothisiri, 2013). Likewise, risk knowledge and awareness were strongly associated to disaster preparedness because individuals must perceive a risk to be motivated to initiate preparedness actions (Miceli et al. 2008). This concludes that the highly knowledgeable and aware group managed to translate their previous disaster experiences into preparedness actions.

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