

Exploring the People's Attitude and Knowledge in the Coastal Communities on Disaster Management

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Abstract

Coastal communities in the Philippines are very much prone to natural disasters. This descriptive-correlational study which aims to explore the people's attitude and knowledge in the coastal communities on disaster management was conducted among 198 household heads including barangay health workers and barangay officials of Brgy. Paysawan, Binuangan and Quinawan in Bagac, Bataan. Convenient sampling technique was used in the selection of the respondents which was calculated using Cochran statistical formula. It was revealed from the findings that majority of the respondents are adult, female, are engaged in agricultural jobs, have been residing in the place for more than 10 years and have a monthly family income of Php11,000 to Php20,000. Also, there is a significant difference in the disaster management knowledge and attitude of the respondents when grouped according to age, sex, occupation, years in residence and monthly family income. Moreover, disaster management knowledge had positive significant correlation with attitude of the respondents. The significant relationship between disaster management knowledge and attitude implies that the rise or increase in the knowledge of the community members in coastal areas may result to better attitude towards disaster and disaster management. Hence, continuous formal and informal training on disaster and disaster management must be conducted.

Keywords: disaster management; hazard; knowledge; attitude.

1. Introduction

While catastrophes have existed throughout human history, there has been a remarkable rise in the number of disasters and the damage they inflict in recent years, making it a matter for national and worldwide concern. These disasters, man-made or natural in classification have affected millions of families and claimed millions of lives including that of children. It has also left many sectors of the society under vulnerable conditions including coastal communities or those residential or commercial areas that can be found near the major bodies of water like ocean and sea. Coastal communities are highly vulnerable due to the climate change since the intensity of disasters like sea level rise, tidal surge, salinity intrusion and cyclone in coastal belt is being increased.

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Coastal communities are becoming more vulnerable to natural and human-induced disaster which place its people and resources at a very high risk. Hence, community resilience must be strengthened by empowering people to be knowledgeable in disaster management, a systematic process that involves the use of administrative directives, organizations, and operational skills and capacities to implement strategies, policies, and enhanced coping capacities in order to mitigate the adverse effects of hazards and the possibility of disasters [1].

Assessing community resilience is a necessary first step toward lowering a community's catastrophe risk and increasing its resilience to natural and human-caused disasters (Burton, 2015). This can only be achieved if the coastal communities are knowledgeable about disaster management and the people themselves have the right attitude in dealing with disasters. Hence, disaster management is the art of managing and avoiding hazards which includes planning for pre and post-disaster actions, as well as disaster response and assistance. Furthermore, a coastal community's capacity is determined by the sum total of its strengths, traits, and resources that may be employed to accomplish agreed-upon objectives [2]. As such, the recent history of rapid climate change has resulted in a stronger emphasis on the creation and implementation of adaptive administrative procedures to mitigate and solve the particular challenges found in coastal areas [3]. The coastal communities' ability to bounce back following events such as coastal typhoons, tsunami and flooding is a sign of great resilience which fundamentally a product of appropriate and pro-active disaster management.

Hence, local government units (LGUs) in the coastal communities must be pro-actively involved in disaster management wherein local officials design a sequence of activities which include program, initiatives, and/or measures and instruments focused specifically at minimizing disaster risk in vulnerable areas and mitigating the impact of catastrophes [4]. The local officials with the help of the community people must be active in the assessment of risks, prevention of disasters, mitigation of the same as well as preparation. The need for the coastal communities' LGUs to determine the community's tolerance for a particular risk or group of hazards and determining which risk assessment choices are acceptable within a certain social, economic, cultural, and political environment is an essential component of the disaster management [5]. As such, LGU officials must continue to communicate and consult with the general people to determine the benefits, control cost and even measures needed to make the coastal communities resilient to disaster at all fronts.

There are four phases of disaster management [6]. Mitigation phase involves the identification of vulnerability to particular types of hazards and what steps should be taken to minimize the risks. The actions include structural as well as non-structural planning with the help of the government aid relief agencies in achieving vulnerability reduction on a long-term basis. Preparedness phase involves the participation of the wider community in recognizing and responding to the hazards. Response phase involves the implementation of measures developed during the mitigation and preparedness phases. Finally, recovery phase comprises the steps taken soon after the event and consists of repairing the damage and aiding community rehabilitation.

However, recent studies show that coastal communities lack the disaster management protocols and have been very ad hoc in their approach towards disaster mitigation, preparedness, response, and recovery. This is notwithstanding the fact that the coastal community people are very much affected by disasters and hence, they play a crucial role in disaster preparedness and mitigation. They lack the proper knowledge on disaster

management and are do not possess the right attitude in dealing with disasters. In many places in the Philippines, resilience is being romanticized which often led to forgetting long-term solutions to persistent problems about disasters. Hence, it is important to assess the coastal community's knowledge and attitude towards disaster management so that resilience can be likewise explored. Assessing coastal community resilience not only aids in the development of a more complete understanding of disasters [7], but also in the formulation of informed, evidence-based strategies capable of mitigating the impact of natural disasters and expediting recovery.

As such, the present study looks into the people's attitude and knowledge on disaster management among the coastal communities of Bagac in Bataan specifically Paysawan, Binuagan and Quinawan. These coastal communities are very much prone to natural disasters as revealed in the geohazard assessment of the barangays being conducted by the geologists from the Mines and Geosciences Bureau-Regional Office III (MGB-R3). In terms of landslide susceptibility, Brgy. Binuagan, Quinawan and Paysawan have potential for landslide occurrences. This is due to the fact that these barangays, although coastal, are bounded by mountain of Mariveles on the opposite side of the West Philippine Sea. Hence, the road cuts and generally high and mountainous areas have a moderate to high susceptibility to landslides. Meanwhile, Brgy. Binuagan has low susceptibility to flooding in the barangay proper and most areas of the barangay while Brgy. Quinawan has areas and portions of the barangay and coastal zones with moderate to high susceptibility to flooding since these areas are generally low-lying and with portions near major rivers, creeks and coastal areas. With all these hazards that warrant the attention and planning of the barangay and the LGU, it is necessary to look into the knowledge and attitude of the coastal community people on disaster management which maybe used as viable information in the planning of the disaster management processes of the community.

2. Methodology

This descriptive-correlational study was conducted among household heads including barangay health workers and barangay officials of Brgy. Paysawan, Binuagan and Quinawan in Bagac, Bataan. There were a total of 198 respondents from the three barangays. Convenient sampling technique was used in the selection of the respondents which was calculated using Cochran statistical formula. In gathering the data for the study, the disaster management questionnaire of Chhabra and his colleagues [8] was used which measured the demographic characteristics and knowledge, attitude and preparedness of the respondents towards disaster management. The disaster management knowledge part of the instrument has a total of 30 questions with each correct answer being scored as one and incorrect answer as zero. Hence, the higher the score of the respondents the better their knowledge on disaster management. On the other hand, eight (8) questions were allotted to measure the disaster management attitude of the respondents using a five-point Likert Scale. In analyzing the data, Chi square was used to determine any significant relationship between the profile of the respondents and their knowledge and attitude regarding disaster management. On the other hand, Pearson's correlation was used to find any association between disaster management knowledge and attitude of the respondents. The IBM SPSS version 20.0 was used for the statistical analysis with p value set at less than 0.05 level of significance.

3. Results

A 100% retrieval rate was observed since all 198 respondents participated in the study. Among the respondents, 33.2% made up those who belong in the age bracket of 21 to 30 years old. Those aged 31 to 40 years old made up 44.7% and 41 years old and above were the remaining 22.1%. There were 68% female and 32% male who participated in the study. Those who are working as BHW and barangay officials made up 12.5%, agricultural jobs were 76.9% and the remaining 10.6% was office-related. Majority of the respondents or 92.1% of them have been residing in the place for more than 10 years while the remaining 7.9% has just relocated to the area in less than 10 years ago. As for the combined monthly income of the family members, 84.5% of the respondents have an income of Php11,000 to Php20,000 a month while 8.7% have an income of more than Php20,000 pesos a month and 6.8% earns below Php10,000.00 monthly.

Table 1: Demographic profile of the respondents.

Demography	Indicators	Percentage
Age	21 to 30 years old	33.2%
	31 to 40 years old	44.7%
	41 years old and above	22.1%
Sex	Male	32%
	Female	68%
Occupation	BHW and barangay officials	12.5%
	Agricultural job	76.9%
	Office-related	10.6%
Years in residence	More than 10 years	92.1%
	Less than 10 years	7.9%
Family month income	Below Php10,000.00	8.7%
	Php11,000 to Php20,000	84.5%
	More than Php20,000	6.8%

On the other hand, the mean score for the knowledge of the respondents on disaster management is 17.22 (SD=0.22). It was revealed that there is a significant difference in the disaster management knowledge of the respondents when grouped according to age, sex, occupation, years in residence and monthly family income. The respondents in the age bracket of 21 to 30 years old have significantly better knowledge than the other age groups ($P = .001$). Also, females have significantly better knowledge than males ($P = .005$). Those who are working in offices have significantly better knowledge than the other occupational groups ($P = .001$). Furthermore, those who are residing in the place for more than 10 years have significantly better knowledge than those who only spent less than 10 years in the coastal barangay ($P = .001$). Respondents who have higher income have significantly better knowledge than those who earn less ($P = .005$).

On the other hand, the mean score for the attitude on disaster management is 32.11 (SD=0.12). It was revealed that there is a significant difference in the disaster management attitude of the respondents when grouped according to age, sex, occupation, years in residence and monthly family income. Those who are less than 30 years old have significantly better attitude than the other age groups ($P = .005$). In addition to, males have significantly better attitude than females ($P = .005$). Those who are working in offices have significantly better attitude than the other occupational groups ($P = .005$).

Likewise, those who are residing in the place for more than 10 years have significantly better attitude than those who only spent less than 10 years in the coastal barangay ($P = .001$). Finally, those respondents who have higher income have significantly better attitude than those who earn less ($P = .001$). Meanwhile, the findings likewise revealed that the disaster management knowledge had positive significant correlation with attitude. The correlation is significant at the 0.01 level (2-tailed).

Table 2: Correlation between Disaster Management Knowledge and Attitude among the Respondents.

Disaster Management		Knowledge	Attitude
Knowledge	Pearson Correlation	0.415*	0.066*
	Sig. (2 tailed)	.000	.000
Attitude	Pearson Correlation	0.298*	0.124*
	Sig. (2 tailed)	.000	.000

* Correlation is significant at the 0.01 level (2-tailed).

4. Discussion

The role of people in coastal communities in disaster management is an important aspect of establishing resilience towards natural disasters. Literature and previous studies have proven that the support and participation of the community people in disaster management along mitigation, preparedness, response, and recovery are important to achieve the goal of the local and national government of bringing forward a pro-active approach in dealing with natural disasters. Hence, it is important for the members of the community to continually learn and take responsibility in improving their capacity to handle natural disasters.

The community's capabilities and resources, as well as those of its people, comprise the first domain of the community's core of resilience [9]. Socio-political capabilities and resources reflect the significance of political, social, and power relations, as well as community members' potential to influence political decision-making. By demonstrating resilience, a community may also more effectively recognize and capitalize on new possibilities as they arise [10]. Thus, there is a dynamic interaction between mitigating the effects of change and capitalizing on the possibilities generated by change [11]. Hence, there is a need for the members of the community to have the right knowledge and attitude that may guide them to plan, prepare, respond and mitigate the effects of natural disasters.

The findings of the study revealed that knowledge of the community members are considerably low when compare with their attitude. This reflects the lack of formal and informal training among barangay officials, BHWs and head of households in Brgy. Paysawan, Binuangan and Quinawan in Bagac, Bataan regarding disaster management. Although the national and provincial government were able to conduct trainings on disaster management in a very few occasions, those who attended from the three barangays were quite few and failed to echo to the members of the barangay the skills and knowledge learned from the training. Improving the knowledge of the community members on disaster management is important since the findings revealed also that knowledge about this matter significantly influence the attitude of the community members towards disaster management. Hence, it is safe to assume that higher knowledge of the community on disaster management may

lead to even better attitude towards disaster management. The study also proved that there is a significant difference in the disaster management knowledge of the respondents when grouped according to age, sex, occupation, years in residence and monthly family income. Younger members of the community have better knowledge than the older members which can be connected with the exposure of the former to different forms of media where they get to learn through reading and watching information about disaster and disaster management. Females have also significantly better knowledge than males due to their exposure also to external stimuli that helped them increase their knowledge about disaster and its management. Although very few in numbers, but the workplace of those working in offices may have provided this occupation group with better ideas and sound information on disaster and disaster management as compared to those who are working at the farms and fishing at the sea. Also, length of residence of the respondents in the barangay allows them to become privy on local knowledge that community uses during disaster and how to prepare for it. Their long immersion gives them more information on how to deal with disasters than those who are new to the place. Finally, families with higher income have extra money to spend for information and communication tools like television, radio and cellphone which also provide rich information about disaster and disaster management. Hence, those who have a higher income have significantly better knowledge than those who earn less. On the other hand, there is a significant difference in the disaster management attitude of the respondents when grouped according to age, sex, occupation, years in residence and monthly family income. Younger members of the community have a better attitude towards disaster and disaster management because they are more exposed to disaster management processes, hence, they understand its importance and significance. In addition to, males have significantly better attitude than females towards disaster and disaster management because in many occasions where disaster response is needed, male members of the community are always being called to act. As such, they appreciate more the process and hence have developed better attitude in doing it. Likewise, those who are residing in the place for more than 10 years have significantly better attitude than those who only spent less than 10 years in the coastal barangay simply because they have experienced more disaster than the latter and hence, know how to act on it. Finally, those respondents who have higher income have significantly better attitude than those who earn less since the former have better means to address disasters.

5. Conclusion and Recommendation

Majority of the respondents are 31 to 40 years old, female, are engaged in agricultural jobs, have been residing in the place for more than 10 years and have a monthly family income of Php11,000 to Php20,000. Also, there is a significant difference in the disaster management knowledge and attitude of the respondents when grouped according to age, sex, occupation, years in residence and monthly family income. Moreover, disaster management knowledge had positive significant correlation with attitude of the respondents. The significant relationship between disaster management knowledge and attitude implies that the rise or increase in the knowledge of the community members in coastal areas may result to better attitude towards disaster and disaster management. It is recommended that continuous formal and informal training must be conducted among BHWs, barangay officials and household heads on disaster and disaster management to provide them additional, relevant and up-to-date information that can be useful for the barangay's disaster mitigation, preparedness, response, and recovery. If the community members will be provided with useful information and skills on how to deal and manage disaster, they will develop a more pro-active and positive attitude.

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