EXCELLENCIA
INTERNATIONAL MULTI-DISCIPLINARY JOURNAL OF EDUCATION
VOLUME 1, ISSUE NO. 6 (2023) | ISSN: 2994-9521

# Difficulties in the Implementation of Emergency Response in a Highly-Urbanized City: Basis for a Capability Building Plan

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## Abstract

The study focused on the difficulties encountered by barangay first responders in the implementation of emergency response in the areas of coordination and communication, training and information and education campaign. First responders experienced high level of difficulties in coordination and communication specifically in the clustering of barangays in order to avoid duplication of responses and prevent wastage of government resources. Respondents however, registered moderate level of difficulties in the areas of training, and information and education campaign specifically in the conduct of regular trainings for staff and support groups, and having and using independent telecommunication system, backed up by alternative communication links such as microwave and satellite systems. Older, male respondents and those who have been involved in emergency response for a shorter period of time, have higher level of difficulties than their counterparts who were younger, female and had longer length of service, respectively in all three areas. Meanwhile, although no significant differences were noted in the level of difficulties in the implementation of emergency response when grouped and compared according to age, sex and length of service, the responses of first responders in individual items indicate

problems specifically in coordination and communication that obtained the highest mean score, particularly in the clustering of barangays.

**Keywords:** Challenges, Difficulties, Emergency Response, Training

## Introduction

There is a vision change regarding emergency response, preparedness, and recovery. Stakeholders' cooperation, unity, and collaboration are all imperatives to helping a community recover and achieve a sense of normalcy (Tomkins, 2013). Emergency response requires collaboration and a wide range of public and private partners, including first responders, law enforcement units, incident management, and local government agencies (WSDOT, 2022).

The public health emergency that is the Covid-19 pandemic in 2020 has re-emphasized the critical need to have well-coordinated measures guided by a comprehensive plan when responding to emergencies (NEDA, 2023). Then Socioeconomic Planning Secretary Ernesto M. Pernia underscored how the public health emergency highlighted the need for a 'whole-of-government and whole-of-society approach in addressing the challenges posed by both the pandemic and other types of emergencies that first responders continue to face daily despite risks of spreading the virus.

Cordaid (2020) stressed the importance of equipping front liners and first responders with the necessary tools and knowledge on how to deal with both the pandemic and potential natural and artificial disasters to ensure that emergency responders are capable of performing non-Covid-related tasks without increasing the risk of spreading infection. Building mutual partnerships and networking, including strengthening cooperation between local actors from the public and private sectors, is crucial for emergency response (CordAid, 2020).

Potutan and Arakida (2021) discussed the importance of accepting the fact that the single-hazard approach to disaster response system, as experienced in Southeast Asian countries like the Philippines, India, and Japan, does not work in a pandemic scenario, stressing the need to integrate new measures, including skills training, updating standard operating procedures (SOPs) and disaster response guidelines in order 'to adapt to concurrent crises situations."

Moreover, a delay in emergency response would mean worsening injuries or deaths—the established relationship between emergency medical service delay time to mortality rate. Response time, a leading indicator of EMS, is a fundamental factor for prehospital care to be successful. It must be controlled to increase the survival rate (Cabral et al., 2018).
Additionally, careful planning is a critical part of the program because it helps identify the deficiencies such as lack of resources (equipment, trained personnel, supplies) and other items that can be resolved proactively (Borthwick, 2023).

The researcher, having been an emergency response frontline who has worked closely with first responders, was personally motivated to pursue having had first-hand experience on the ground when it comes to emergency response, difficulties, problems, and risks faced by frontline, especially during the onset of the Covid-19 pandemic in 2020. The death of a colleague and a

fellow emergency responder in the line of duty on August 23, 2020, due to a shortage of hospital beds, overflowing Covid patients, and difficulties in coordination prompted the researcher to investigate the level of problems in implementing emergency response as the basis for a capacity building plan.

**Objectives of the Study**

This study aimed to determine the first responders' Level of Difficulties in the Implementation of Emergency Response in a highly-urbanized city in the central Philippines for the Calendar Year 2023 as the basis for a capability-building plan.

## Materials and Methods

**Research Design**

The study employed the Descriptive Research Design to determine the difficulties in implementing Emergency Response in a highly-urbanized city in the central Philippines for the Calendar Year 2023.

According to Calmorin (2016), a descriptive research design method focuses on the present situation and aims to find the new truth. The truth may have different forms, such as an increased quantity of knowledge, a further generalization, or new "law," an improved insight into a factor.
Descriptive design is appropriate for this study because it aims to discover what prevails in the present condition or relationships, held opinions and beliefs, processes and effects, and developing trends. The design is a scientific methodology that entails monitoring and documenting a subject's behavior without altering it.

**Respondents of the Study**

The respondents of this study were the 205 barangay implementers of BDRRMO. There were 41 barangays surveyed, composed of 5 implementers for each barangay. The total population of barangay emergency first responders was 810. From this number, the sample size was determined through purposive sampling.
According to Norton (2018), purposive sampling refers to a group of non-probability sampling techniques in which units are selected because they have the characteristics you need in your sample.

**Data Gathering Instrument**

To determine the difficulties in implementing the Emergency Response in a highly urbanized city in the central Philippines for the Calendar Year 2023, the data needed for this study were gathered using a self-made survey questionnaire subjected to validity and reliability testing. The questionnaire was composed of two parts:

Part 1 dealt with the respondents' profiles, including their age, sex, and length of service.
Part II is the proper questionnaire that collected data to determine the difficulties in implementing emergency response in the Coordination and Communication, Training, and Information and Education Campaign. There were 10 line items for Emergency Response, 10 for Training and 10 for Information Education, and a Campaign for thirty (30) items for the three areas.

The respondents were asked to rate each item with the following numerical scores and descriptions: 5 being the highest with a description of an "Always," 4 as "Often," 3 as "Sometimes," 2 as "Rarely," and 1 as "Almost Never"

**Validity**

The degree of accuracy of an idea is what is meant by its validity. Validity is the degree to which the interpretations of test results are supported, and it depends on the specific purpose that the test is meant to address (Shields, 2015).

Since the instrument for this study was a self-made survey questionnaire, its validity was established. To accomplish that, a jury of 3 expert validators subjected the questionnaire to face and content validation. The first validator was a Doctor of Philosophy in Educational Management, a professor in the Graduate School, and had extensive experience in Public Administration. He was the former Incident Commander of the Provincial Incident Management Team for Covid-19 of Negros Occidental. The second validator was also a professor, a Doctor of Philosophy, and an expert in Statistics. The third validator was the former Executive Assistant and former Cluster Head of a Disaster Risk Reduction and Management Office (CDRRMO) of a highly-urbanized city and an emergency response and disaster management expert.

A five-point scale based on the criteria Carter V. Good and Douglas E. Scates set forth was established to rate each item's validity (Pineda, 2014). The Mean Score Range from 4.50-5.00 with Verbal Interpretation of "Excellent," 3.49-4.49 "Very Good," 2.50-3.49 "Good," 1.50-2.49 "Poor," and 1.00-1.49 as "Very Poor."

For this study, the validity score is 4.5, interpreted as "Excellent", meaning the instrument is valid.

**Reliability**

The consistency of the results or scores from one administration instrument to another and from one set of items is referred to as reliability (Bueno, 2016). Therefore, the researcher-made questionnaire was subjected to a reliability test to ensure the research instrument's accuracy, stability, and predictability.

Cronbach's alpha indicates the average correlation among the items that make up the scale. Cronbach's alpha is a measure of internal consistency, that is, how closely linked a set of items are as a group. It is regarded as a gauge of scale dependability. A "high" alpha value does not imply that the measure is unidimensional. The reliability coefficient of 0.70 to 1.0 is considered "acceptable" in most research situations (Abad et al., 2015).

To establish the reliability of the research instrument, the survey questionnaire was pilot-tested to thirty (30) BDRRM responders in the city of Talisay. Worth noting is that these respondents were not part of the actual respondents of the study.

For this study, the Reliability Index is 0.980, interpreted as "Excellent", meaning the instrument is reliable.

**Data Gathering Procedure**

After establishing the validity and reliability of the instruments, the researcher wrote a letter to the local chief executive for permission to conduct the study. After the approval, the researcher met the respondents and explained the study's purpose, giving instructions on how to accomplish the questionnaire objectively and honestly. As part of the protocol, they were assured of the confidentiality of the data collected.

The researcher guided the respondents in filling out the survey questionnaires and personally retrieved the research instruments afterward. The data gathered were then categorized, tabulated, and prepared for subsequent statistical treatment.

**Ethical Considerations**

This research paper strived to minimize the risk of harm to its target respondents by assuring them of the confidentiality of their responses and protecting their anonymity throughout the entire research process. At the onset, this research secured their free, prior informed consent and assured them of their right to withdraw from their research participation if deemed necessary.

**Analytical Schemes**

This study used descriptive and analytical schemes in the treatment of its data. The results of the study were analyzed per the objectives as follows:

Objective No. 1, which aimed to determine the profile of the respondents in terms of age, sex, and length of services, used the descriptive-analytical scheme.

Objective No. 2 used the descriptive-analytical scheme to determine the difficulties in implementing emergency response in Coordination and Communication, Training, Information, and Education Campaigns.

Objective No. 3 used the descriptive-analytical scheme to determine the difficulties in implementing the Emergency Response when respondents are grouped according to the aforementioned variables.

Objective No. 4 used the comparative-analytical scheme, which aimed to determine the level of difficulties in implementing the Emergency Response when respondents are grouped and compared according to the aforementioned variables.

**Statistical Tools**

The following statistical tools were used to analyze and interpret the results according to the study's objectives.

Objective No. 1 used Frequency Count and Percentage distribution to determine the profile of the respondents in terms of age, sex, and length of service.

Categorical data are best described by counting how many of the subjects' responses fall within each category in frequency distribution. By calculating their percentages or proportions, the number of times the total number gave each response (Baylor, 2014).

Objective No. 2 used the mean to determine the difficulties in implementing emergency response according to the areas of Coordination and Communication, Training and Information, and Education campaigns.

Objective No. 3, which aimed to determine if there is a significant difference in the level of difficulties in the implementation of emergency response when the respondents are grouped according to the aforementioned variables, the mean was used.

The mean is the average of all numbers, sometimes called the arithmetic mean. To calculate the mean, add all the numbers in a set and then divide the sum by the total count of numbers (Rouse, 2015).

Mean Score Range Verbal Interpretation
4.50 - 5.00 Very High Level
3.59 - 4.49 High Level
2.50 - 3.49 Moderate Level
1.50 - 2.49 Low Level
1.00 - 1.49 Very low Level

Objective No. 4, which aimed to determine if there is a significant difference in the level of difficulties in the implementation of emergency response when respondents are grouped and compared according to the aforementioned variables, the Mann-Whitney U Test was utilized.

According to La Morte (2017), the Mann-Whitney U test is a famous nonparametric test to compare outcomes between two independent groups.

Mann-Whitney U test is the non-parametric alternative test to the independent sample t-test. It is a non-parametric test used to compare two sample means from the same population and to test whether two sample means are equal. Usually, the Mann-Whitney U test is used when the data is ordinal or when the assumptions of the t-test are not met (Altones, 2017).

The 0.05 significance level was used as a basis for accepting or rejecting the null hypothesis. Suppose the p-value is lower than the 0.05 level of significance. In that case, you can reject the null hypothesis that the difference is due to random sampling and conclude that the populations are distinct. If the P value is higher than 0.05 significance level, the data do not give you any reason to reject the null hypothesis (Beran, 2018).

## Results and Discussion

This section presents the data gathered, its analyses, and interpretations supported by tables, figures, and discussions of findings on the difficulties in implementing emergency response in a highly-urbanized city in Central Philippines for the Calendar Year 2023.

**Profile of the Respondents According to the Variables, Age, Sex, and Length of Service**

**Table 2**

Profile of Respondents

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Age | Younger (below 40 years old) | 112 | 54.60 |
| | Older ( 40 years old and above) | 93 | 45.40 |
| | Total | 205 | 100 |
| Sex | Male | 97 | 47.30 |
| | Female | 108 | 52.70 |
| | Total | 205 | 100 |
| Length of Service | Shorter (less than 6 years) | 112 | 54.6 |
| | Longer (6 years and more) | 93 | 45.4 |

| | | |
|---|---|---|
| Total | 205 | 100 |

Table 2 breaks down data revealing the profile of 205 respondents surveyed to determine the difficulty level in implementing Emergency Response: Basis for A Capability Building Plan.

Data in the table shows that 112 or the majority (54.60%) of respondents belonged to the younger age group (below 40 years old), while the remaining 93 first responders (45.40%) were more senior (40 years old and above).

These data imply that those interested in emergency response are younger community members and are more inclined to volunteer as emergency responders, as citizens of this age are more motivated to participate in volunteerism than their older counterparts. However, this negates West (2022), which uncovered statistical data proving youth and young adults volunteer the least and older adults volunteer the most, citing career and values as motives that ranked highest among youth and adults.

Fifty-two point seventy percent (52.70%) or 108 respondents were female, while 47.30% or 97 were male.

Most of the respondents surveyed were women because of the nurturing trait of females, which makes them more effective and more inclined to get into endeavors like emergency response in their respective communities. This agrees with Eksi et al. (2022), which underscored female volunteers' vital role in saving lives because of their increased resilience to disasters. It adds that women's unique attributes, such as motherhood, benefit the common good.

Meanwhile, 112, or 54.6%, have been involved in emergency response for a shorter period (less than 6 years), while 93, or 45.4%, were in the same service for a more extended period or 6 years and above. The majority of those who are active in emergency response are relatively new in the service because of the high turnover rate of barangay first responders as a significant number of responders discontinue their service for reasons like the lack of relevant skills which keep them from performing well which agrees with Fuentes and Yaneza (2021) the necessity for barangays to implement capability building programs for barangay rescue teams as per mandated by Republic Act 10121 and continued funding for training and seminars to capacitate emergency responders and further encourage and motivate them to actively and consistently perform their duties.

**Level of Difficulties in the Implementation of Emergency Response According to the Areas, Coordination and Communication, Training, and Information and Education Campaign**

**Table 3**

*Level of Difficulties in the Implementation of Emergency Response in the Area Coordination and Communication*

| **Area** | | |
|---|---|---|
| **A. Coordination and Communication** | **Mean** | **Interpretation** |
| *As an emergency first responder, I have difficulty in…* | | |

| | | |
|---|---|---|
| 1. Regulates first responders and those solely engaged in enforcement, crime prevention, and security who assist in disaster risk reduction and management | 3.55 | High Level |
| 2. Implementing prescribed ambulance route and speed limit (40 km/h) in coordination with PNP/TMU/BTAO | 3.46 | Moderate Level |
| 3. Coordinating with the Barangay DRRM Task Force for disaster assessment and monitoring with DRRMO and member committees during disasters and emergencies | 3.50 | High Level |
| 4. Clustering of barangays into four (central, north, east, south) to avoid duplication of responses and prevent wastage of government resources | 3.56 | High Level |
| 5. Reducing response time to 10 minutes | 3.37 | Moderate Level |
| 6. Dispatching teams in every emergency and regulating responses performed by all accredited emergency and disaster response groups for a well-coordinated initiative | 3.50 | High Level |
| 7. Issuing mobilization orders among accredited responders before performing responses outside the jurisdiction of the LGU | 3.34 | Moderate Level |
| 8. Submitting updated digital or hard copies of inventory of accredited personnel, available vehicles, equipment, and logistical support by accredited responders | 3.33 | Moderate Level |
| 9. Establishing a Medical and Emergency Response Center (MERC) that shall be the only agency to answer emergency calls from the "911 number" and shall dispatch emergency response teams by coordinating with volunteer groups or government agencies | 3.43 | Moderate Level |
| 10. Making and maintaining a digital database for MERC that stores important information in every distress call; information will be held for five (5) years | 3.34 | Moderate Level |
| **Overall Mean** | **3.44** | **Moderate Level** |

Table 3 shows data on the Level of Difficulties in the Implementation of Emergency Response in the Area of Coordination and Communication, where the overall mean score is 3.44, interpreted as a Moderate Level.

Item 8, "Submitting updated digital or hard copy of the inventory of accredited personnel, available vehicles, equipment and logistical support by accredited responders," got the lowest mean score of 3.33, interpreted as Moderate Level.

However, item number 4, "Clustering of barangays into four (central, north, east, south) to avoid duplication of responses and prevent wastage of government resources," obtained the highest mean score of 3.56, interpreted as a High level, implying that poor coordination is a significant

obstacle in emergency response which could be due to low levels of awareness and skills in the use of technology as an effective coordination and communication tool, especially in emergency response. This result further implies that barangay first responders are technologically challenged, the reason why they are unable to meet this requirement which can only be accomplished through the utilization of modern digital technology, thus highlighting the need to educate and train them on how to utilize technology and increase their computer literacy to increase work efficiency which agrees with Sakurai and Murayama (2019) who underscored the use of information technology in different disaster management stages such as disaster response and recovery. The research findings highlight the critical role of information systems in recording, exchanging, and processing information, emphasizing how a combination of different parts can enhance system performance.

**Table 4**

*Level of Difficulties in the Implementation of Emergency Response in the Area Training*

| **Area** | | |
|---|---|---|
| B. Training<br>*As an emergency first responder, I have difficulty in…* | Mean | Interpretation |
| 1. Holding regular refresher training sessions for staff and support groups | 3.47 | Moderate Level |
| 2. Equipping all emergency first on-scene responders with specific training to be able to attend to the particular needs of victims | 3.36 | Moderate Level |
| 3. Updating skills of first responders | 3.43 | Moderate Level |
| 4. Standardizing the training program for all emergency first responders (public and private) | 3.38 | Moderate Level |
| 5. Providing up-to-date seminars on new practices and standard operating procedures for a more efficient emergency response | 3.43 | Moderate Level |
| 6. Holding simulation drills and other training involving community members and stakeholders | 3.23 | Moderate Level |
| 7. Enhancing skills in handling media and utilizing both traditional and new media in educating and informing the public about the goings-on during emergencies. | 3.32 | Moderate Level |
| 8. Conducting workshops and seminars to reskill and upskill government, private, and barangay volunteers | 3.28 | Moderate Level |
| 9. Strictly observing and complying with the guidelines on barangay clustering for smooth flow of instructions and coordination of activities | 3.29 | Moderate Level |
| 10. Holding capability-building workshops and drills to reduce emergency response time. | 3.36 | Moderate Level |
| Overall Mean | 3.35 | Moderate Level |

Table 4 shows the Difficulties in Implementing Emergency Response in the Area Training. The overall mean score is 3.35, interpreted as Moderate Level. Item number 6, "Holding simulation drills and other training involving community members and stakeholders," got the lowest mean score of 3.23, interpreted as a Moderate Level.

Item number 1, "Holding regular refresher training sessions for staff and support groups," got the highest mean score of 3.47, interpreted as Moderate Level, implying that this aspect of emergency response remains a significant challenge because of limited resources and the difficulty in getting different sectors to collaborate and provide support to emergency respondents and disaster preparedness activities which agrees with Bajracharya and Hastings (2020) who point out that the conduct of training and similar endeavors require a significant amount of budget for its behavior and affects many sectors. This problem often stems from the lack of collaboration and low level of engagement on the part of implementers and stakeholders.

**Table 5**

*Level of Difficulties in the Implementation of Emergency Response in the Area Information and Education Campaign*

| **Area** | | |
|---|---|---|
| C. Information and Education Campaign<br>*As an emergency first responder, I have difficulty in…* | Mean | Interpretation |
| 1. Efficiently collecting, analyzing, and disseminating information. | 3.36 | Moderate Level |
| 2. Accommodating, informing, and taking direction from central government crisis management structures | 3.38 | Moderate Level |
| 3. Fully equipping generic operations areas, offices, and meeting/conference facilities | 3.38 | Moderate Level |
| 4. Having and using an independent telecommunications system backed up by alternative communication links such as microwave and satellite systems | 3.43 | Moderate Level |
| 5. Disseminating information-education campaign materials in barangays via social media, leaflets, or information boards (4mX4m); aggressive barangay disaster information drive | 3.32 | Moderate Level |
| 6. Disseminating updated hotline numbers (active landlines) in strategic areas in the city and barangays via social media and conventional means | 3.36 | Moderate Level |
| 7. Regularly conducting disaster preparedness seminars and drills for community members, schools, and various sectors | 3.30 | Moderate Level |
| 8. Properly communicating and coordinating with responding units, DRRM, and barangays during emergencies for quick and smooth response | 3.32 | Moderate Level |
| 9. Issuing a mobilization order thru an electronic ticket, text message, or phone call should there be a need for accredited responders prior to performing responses outside of the LGU when immediate response is necessary | 3.41 | Moderate Level |
| 10. Utilizing social media and websites to provide public advisories, warnings, and updates about emergency response and disaster prevention | 3.33 | Moderate Level |
| Overall Mean | 3.36 | Moderate Level |

Table 5 presents data on the Level of Difficulties in the Implementation of Emergency Response in the Area of Information and Education Campaigns, where the overall mean score is 3.36, interpreted as a Moderate Level.

Item 7, "Regularly conducting disaster preparedness seminars and drills for community members, schools and various sectors," obtained the lowest mean score of 3.30, interpreted as a Moderate Level.

Item number 4, "Having and using an independent telecommunications system, backed up by alternative communication links such as microwave and satellite systems," got the highest mean score of 3.43, interpreted as a Moderate Level. Among implications of this research, finding could be the few volunteers and lack of resources which is supported by the Philippine Disaster Management May Issue (2017) that documented the lack of capacities of line agencies and local government units to assess DRRM activities, citing limited workforce, lack of technical knowledge and understanding, lack of technology and scarcity of financial resources among the reasons.

**Level of Difficulties in the Implementation of Emergency Response According to the Areas, Coordination and Communication, Training, and Information and Education Campaign when grouped according to the Variables, Age, Sex, and Length of Service**

**Table 6**

*Level of Difficulties in the Implementation of Emergency Response in the Area Coordination and Communication According to Age*

| **Categories** | **Younger** | | **Older** | |
|---|---|---|---|---|
| A. Coordination and Communication<br>*As an emergency first responder, I have difficulty in…* | Mean | Interpretation | Mean | Interpretation |
| 1. Regulates first responders and those solely engaged in enforcement, crime prevention, and security who assist in disaster risk reduction and management | 3.38 | Moderate Level | 3.74 | High Level |
| 2. Implementing prescribed ambulance route and speed limit (40 km/h) in coordination with PNP/TMU/BTAO | 3.41 | Moderate Level | 3.53 | High Level |
| 3. Coordinating with the Barangay DRRM Task Force for disaster assessment and monitoring with DRRMO and member committees during disasters and emergencies | 3.36 | Moderate Level | 3.67 | High Level |
| 4. Clustering of barangays into four (central, north, east, south) to avoid duplication of responses and prevent wastage of government resources | 3.51 | High Level | 3.61 | High Level |
| 5. Reducing response time to 10 minutes | 3.29 | Moderate Level | 3.47 | Moderate Level |
| 6. Dispatching teams in every emergency and regulating responses performed by all accredited emergency and disaster response groups for a well-coordinated initiative | 3.46 | Moderate Level | 3.55 | High Level |
| 7. Issuing mobilization orders among accredited responders before performing responses outside the jurisdiction of the LGU | 3.19 | Moderate Level | 3.53 | High Level |
| 8. Submitting updated digital or hard copies of inventory of accredited personnel, available vehicles, | 3.27 | Moderate Level | 3.41 | Moderate Level |

| | | | | |
|---|---|---|---|---|
| equipment, and logistical support by accredited responders | | | | |
| 9. Establishing a Medical and Emergency Response Center (MERC) that shall be the only agency to answer emergency calls from the "911 number" and shall dispatch emergency response teams by coordinating with volunteer groups or government agencies | 3.54 | High Level | 3.29 | Moderate Level |
| 10. Making and maintaining a digital database for MERC that stores important information in every distress call; information will be held for 5 years | 3.38 | Moderate Level | 3.30 | Moderate Level |
| Overall Mean | 3.38 | Moderate Level | 3.51 | High Level |

Table 6 breaks down data on the Difficulties in Implementing Emergency Response in Area Coordination and Communication According to Age.

The highest overall mean score is obtained by older respondents, 3.51, interpreted as High Level, while younger respondents got an overall mean score of 3.38, interpreted as Moderate Level only.

Item number 9, "Establishing a Medical and Emergency Response Center (MERC) that shall be the only agency to answer emergency calls from the "911 number" and shall dispatch emergency response teams by coordinating with volunteer groups or government agencies," recorded the lowest mean score of 3.29, interpreted as Moderate Level.

On the other hand, item 1, "Regulates first responders and those solely engaged in enforcement, crime prevention and security who assist in disaster risk reduction and management," obtained the highest mean score of 3.74, interpreted as High Level among Older respondents.

This implies that this aspect of emergency response needs more attention because older emergency responders are less enthusiastic and as idealistic and resolute as their younger counterparts in ensuring emergency response policies are followed and enforced. Additionally, older respondents probably need more enthusiasm and the drive to accomplish tasks of this nature. This requires decisiveness and political will, negatively influencing their preparedness and efficiency at work. Generally, it can be said that this group of older barangay first responders are not well-prepared for emergencies which agrees with Killian et al. (2017) that older people were generally ill-prepared for disasters and emergencies and their lack of preparedness was widespread across social, demographic and economic groups in the United States. The study's results pushed researchers to formulate policies and conduct outreach where disaster preparedness is discussed.

Meanwhile, among younger respondents, item 7, "Issuing a mobilization order among accredited responders before performing responses outside the jurisdiction of the LGU," obtained the lowest mean score of 3.19, interpreted as a Moderate Level.

Item number 9, "Establishing a Medical and Emergency Response Center (MERC) that shall be the only agency to answer emergency calls from the "911 number" and shall dispatch emergency response teams by coordinating with volunteer groups or government agencies', got the highest mean score of 3.54, interpreted as High Level. This implies that the short time younger respondents have been in service causes them to have difficulty complying with this task because they lack familiarity or mastery of the emergency response standard operating procedures and protocols, sometimes hindering them from performing their duties efficiently. Thus, this requires more training for them to capacitate them to perform such functions. This agrees with Powell (2012), that asserts that with adequate education and proper training, young volunteers can play essential roles in disaster preparedness and emergency response efforts.

**Table 7**
*Level of Difficulties in the Implementation of Emergency Response in the Area Training According to Age*

| **Categories** | **Younger** | | **Older** | |
|---|---|---|---|---|
| **B. Training** | **Mean** | **Interpretation** | **Mean** | **Interpretation** |
| *As an emergency first responder, I have difficulty in…* | | | | |
| 1. Holding regular refresher training sessions for staff and support groups | 3.40 | Moderate Level | 3.55 | High Level |
| 2. Equipping all emergency first on-scene responders with specific training to be able to attend to the specific needs of victims | 3.31 | Moderate Level | 3.42 | Moderate Level |
| 3. Updating skills of first responders | 3.44 | Moderate Level | 3.42 | Moderate Level |
| 4. Standardizing the training program for all emergency first responders (public and private) | 3.47 | Moderate Level | 3.27 | Moderate Level |
| 5. Providing up-to-date seminars on new practices and standard operating procedures for a more efficient emergency response | 3.46 | Moderate Level | 3.39 | Moderate Level |
| 6. Holding simulation drills and other training involving community members and stakeholders | 3.17 | Moderate Level | 3.30 | Moderate Level |
| 7. Enhancing skills in handling media and utilizing both traditional and new media in educating and informing the public about the goings-on during emergencies. | 3.26 | Moderate Level | 3.40 | Moderate Level |
| 8. Conducting workshops and seminars to reskill and upskill government, private, and barangay volunteers | 3.21 | Moderate Level | 3.35 | Moderate Level |
| 9. Strictly observing and complying with the guidelines on barangay clustering for smooth flow of instructions and coordination of activities | 3.19 | Moderate Level | 3.41 | Moderate Level |
| 10. Holding capability-building workshops and drills to reduce emergency response time. | 3.35 | Moderate Level | 3.37 | Moderate Level |
| **Overall Mean** | **3.33** | **Moderate** | **3.39** | **Moderate** |

Table 7 presents data on the Level of Difficulties in Implementing Emergency Response in Area Training According to Age.

While both categories of respondents recorded a Moderate Level of difficulties in the implementation of emergency response, however, older respondents obtained the highest overall mean score of 3.39. At the same time, their younger counterparts only got an overall mean score of 3.33.

The lowest mean score was obtained by item 6, "Holding simulation drills and other training involving community members and stakeholders," 3.17, interpreted as a Moderate Level among younger respondents. Item number 4, "Standardizing the training program for all emergency first responders (public and private)," got the lowest mean score among older respondents, interpreted as Moderate Level.

On the other hand, item number 4, "Standardizing the training program for all emergency first responders (public and private)," got the highest mean score among younger respondents, interpreted as a Moderate Level. In comparison, older respondents still recorded the highest mean score of 3.55 in item 1, "Holding regular refresher training sessions for staff and support groups," interpreted as High Level. This implies that there is a lack of motivation among older barangay first responders where undergoing refresher training is concerned, possibly caused by a lack of education, which agrees with Torani et al. (2019), who emphasize the importance of continued education on disasters and emergencies to equip volunteers with the technical knowledge. Furthermore, the research findings found that disaster education is a functional, operational, and cost-effective tool for risk management because trained volunteers can better execute tasks and protect themselves and others.

**Summary of Findings**

The significant findings of the study are as follows:

Majority of barangay emergency responders surveyed in a highly-urbanized city in central Philippines were below 40 years old, more than half of the sample size that participated in the data gathering process were female and more than half of respondents have been involved in emergency response in their respective barangays for a shorter period of time or less than six years.

Respondents registered High Level of difficulties in the implementation of emergency response in the area Coordination and Communication specifically in the clustering of barangays to four (central, north, east, south) to avoid duplication of responses and prevent wastage of government resources. However, Moderate Level of difficulties were encountered by barangay emergency responders in the areas Training and Information and Education Campaign, specifically when it comes to holding regular refresher training sessions for staff and support groups and having and using an independent telecommunication system, backed up by alternative communication links such as microwave and satellite systems, respectively.

Although difficulties encountered by older respondents are moderate, however, based on the overall mean scores, this category of respondents have higher levels of difficulties than younger barangay emergency responders based on the mean scores obtained in three areas namely: Coordination and Communication, Training and Information and Education Campaign. Older respondents experienced higher levels of difficulties than younger responders, particularly in regulating first responders and those solely engaged in enforcement, crime prevention and security who assist in disaster risk reduction and management and, holding regular refresher

training sessions for staff and support groups, utilizing social media and websites in providing public advisories, warnings and updates in relation to emergency response and disaster prevention.

On the other hand, male respondents encountered a higher level of difficulties in the implementation of emergency response than their female counterparts in all three areas as shown in the overall mean scores obtained under Coordination and Communication, Training and Information and Education Campaign. The tasks that male emergency respondents had difficulty in implementing are regulating first responders and those solely engaged in enforcement, crime prevention and security who assist in disaster risk reduction and management, providing up-to-date seminars on new practices and standard operating procedures for a more efficient emergency response, and having and using an independent telecommunications system, backed up by alternative communication links such as microwave and satellite systems.

In terms of length of service, respondents who have been involved in emergency response for six years and above encountered Moderate Level of difficulties however, their mean scores indicate high level of difficulties than their counterparts who have been in service for a shorter period in the areas Training and Information and Education Campaign, particularly in holding regular refresher training sessions for staff and support groups and in disseminating information-education campaign materials in barangays via social media, leaflets or information board (4mX4m); aggressive barangay disaster information drive. In the area Coordination and Communication, emergency responders with shorter length of service registered the highest overall mean score with an interpretation of Moderate Level. However, the same category of respondents experienced High Level of difficulties in the task or function "Clustering of barangays into four (central, north, east, south) to avoid duplication of responses and prevent wastage of government resources".

Meanwhile, no significant differences were noted in the level of difficulties in the implementation of emergency response in the areas Coordination and Communication, Training and Information and Education Campaign when respondents are grouped and compared according to Age, Sex and Length of Service. Therefore, the null hypothesis is accepted. However a "not significant" result does not imply the absence of a problems or difficulties but simply indicate that the categories of respondents do not vary as against the study variables. all barangay emergency responders who took part in the survey experienced and encountered difficulties in the implementation of emergency response regardless of age, sex and length of service. In some areas, the results indicate specific items of tasks of responders they have encountered high level of difficulties like in the area of Coordination and Communication, specifically in the clustering of barangays.

## Conclusion

This study concludes by summarizing the key research findings in relation to the research objects and questions, and discussing the value and contribution thereof. It also reviews the limitations of the study and proposes opportunities for research work.

After careful and thorough analyses and interpretation of statistical data generated from responses given by barangay emergency responders in a survey conducted in a highly-urbanized city in central Philippines, the following conclusions have been reached:

There is a high turnover rate of barangay emergency responders in the HUC as revealed in the data college during the survey that revealed that majority of those involved in emergency response in communities are relatively new, with less than six years of service, who also belong to the younger category or less than 40 years old. Women are more interested or inclined to volunteer as emergency first responders in their respective villages as revealed also in the data.

Generally, barangay emergency responders experienced High Level of difficulties in performing duties related to Coordination and Communication specifically in the clustering of barangays which is vital in increasing efficiency through avoidance of duplication of responses in order to prevent wastage of government resources. Thus, this aspect specifically, the regular conduct of refresher training sessions for staff and support groups and the use of an independent telecommunications system, backed up by alternative communication links such as microwave and satellite systems, are among needs of emergency responders that must be prioritized by departments and agencies concerned in order to improve the implementation of emergency response.

Older respondents encountered higher levels of difficulties than younger emergency respondents in three areas namely: Coordination and Communication, Training and Information and Education Campaign.

Tasks which older emergency responders have higher levels of difficulties in implementing include regulating first responders and those solely engaged in enforcement, crime prevention and security who assist in disaster risk reduction and management and, holding regular refresher training sessions for staff and support groups, utilizing social media and websites in providing public advisories, warnings and updates in relation to emergency response and disaster prevention.

Male respondents encountered higher level of difficulties in the implementation of emergency response in all three areas also, specifically regulating first responders and those solely engaged in enforcement, crime prevention and security who assist in disaster risk reduction and management, providing up-to-date seminars on new practices and standard operating procedures for a more efficient emergency response, and having and using an independent telecommunications system, backed up by alternative communication links such as microwave and satellite systems.

On the other hand, those surveyed who were relatively new in emergency response encountered higher level of difficulties in the areas of Training and Information and Education Campaign, than those who have been in service for six years and above. Difficulties experiences were in the holding regular refresher training sessions for staff and support groups and in disseminating information-education campaign materials in barangays via social media, leaflets or information board (4mX4m); aggressive barangay disaster information drive. The same category of respondents experienced Moderate Level of difficulties in the area Coordination and Communication, specifically in clustering of barangays into four (central, north, east, south) to avoid duplication of responses and prevent wastage of government resources.

Finally, there is no significant difference in the level of difficulties encountered by barangay emergency responders in all three areas when respondents are grouped and compared according to variables Age, Sex and Length of Service.

Future researchers may explore other aspects of emergency response that the study was not able to cover like the reasons behind the data revealing that the population of barangay emergency responders is dominated by younger and female volunteers, the lack of standardized intervention

protocols and strategies used by emergency responders as well as the inability to implement the clustering of barangays into four.

## Recommendations

Barangay Disaster Risk Reduction and Management Councils are expected to effectively and efficiently implement the laws pertaining to emergency response and disaster risk reduction and management like the (national law). However, it is a fact that despite the years of service, exposure to emergency situations and different types of disasters, emergency responders continue to face difficulties as they go about their daily routine which aims to save lives and properties and to mitigate the impact of disasters and emergencies on people and the environment.

The study was conducted in order to determine the level of difficulties in the implementation of emergency response in a highly-urbanized city in central Philippines.

Based on the results of the study, the following recommendations are put forward:

The Local Disaster Risk Reduction and Management Office (LDRRMO) together with the Barangay Disaster Risk Reduction and Management Council (BDRRMC) implement immediately the clustering of barangays into four (central, north, east and south). This step is crucial in increasing efficiency and preventing duplication of responses that result in wastage of government resources.

The allocation of funds by the Local Government Unit for the regular and consistent conduct of refresher trainings for staff and support groups.

The implementation of a standardized emergency response program by the Local Disaster Risk Reduction and Management Office (LDRRMO) that will equip all emergency respondents with relevant skills and uniform intervention strategies.

The conduct of seminars and workshops on the utilization of all forms of media (traditional and social media) to equip emergency responders with the necessary technical knowledge and skills in taking advantage of available media in order to inform and educate communities on emergency preparedness, prevention and response. The said activities must be facilitated by the Local Government Unit (LGU), Local Disaster Risk Reduction and Management Office (LDRRMO) and the Barangay Disaster Risk Reduction and Management Council (BDRRMC) with the help of the Local Public Information Office, Philippine Information Agency and private media organizations.

For the LGU, LDRRMO and public and private sector agencies involved in emergency response to conduct training-seminars on standard operating procedures (SOPs) for all who engage in enforcement, crime prevention and security who assist in disaster risk reduction and management, for a more efficient and effective emergency response.

For the BDRRMC to closely work with schools, community leaders and sector representatives within its locale, to establish strong linkages that will redown to the successful conduct of emergency prevention and emergency response-related activities like simulation drills and emergency prevention and response seminars for students and community members.

All these can only be successfully achieved through the collaboration and cooperation of all sectors because disaster prevention and emergency response is and must be the concern and priority of everyone.

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