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Original Research Paper

Sources of Information, Training Needs, Preparation and Response to Disaster of Selected Communities in Central Luzon, Philippines

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Abstract: Nature has its due course and disaster is always an aftermath of a catastrophic event. The purpose of this study is to assess the sources of information, training needs, preparation, and response of the community to disaster. To achieve this purpose, the study used a descriptive design with the survey as the instrument for data gathering. For the respondents, 136 individuals took part in the survey which took two months to accommodate. The researcher created a simple survey instrument and subjected it to reliability and validity tests. In analyzing the data, the researcher used weighted mean, standard deviation, t-test, and analysis of variance. Results showed that the radio is the most common source of information to disaster. Respondents emphasized the need for disaster training in the community and they also indicated that they partially observed the preparation and response in their communities. At the same time, there were significant differences observed in the sources of information, training needs, preparation, and response to the disaster of the respondents when grouped according to their communities. Furthermore, a significant difference emerged in the training needs when grouped according to the members of the family. Based on the results, the researcher recommends a community disaster preparation enhancement program for the involved communities in the study.

Keywords: Community, Disaster Management, Preparation and Response to Disaster, Sources of Information, Training Needs.

1. Introduction

A natural disaster can happen anytime and anywhere. It is inevitable because nature always takes it due course. The landscape can change over time when disaster strikes. Sometimes, immeasurable loss of life, livelihood, and home are at stake. It is essential therefore that the community prepares for these natural and unpredictable cataclysmic events. Dealing with these unforeseen forces of disaster is tantamount to survival.

For the community to prepare, it is important to know where to find vital information about disasters. A significant study stated that English language proficiency, occupation, familiarity with the local environment are essential factors that influence disaster awareness [1]. It is important to consider these factors especially in communicating essential information regarding the disaster, its impact, and other related circumstances. About the aforementioned idea, formal and informal sources have an impact on raising the levels of both actual and perceived preparedness. Trusting the source also plays a role in translating experience into being prepared especially the social media [2][3]. In a different perspective on information dissemination, a study that focused on mass media showed a positive association between professionals and laypeople [4].

Another important aspect of disaster preparation is training. This enables individuals to adapt to the unforeseeable crisis that is coming. The training about disaster can also mitigate the loss of lives and destruction of properties. And in more difficult times, how to cope up with the aftermath of a disaster. Respondents from a particular study stated that they need training to disaster recovery [5].

When will disaster come? No one has a definite answer and prediction. We can only prepare for the worst-case scenario. And after the aftermath of the calamity, that is the time to recover. Howard et al. [6] stated in their study that participants experienced problems between socio-geographic disadvantage and social isolation concerning natural disaster preparation and responses. Sadly, according to a study, it claimed that disaster preparation and preparedness have no significant reduction in the cost of emergency response [7]. That is why improving disaster management and recovery techniques is a national priority due to its toll caused by man and natural calamity [8]. In this particular section, participation is an essential component of disaster management.

The objective of this study is to assess and analyze the sources of information, training needs, preparation, and responses of the communities to disaster. The study also intends to see varying degrees of differences in the opinion of the respondents from the three (3) variables involved in the study.

The result of this study is primarily set to benefit the communities which participated in the survey. More accurately, the researcher would like to design a community disaster preparation enhancement program to capitulate the urgency of the matter. At the same time, the result will also benefit the local government and other stakeholders in the areas. This will maximize their gains politically, economically, and socially.

2. Literature Review

To strengthen the impact of information source dissemination, a descriptive statistic indicated that information from different sources with high credibility has a large impact on the individual's evacuation-related decision [9]. Also, social media offers information not available from other sources, such as localized and early updates but infrequently used sometimes [10] [11]. Consistent with previous findings, with the rapid onset of disaster, people use personable channels of communication to alert those in the social network in an unexpected disaster [12] [13]. Smallholder farmers had significantly lower formal information sources along with a higher perception of pests and diseases [14]. We are now living in a technological world. The information gateway provides us an insignificant amount of data. This will help us acclimatize to the fast-changing pace of nature.

In a research article about disaster preparedness training needs, it highlighted the current state of nursing education and training in disaster management where the authors discussed the significance of disaster preparedness [15]. In a parallel study from a disaster-prone country, the investigators revealed that the majority of the local institutions in the area of study were "unprepared" in terms of awareness and training [16]. Also, some studies concluded that continuing disaster training is still required to achieve disaster preparedness and management at community levels [17] [18]. These results are quite perplexing since, in memoriam, disaster was part of human existence yet people are still that not that ready. However, in a literature review, the research paper revealed that the increase in preparedness for response includes previous disaster response experience and disaster–related training [19]. In contrast to this result, from a three-state survey on disaster behavior health, findings demonstrated that

there is a need for improved disaster behavioral health training and response plan [20]. From the perspective of professionals, technical skills scored highest, and critical thinking skills scored lowest from a survey regarding the perception of own disaster preparedness and core competencies [21]. Another study presented some issues related to the training development for NGO workers, especially in the Chinese community, and highlighted the alignment of training with the organization's vision and mission [22]. Finally, an article regarding the significant potential of community health workers in promoting disaster preparedness provided some insights into primary issues associated with training and offered a detailed elaboration of basic and specialized curricula in the program. [23]. Based on the mentioned literature, contrasting ideas and notions prompts further investigation. This is because not all of the studies were the same in nature. They differ from one case to another.

A study from two communities in Japan showed that regardless of the type of community, people's involvement predicts their engagement in disaster preparation actions [24]. Experience is the best teacher, somehow a finding from a study discussed that older people were critical community assets in local neighborhoods. They contribute in experience and relationship-building capacity to prepare themselves for a natural disaster [25]. From an in-depth analysis, a research paper identified four segments in the population of their study. These include, unprepared and uninterested, willing but could do more, it's just too difficult and knowing, interested, and prepared. The authors recommended a wider public policy context to build understanding and resilience [26]. About the ideas of the previous literature, a chapter discussed disaster response logistics and its connection to the emergency functions conducted in relief agencies and identifies under-studied areas where logistic research could enhance operational effectiveness [27]. And in a local study in the Philippines, research showed that there was a high level of performance of the BDRMC in implementing the disaster risk reduction management plan [28]. Preparing for the unknown is better than doing nothing at all. Some lives become a sacrifice, but many will survive. The community deals with a powerful enigma that can change the face of the world any time, anyway, or anyhow. Learning how to adapt and cope up with the ever-changing tide of time prolongs the survival of the human race in these harsh and unpredictable predicaments.

Based on the readings and listed studies and pieces of literature, contrasting ideas and principles encouraged the researcher to do his investigation of the aforementioned matter.

3. Methodology

3.1. Research Design

This study used a descriptive survey type of research design. This design provides a quantitative description of trends, attitudes, or opinions of a population [29]. From the sample results, the researcher draws inferences to the population. To accomplish the said task, the study used the survey as a primary instrument for gathering sufficient data. Since this study intends to describe a certain trend in the population, as to the sources of information, training needs, preparation, and responses of a community, the said design fits the recommended design.

3.2. Respondents

For this study, a total of 136 respondents from three different communities in Central Luzon, Philippines participated. The researcher chose these communities due to geographical reasons and at the same time convenience and availability of necessary data for the study. To gather the necessary number of respondents, the researcher used a convenience type of sampling. This sampling technique is a non-probability wherein the researcher chose the respondents based on their convenience and availability [29]. The criteria for inclusion in the study were (1) living in the chosen community for at least five years, (2) has experienced different natural disasters in the area for the past years, and (3) at least of legal age (18 years old above) during the time of the survey. From table 1, it showed the distribution of the sample population per community.

Table1. Distribution of the Sample Population

Communities	Frequency	Percentage
Community A	55	40
Community B	31	23
Community C	50	37
Total	136	100

3.3. Research Instrument

The researcher crafted a survey questionnaire for this particular study. After reading some disaster-related works of literature, the researcher created a sample questionnaire. The basis of the instrument came from the Pan American Health Organization (PAHO/WHO), REACH Initiative, and the Philippine National Disaster Risk Reduction and Management Council (NDRRMC) Manual. It underwent validity from a panel of experts (a college professor, a university professor, a statistician, and a disaster risk reduction officer). Their comments and suggestions helped in improving the questionnaire further. For the reliability of the questionnaire, the researcher used the Alpha Cronbach test. It yielded an overall coefficient of .957. Before actual administration, the researcher tried the instruments to college students first. This is to verify any ambiguous or misunderstood terms or words in the instrument.

3.4. Statistical Analysis

After gathering the data, the researcher tabulated the data using Microsoft Excel. This study analyzed the tabulated data using the following tools: weighted mean, standard deviation, t-test, and ANOVA. For the descriptive statistics, the study used the weighted mean and standard deviation to determine the sample population's general perception of a certain trend or issue.

For statistical inferences, the study used a t-test to determine significant differences between two groups of samples and try to compare their responses. On the other hand, the study used Analysis of Variance (ANOVA) for groups of three or more. Furthermore, this study also used SPSS 22 in the computation of the data collected. The survey used a four-point Likert scale to analyze the responses of the participants in the study.

4. Finding and Discussion

4.1. Finding

The objective of this study is to assess and analyze the sources of information, training needs, preparation, and response of the communities to disaster. At the same time, explore varying degrees of differences in the opinion of the respondents. The following tables below provided the answers to the objective of this study.

Table 2. Sources of Information about Natural Disaster

I get information about Natural Disaster in:	WM	SD	Description
a) Television	3.18	1.05	Aware
b) Radio	3.31	0.99	Aware
c) Books/ Newspaper	2.24	1.26	Moderately Aware
d) School	2.57	1.21	Aware
e) Health Center	2.26	1.25	Moderately Aware
f) NGO training	2.21	1.22	Moderately Aware
g) Word of Mouth	2.27	1.19	Moderately Aware
Average Weighted Mean	2.58	0.84	Aware

Legend: 1.00-1.49=Not Aware; 1.50-2.49= Moderately Aware; 2.50-3.49=Aware; 3.50-4.00=Fully Aware

Table 2 showed the sources of information of the respondents about a natural disaster. As seen, the radio got the highest weighted mean in the group. It corresponds to "aware" in the Likert scale description. However, the NGO training got the lowest weighted mean which corresponds to "moderately aware" in the Likert Scale description. Overall, the average weighted mean got an equivalent description of "aware" in the Likert Scale. This result only shows that in general, respondents know the mentioned sources of natural disaster information.

Table 3 showed the disaster training needs for the community. As observed, training in dealing with the effects of weather got the highest weighted mean. It corresponds to "needed" in the Likert scale description. Training on how to mitigate disaster got the lowest weighted mean which is parallel to "moderately needed" in the Likert scale description. All in all, the average weighted mean still falls under the description of "needed" in the Likert scale. The result only means that based on the mentioned items, training is imperative in the community especially those items with low response average.

Table 3. Disaster Training Needs of the Community

Our Community needs the following training:	WM	SD	Description
a) Effects of disaster	2.70	1.04	Needed
b) Early warning system	2.67	1.07	Needed
c) What to do during disasters	2.62	1.08	Needed
d) How to prepare for disasters	2.51	1.07	Needed
e) How to mitigate disasters	2.26	1.08	Moderately Needed
Average Weighted Mean	2.55	0.82	Needed

Legend: 1.00-1.49=Not Needed; 1.50-2.49=Moderately Needed; 2.50-3.49=Needed; 3.50-4.00=Very Much Needed

Table 4 showed the preparation and response of the community in a disaster.

Table 4. Preparation and Response to Disaster

Our Community has the following:	WM	SD	Description
a) Storm shelters	2.24	1.29	Partially Observed
b) Training, education, or awareness	2.48	1.13	Partially Observed
c) Improved roads and transport	2.38	1.08	Partially Observed
d) Improved building construction	2.43	1.17	Partially Observed
e) Improved early warning systems	2.49	1.19	Partially Observed
f) Improved planning	2.55	1.15	Observed
g) Improved health services	2.47	1.19	Partially Observed
h) More support from NGOs	2.26	1.17	Partially Observed
i) More support from the government	2.29	1.21	Partially Observed
j) Improved community organization	2.46	1.17	Partially Observed
k) Poverty reduction/ livelihood	2.24	1.14	Partially Observed
Average Weighted Mean	2.39	0.93	Partially Observed

Legend: 1.00-1.49=Not Observed; 1.50-2.49=Partially Observed; 2.50-3.49=Observed; 3.50-4.00=Fully Observed

As seen in Table 4, improved planning got the highest weighted average which equals "observed" in the Likert Scale description. On the other hand, storm shelter and poverty reduction/ livelihood got the lowest weighted mean. They correspond to "partially observed" in the Likert scale description. The average weighted mean equals "partially observed" in the description of the Likert scale. Therefore, the overall perspectives of the respondents point to the idea of non-presence of the mentioned contexts regarding disaster preparations and responses.

Table 5 displayed the significant differences in the response of the community with regards to the source of information, training needs, and preparation and response to a disaster. As seen, there are significant differences in the sources of information, training needs, and preparation and response to disaster when grouped according to the community. The study yielded the following results: $F(2,133)= 19.257$, $p= .000$ for sources of information, $F(2,133)= 4.722$, $p= .010$ for training needs, and $F(2,133)= 19.529$, $p= .000$ for preparation and response to disaster. All of their probability values were lower than the alpha level of significance of .05.

Table 5. Differences in the Responses in the Sources of Information, Training Needs and Preparation and Response to Disaster

Demographic Profile/ Variables	Source of Information	Training Needs	Preparation and Response
Community (*df*=2, 133)	19.257*	4.722*	19.529*
Age (*df*=4,131)	0.099	1.064	0.457
Members of Family (*df*=2, 133)	0.443	3.670*	1.719
Sex (*df*=134)	1.154	0.360	0.871

*$p < .05$

There is also a significant difference in the training needs when grouped according to the members of the family. The study got $F(2,133)= 3.670$, $p= .028$ which is lower than the Alpha significance level of .05. On the other hand, there were no significant differences in the sources of information, training needs and preparation and response to a disaster of the respondents when grouped according to age and sex. This is so since their obtained *p*-values were higher than the alpha significance level of .05.

4.2. Discussions

The objective of this study is to assess and analyze the sources of information, training needs, preparation, and response of the communities to disaster. It also explored the degree of differences in the opinion of the respondents. Based on the results of the study, the researcher found some important and essential findings.

For the first variable, where respondents determined the sources of information about a natural disaster, it was not surprising that the study got radio as the highest and most popular means followed by television. It is a common household appliance for rural folks and even in the suburbs. The result is almost parallel with a study that states that television is the most trusted source of information [1]. However, due to the advent of technology, the means of getting information nowadays is different. There are pieces of literature out there that supported this idea. Utilizing social media could better inform populations during disasters [10]. Also, a study found that social media is the second most used platform to share news about the disaster [12]. In a different point of view, in a study from Thailand, the authors confirmed that the machine learning technique can assist with disaster management by dealing with crowdsource data. [30]. On the other hand, a research paper in China suggested the importance of increasing the credibility and number of followers of the social networking services account to effectively disseminate disaster-related information [9].

For the next item on the list where training needs of the community is at hand, respondent viewed almost all of the training as "needed" by the community. Thus, here lies another important aspect of proper education for disaster contingency and other disaster-related preparations and mitigation. A related study indicated the lack of training and awareness of disaster from a country in South Asia [16]. Besides, from a study in China, training needs should be supported by the local government and contextualized with the local values and customs [22]. Also, from a nurse's perspective, a review showed that the preparedness of nurses is insufficient and do not feel confident to respond effectively to disasters [19]. In a different study, a group of investigators concluded that despite the respondents' need, there is a limited opportunity for training [31]. A study about the effectiveness of disaster training for community residents showed that disaster training affects disaster preparedness, values, and knowledge of the study population [32].

For the last variable, where the study assessed the communities' preparations and response, another interesting finding emerged. Most of the items mentioned, according to respondents, "partially observed". This only means that the communities do not appreciate the presence of any disaster preparations and response in their place or they just ignored the fact that such exist in their place. In a related study in the Philippines, a high level of performance in the local disaster risk reduction management plan implementation is due to the sustained efforts of the local officials and the community residents [28]. In contrast, there was a consistent agreement among participants about the lack of behavioral health coordination between agencies during emergency events [20]. However, a related paper recommended expanding and refining the community health workers' training curricula especially in the area of environmental health [23]. In Japan, a sense of community responsibility was a strong predictor of people's actions in a proactive community in disaster preparations [24]. Also, there was clear evidence of older people sharing resources and experience in support of others of all ages in responding to and recovering from natural disasters [25]. And finally, to empower a community to resiliency, individuals need institutional support, social acceptability, a family support system, and improved social capital [33].

Lastly, the study also looks into statistical inferences to determine differences in the opinion or response of the sample population. Again, there were differences found in the responses in terms of the community and the number of family members. Parallel to the findings of this study, a study provided statistical differences in their research when the total and sub-scale scores were compared by age group, professional experience, working position, and prior disaster experiences [21].

5. Conclusion

Based on the findings of the study, the study concluded that the respondents are aware of the different sources of information about the disaster. The respondents also needed training in all of the mentioned items for different disaster situations and events. Also, the respondents partially observed a majority of the items for the preparation and response of the community to disaster. Also, there were significant differences in the sources of information, training needs, preparation, and disaster response when grouped according to the community. At the same time, there was also a significant difference in the training needs of the community when grouped according to the members of the family.

Just like any other studies, this current article also has its shares of limitations. First, the respondents in the different communities involved were not that sufficient enough. Since the selected communities were in far-flung areas and going there is quite difficult. Second, the participation of the respondents also possesses a challenge since some refuse to participate. Third, it is recommended to promote the study on a larger scale (national). Fourth, the research instrument should also include the latest ideas of social media contribution as a source of important information for disaster. And finally, a more in-depth statistical analysis is at hand for future researches and interested researchers.

Based on the aforementioned conclusion, the author hereby recommends a community disaster preparation enhancement program. This program provides the basic and essential disaster preparation and management indicated for the community. At the same time, the program offers seminars, workshops, and training for local officials, community leaders, significant individuals, and the whole community. This is to promote coordination, ease of action, and monitoring when a disaster strikes.

To raise/ increase the level of awareness of the community, the local government units should initiate an enhancement seminar, training, and drills for disaster. Constant monitoring, monthly evaluation of the community is endorsed towards increasing compliance levels of the community. Also, the study recommends the active involvement of other key players like the LGU, NGOs, and other prospective leaders in the community. Also, leadership training and seminars pertinent to the preparations and responses of the community is relevant. The proposed community disaster preparation enhancement program should be implemented firmly by the responsible governing body in the area and it will be sanctioned.

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