DISASTER PREPAREDNESS OF HOUSEHOLDS IN TIMES OF PUBLIC HEALTH EMERGENCY

Loreno P. Norcio[1,a], Angelica C. Maranan[1,b], Donnalyn J. Remo[1,c], Welnie P. Lunar[1,d], Elda T. Filasol[1,e]
[1]Cuenca National High School

Abstract

Disaster is omnipresent and worsened by COVID-19. This study determined the households' disaster preparedness amidst health crises. Respondents were taken through convenience sampling. Researcher-made questionnaire was used. Data were collected through Google form and underwent frequency, ranking and chi-square. The respondents' disaster-related apparatuses were cellphones with connectivity, television, first aid kits with cotton, medicines, and elastic gauze, LIGTAS bags with flashlights, hygiene kit, and facemask and face shield. Their disaster-response tools were emergency light, whistle, and rope. Their adoption of disaster preparedness practices are almost always true on emergency and disaster awareness ($\bar{x} = 3.48$); capacity building with drills ($\bar{x} = 3.36$), and projects and programs ($\bar{x} = 3.69$); identifying risks ($\bar{x} = 3.51$); continuity of essential services ($\bar{x} = 3.60$); partnerships with lgus and ngos ($\bar{x} = 3.52$); and information, education, and communication (EIC) activities ($\bar{x} = 3.52$). Demographic profiles have significant relationships on these areas. This study is helpful in policymaking and proposing programs and projects related to households' disaster preparedness.

***Keywords**: Disaster Preparedness, Households, COVID-19, SDRRM*

Introduction

Disaster is a sudden serious disturbance of the functioning of a community that outdoes its ability to cope using its own resources (UNDRR, 2017). It is extremely disruptive and may cause suffering, deprivation, hardship, injury, death, disease, interruption of commerce and business, and the partial or even destruction of critical infrastructures such as but is not limited to homes, hospitals, and other buildings, roads, bridges, power lines, etc. The damages may differ from one place to another as there are certain types of disasters that are more likely to occur in certain areas only (Abanador, et al., 2020).

Philippines is within the Pacific Ring of Fire and has been continuously razed by plethora of natural and human-induced disasters. Around 20-25 typhoons ravage the country annually (Heintze, et al., 2018). Moreover, 220 volcanoes are in the country with at least 22 of them are active. Consequently,

Philippines is most vulnerable to the effects of climate change. On Global Climate Risk Index 2020, it ranked fourth among countries that were affected by the extreme weather events (Eckstein, et al., 2020). Inform Global Risk Index 2020 ranked it 11th with the highest hazard and exposure to natural and human hazards (DBCC, 2021). In the 2020 World Risk Index, it ranked ninth among 181 countries that has the highest disaster risk with 20.96% risk (Behlert, 2020).

From the region down to the municipality, all experience disaster. Region IV-A CALABARZON has provinces that is part of the Valley Fault System. The East Valley Fault is 10 km long and passes through Rodriguez and San Mateo in the province of Rizal. This fault can generate a 6.2 magnitude earthquake with intensity VIII. Meanwhile, the West Valley fault is 100 km long that traverses through portions of Manila and the provinces of Rizal, Laguna, and Cavite. This fault can generate a 7.2 magnitude earthquake with intensity VIII destructive ability. Meanwhile, the province of Batangas houses one of the most active volcanoes in the Philippines which had its phreatomagmatic eruption and placed the province under the state of calamity in January 2020 (NDRRMC, 2020). In April 2017, Batangas experienced earthquake swarm. Cuenca, one of its municipalities and the location of the school, has some of its barangays as part of the 14-km danger zone of the Taal Volcano. Thirty-three percent of its area was prone to base surge. Other areas are also vulnerable to ballistic projectiles and volcanic tsunami (DOST-PHIVOLCS, 2020). Within this town, resides Mt. Makulot which was affected by the April 2017 6.0 Calatagan earthquake. A landslide from the mountain was reported. These hazards and disasters are still present, and the current situation of the town was worsened by Corona Virus Disease (COVID-19). The municipality of Cuenca, as of the writing of this paper, had detected a total of 482 positive cases. Four hundred forty-eight of them had recovered while 16 is still under quarantine. Unfortunately, 18 died (CRHU, 2021). Meanwhile, vaccination is still in progress.

This health crisis significantly hits the education sector. Various modalities were introduced for continuity of learning. Most learners enrolled under Modular Distance Learning modality. As education plays a vital role in disaster awareness, the pandemic has impeded its usual activities that are primarily done in face-to-face modality. Drills and seminar-workshops related to disaster risk reduction and management were done virtually. Learners, parents, and other stakeholders remain to take part in all the programs of the SDRRM; however, the numbers of participants were smaller than the actual population. It was presumed that this is due to the unavailability of gadgets and data connection. Only those with slightly strong to strong internet connection and internet-capable phones were being favored.

With the uncertainty on the exact time and place of a disaster, it is expected that everyone is prepared. Preparedness is the state of being ready for any situation which aims to minimize the impact of any given disaster on anyone's health, safety, and property. On one hand, disaster preparedness refers to knowledge and capacities developed by governments, response and recovery organizations, communities, and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent, or current disasters (UNDRR,

2017). It is part of the National Disaster Risk Reduction and Management Framework aimed at safer, adaptive, and disaster-resilient Filipino communities towards sustainable development. Disaster preparedness is being trained from higher levels down – from national level down to local level. Moreover, schools enjoin the NDRRM through various drills and disaster awareness programs. With the threat of COVID-19 and inability to conduct physical activities, disaster preparedness is now being transferred into households as they were seen as the forefront of destruction when disaster hits and are also the first to suffer from its impacts (Bagarinao, 2016).

This study generally aims to analyze the status of the disaster preparedness of the households in the municipality of Cuenca amidst the public health emergency. Specifically, this study seeks to determine the demographic profile of the household-respondents in terms of sex, age, work status, household size, length of residency, type of residence, address, highest educational attainment, means of communication available at home, sources of information available at home, household income and available materials and equipment for disaster occurrences. Additionally, it aims to identify the likelihood of adoption of disaster preparedness practices in their households amidst the public health emergency in terms of awareness of emergency and disaster response, DRRM localization, capacity building, risk assessment and reduction, continuity of essential services, partnership, and information education and communication. Moreover, it aims to solve for the significant relationship between the demographic profile of respondents and their adoption of disaster preparedness practices. Lastly, it seeks to craft an action plan based on the results of the study.

With the inability to conduct face-to-face classes, learners are bound in their homes and with their families. Household will be at the vanguard of disaster hence it is needed to assess the learners' preparedness. Therefore, this study was formulated.

Disaster Risk Reduction and Management in the Philippines

Republic Act No. 10121 also known as "An Act Strengthening the Philippine Disaster Risk and Reduction and Management System providing for the National Disaster Risk Reduction and Management Plan, Appropriating Funds, Therefore and Other Purposes" was passed and approved on May 27, 2010. One of its salient points is the immediate release of calamity funds to local government units for disaster mitigation and preparedness. This allows the local government units to utilize 70% of the total calamity fund to risk-reduction measures and 30% to quick response activities. This also enables the LGUs to purchase better communication and early warning devices, search and rescue equipment, and conduct trainings for volunteer groups who would be the first responders for any disasters (Congress of the Philippines, 2010).

The National Disaster Risk Reduction and Management Council (NDRRMC) is the body that supervises and issues policies, projects and programs on disaster mitigation, preparedness, recovery, and rehabilitation. It also

facilitates Community-Based Disaster Risk Reduction and Management (CBDRRM) trainings, recognizing the role and potentials of barangay leaders and community folks as "front-liners" in disasters (NDRRMC, 2013). Moreover, it leads and coordinates the quarterly nationwide simultaneous earthquake drills and constantly provides guidance in the effective implementation of the NDRRMP especially at the local level, usually in coordination with other agencies.

One of the pillars of the Disaster Risk Reduction and Management Framework is preparedness. Disaster preparedness involves contingency planning, training, and the setting up of policies and protocols.

Disaster Preparedness and the Education Sector

With these disasters and hazards around, education is one of the most vulnerable sectors during these emergencies. From SY 2009-2010 to SY 2017-2018, 43,810 schools nationwide have reported effects of natural hazards. There have been 21,949 schools which reported impacts of human-induced hazards. These hazards impeded the provision of education, threaten, and affect both the lives of students and personnel, and other educational resources and investments. Therefore, reducing disaster risks confronting the education sector is paramount to the achievement of the Department of Education's (DepEd) outcomes, namely: access, quality, and governance (DRRMS, 2018).

Through the Disaster Risk Reduction and Management Service (DRRMS), DepEd personnel, offices, schools, and learners are empowered in ensuring safety and learning continuity. The DRRMS also institutionalized Disaster Risk Reduction and Management (DRRM), Climate Change Adaptation (CCA), and Education in Emergencies (EiE); and strengthened the resilience of basic education in the context of natural and human-induced hazards (DRRMS, 2018).

Education remains to be a powerful sector in promoting disaster preparedness especially for the households. Disaster preparedness is under the second major program of the DRRMS which complements the three pillars of the global comprehensive school safety framework (DRRMS, 2018). Disaster education has been a tool in providing knowledge among individuals and groups to take actions to reduce their vulnerability to disasters (Torani, et al., 2018).

The United Nations International Strategy for Disaster Reduction (UNISDR) mentioned and established the fact that effective DRR education in the basic education curriculum solidifies and strengthens the culture of awareness, preparedness, and resiliency among the students. Mamon (2021) found that high percentage of Grade 11 learners understood disaster-related concepts and ideas. Moreover, these learners are ready, prepared, adapted, and aware on the risks inflicted by disasters. However, they have low-disaster risk perception. The SDRRM, as the unit of education sector which aims to attain disaster-ready and resilient community, has now been challenged by the pandemic to take action to deliver disaster education into the households.

Disaster Preparedness of Households

Disaster preparedness is now being transferred into households as they are at the forefront of effects of disasters and are also the first to suffer from its impacts (Bagarinao, 2016). According to Brunie (2007 as cited by Bagarinao, 2016), preparing the households will help to save more lives and lessen the losses from natural disasters. Household preparedness is needed for resilience-building and disaster risk reduction (Wang, et al. 2021). Hence, it is important to prepare household members to attain a resilient and sustainable community.

On the study of Bolletino, et al. (2020), Filipinos take greater disaster preparedness if they perceive these disasters will directly impact them. Donahue (2014) emphasized that citizens share responsibility for their own protection by taking protective actions and avoiding the harms that may befall them.

The Philippines through RA 10121 had strengthened funding in mitigating the impact of calamities with disaster preparedness as its core. The DepEd enjoins NDRRMC in educating learners about disaster preparedness. However, learners alone aren't enough to be educated, they must also be able to relay it to their household members. Research have shown that it is the household that needs preparedness as they are in the vanguard of disaster. This paper aims to identify the disaster preparedness of the households catered by the SDRRM-CNHS.

Methods

Research Design

This study utilized quantitative descriptive research design in dealing with the issue. This design was deemed to be the most appropriate in this study as it provides a more valid and reliable data. According to Mertler (2014), this design is used to provide clearer description and interpretation of the status of relevant individuals, settings, conditions, or event using quantitative data. This method enabled the researcher to describe and measure the disaster preparedness of the household-respondents.

Study Subjects

The respondents of the study were the 151 households catered by the SDRRM-CNHS. The samples were taken through convenience sampling due to the onset of the COVID-19 and the inability to conduct face-to-face administration of the questionnaires. In addition, numerous households catered by the SDRRM-CNHS cannot answer the online survey due to the absence of gadget or internet connection.

Ethical Consideration

Confidentiality of the respondents and their responses was primarily considered through informing the school head about the conduct of the study. Upon granting the permission, parents were informed about the study through a message sent on their specific Facebook messenger group chats. Attached was the link that has the options to agree or disagree to participate in the study.

Those who agreed will be directed on the first part of the survey while those who do not will just submit the blank and unanswered form. The author considered the confidentiality of the respondents who partook in the study by strictly following the Republic Act No. 10173 also known as the Data Privacy Act of 2012 in which no names, pictures, or signatures of the participants were mentioned within the conduct and presentation of this endeavor. All data gathered underwent anonymity upon processing by utilizing codes for each household-participants and all their responses.

Instrumentation

The study utilized a researcher-made questionnaire. The researcher utilized a two-part questionnaire as instrument for data gathering. The first part seeks the demographic profile of household-respondents. The second part involves the extent of the adoption of the families of various disaster preparedness plan. In constructing the questionnaire, various reading materials were consulted. These ideas are put into the questionnaire to come up with a questionnaire that is aligned with the objectives and are more contextualized. The questionnaire was validated by the experts on the field of Disaster Risk Reduction and Management. The questionnaires were administered through a google form. Responses were scored using the scale continuum that follows and corresponding verbal interpretations were used.

Table 1. *Interpretation of Results*

Option	Scale Range	Verbal Interpretation
4	3.26 – 4.00	Almost Always True / Very Great Extent / Always
3	2.51 – 3.25	Usually True / Great Extent / Often
2	1.76 – 2.50	Usually Not True / Least Extent / Sometimes
1	1.00 – 1.75	Almost Never True / Very Least Extent / Never

Data Gathering Procedure

Prior to the distribution of research instrument, researchers sought permission from the school head. Upon permission, the research instrument was translated into a Google form. The first part of the form asked for the consents of the respondents. Links were sent to the parents' and guardians' group chats. As other parents and guardians allowed their children to answer the questionnaire, it was assured they were given the consent to do so. This follows Republic Act No. 10173 also known as the Data Privacy Act of 2012. Three days were given to the respondents to answer the questionnaire and results were retrieved. Upon retrieval of the questionnaires, the results were tallied, statistically treated, interpreted, and analyzed. Finally, conclusions and recommendations were drawn based on the findings of the study.

Statistical Treatment of Data

The data gathered were sorted, tabulated, and summarized using tables. Statistical treatments applied were frequency, weighted mean, and chi-square.

Frequency was used to get the quantity of the respondents per demographic profile.

Weighted Mean was utilized to attain the average of the means of all the criteria.

Chi-square was used to determine the relationship between the demographic profile and the extent of adoption of disaster preparedness of the households.

Results and Discussion

Based on the gathered data, the following were the salient findings of the study.

Table 2 shows the profile of the respondents categorized into sex, age, work status, household size, length of residence, highest educational attainment, distributions of respondents per barangay, and household income. Females constitute 74% of the respondents. Sixty-one percent ages between 13-19 which complements the results of 60% learners with elementary graduate, 45%, as the highest educational attainment. When it comes to household size, 57% have four to six members in average which was an average size of the Filipino family according to the Philippine Statistics Authority (2016) and 78% of them are living in their current address for more than ten years. Twenty-four percent of the respondents came from Brgy. Bungahan which is the location of the school while others were distributed from all other areas being catered by it. It was seen that 36% of respondents has an income of below Php5000 which is below the poverty line and according to Jha, et al. (2018), are the ones greatly afflicted during disasters. Similar results were obtained by Bollettino, et al. (2018) that Filipino families have inadequate household income to buy basic.

Available devices, tools and equipment for disaster mitigation that are present in their households are presented on Table 3. Hundred individuals have cellphones capable of connecting to the internet as their primary means of communication, which was similarly found by Bollettino, et al. (2018). This study, Bolletino, et al. (2018) and See, at al. (2020) found that the source of information regarding disasters and emergencies was from television. On their first aid kits, the top three common contents were cotton, medicines, and elastic gauze while their LIGTAS bag contains flashlights, hygiene kit, and facemask and face shield. This lacks the common items that should be stored like foods and water (Onuna, et al., 2016). Commonly disaster-response tools were emergency light, whistle, and rope. This clearly proves that the households are prepared during disasters and emergencies.

Table 2. *Demographic Profile of the Respondents (n=151)*

	PROFILE	FREQUENCY	PERCENTAGE
Sex	Male	40	26
	Female	111	74
Age	13-19 yrs. old	92	61
	20-30 yrs. old	5	4
	31-40 yrs. old	29	19
	41-50 yrs. old	17	11
	51-65 yrs. old	8	5
Work Status	Student	90	60
	Employed	17	18
	Self-employed	10	7
	Unemployed	28	11
	Others	6	4
Household Size	1 to 3	24	16
	4 to 6	87	57
	7 to 9	24	16
	10 to 12	9	6
	13 and above	7	5
Length of Residence	Less than a year	1	1
	1 to 3 yrs	16	10
	4 to 6 yrs	9	6
	7 to 9 yrs	7	5
	10 yrs. and above	118	78
Highest Educational Attainment	Has no formal education but can read and write	4	3
	Has formal education but not completed	10	7
	Elementary graduate	68	45
	High School Graduate	19	13
	Junior High School Completer	28	18
	Senior High School Graduate	3	2
	College Graduate	14	9
	Others (Masteral, Vocational, Doctorate)	5	3
Distribution of Respondents per Barangay	Brgy. 4	2	1
	Brgy. 6	6	4
	Brgy. 7	15	10
	Brgy. 8	2	1
	Bungahan	36	24
	Dalipit East	11	7
	Dalipit West	5	3
	Dita	2	1
	Don Juan	2	1
	Emmanuael	25	17
	Ibabao	1	1
	Labac	2	1
	Pinagkaisahan	20	13
	San Isidro	22	15
Household Income	Php 0 to Php 5000	55	36
	Php 5001 to Php 10000	43	28

Php 10001 to Php 15000	19	13
Php 15001 to Php 20000	10	7
Php 20001 to Php 25000	8	5
Php 25001 to Php 30000	8	5
Php 30001 to Php 35000	4	3
Php 40001 and above	4	3

Table 3. *Available Devices, Tools and Equipment for Disaster Preparation*

	Devices	Frequency	Rank
Means of Communication Available at Home	Two-way radio	10	6
	Telephone	44	3
	Cellphone capable of Text Messaging	25	4
	Cellphone capable of Calls	13	5
	Cellphone capable of Text Messaging and Calls	66	2
	Cellphone capable of Connecting to the Internet	100	1
Sources of Information about Disaster/ Emergency	TV	130	1
	Radio	44	4
	Persons-in -authority	27	5.5
	Social Media - Facebook	103	2.5
	Social Media - Instagram	27	5.5
	Social Media - Twitter	21	7
	Social Media - Facebook Messenger	103	2.5
Contents of Household First Aid Kit	Antiseptics	59	5
	Cotton	133	1
	Sterilized Gauze	56	6
	Elastic Bandage	75	3
	Roll of Gauze	49	8
	Triangular Bandage	34	11
	Medicines (for cough, cold, diarrhea, etc.)	132	2
	Surgical Scissors	37	10
	Tweezers	44	9
	Surgical Gloves	53	7
	Cold and Hot Compress	67	4
Contents of the Go Bag/ LIGTAS	3-day Food Supply	117	4
	3-day Supply Clean Potable Water	103	6
	Sealed Important Documents	102	7
	Flashlight	130	1
	Money	111	5
	Matchsticks / Lighter	93	11
	Whistle	101	8.5
	Battery-operated Radio	71	13
	Extra Cellphone with Charger, Powerbank & Sim Card	99	10
	Hygiene Kit (Toothbrush, Toothpaste, Soap, Shampoo, etc.)	119	2
	Face Mask & Face Shield	118	3
	3-day Clothes	101	8.5
	Sleeping Bags	87	12
	Rope	58	15
	Old Newspaper	40	16
	Equipment/Tools for Kids, Elderly & PWD	63	14
Disaster-	Stretcher	49	6

response Tools Available at Home	Wheelchair	41	7
	Fire Extinguisher	51	5
	Hard Hats	31	10
	Emergency Light / Flashlight	116	1
	Battery-operated Radio	64	4
	Two-way Radio Set	39	8
	Megaphone	38	9
	Buzzer	30	11
	Gong	20	13
	Circuit Breaker	29	12
	Rope	67	3
	Whistle & Small Flashlight per individual	93	2

The likelihood of adoption of disaster preparedness practices in their households amidst pandemic is reflected on Table 4. With a weighted mean of 3.48, the respondents are almost always true to their awareness on emergency and disaster responses. Similarly, they are almost always true on capacity building when it comes to drills, projects, and programs with 3.36 and 3.69 weighted means, respectively. The households also show their ability to identify risk and plan for it with 3.51 weighted mean and interpreted as almost always true. In addition, they have contingency plans to attain continuity of essential services, partnerships with government or private individuals and are endowed with information, education, and communication (EIC) activities with all these areas having weighted means of 3.60, 3.52 and 3.52, respectively and interpreted as almost always true. In these areas, the households show that they adopted disaster preparedness practices in an almost always true manner even amidst the pandemic.

Table 4 also shows the utilization of evacuation plans. In average, 137 households have evacuation plans for various disasters and emergencies. They also indicated that always practice it through drills with 3.53 weighted mean.

Table 4. *Likelihood of Adoption of Disaster Preparedness Practices in their Households amidst Public Health Emergency*

Areas of disaster preparedness	Weighted Mean	Verbal Interpretation
Awareness of Emergency and Disaster Response	3.48	Almost Always True
Capacity Building on Drills	3.36	Almost Always True
Capacity Building on Projects and Programs	3.69	Almost Always True
Home's Risk Assessment and Plans	3.51	Almost Always True
Continuity of Essential Services	3.60	Almost Always True
Partnership with Government or Private Individuals	3.52	Almost Always True
Information, Education and Communication (IEC)	3.52	Almost Always True
DRRM Localization on Evacuation Plans of the Households: Discusses the evacuation plans	3.53	Always
DRRM Localization on Evacuation Plans of the Households: Evacuation plans for various disasters	137	Yes

It can be gleaned from Table 5 the relationships between the demographic profile of the household-respondents and their likelihood of adoption of disaster preparedness practices. Household size ($0.00 < p - value < 0.01$), type of

residency ($0.00 < p - value < 0.03$), address ($p - value = 0.00$), educational attainment ($0.00 < p - value < 0.01$), and sources of information ($0.00 < p - value < 0.01$) have significant relationship with all the disaster preparedness practices which implies that these areas matter. Similar results were found by Cha, et al. (2019) and See, et al. (2020) that educational attainment significantly relates with disaster preparedness. Meanwhile, age ($p - value = 0.06$), means of communication ($p - value = 0.31$), and materials and equipment for disaster occurrences ($p - value = 0.07$) have no significant relationship with DRRM localization on evacuation plans and capacity buildings on projects and programs but were significant on eight disaster preparedness practices. Work status ($p - value = 0.42$) was similarly significant on eight disaster preparedness practices except capacity building on projects and programs. Length of residency ($0.12 < p - value < 0.24$) and household income ($0.44 < p - value < 0.63$) have no significant relationship DRRM localization of evacuation plans and capacity building projects and programs except the seven disaster preparedness practices. Sex ($0.07 < p - value < 0.18$) has no significant relationship with DRRM localization, capacity buildings, and partnerships or linkages but were found to have significant relationship with the other areas. These results are contrasting with the study of Bolletino, et al. (2018), Chen, et al. (2019) and See, et al. (2020) that only ten to 50% of the households were well-prepared for emergencies but has emergency plans.

Table 5. *Relationship between the Demographic Profile of Respondents and their Likelihood of Adoption of Disaster Preparedness Practices in their Households*

Disaster Preparedness Practices	Sex				Age				Work Status				Household Size				Length of Residency				Type of Residence				Address				Educational Attainment				Means of Communication				Sources of Information				Household Income				Materials and Equipment for Disaster Occurrences			
	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.	X^2	df	$p-value$	Sig.
A. Awareness of Emergency and Disaster Response	19.5	3	0.00	S	60.7	3	0.00	S	35.5	3	0.00	S	53.7	3	0.00	S	119	3	0.00	S	29.0	3	0.00	S	142	13	0.00	S	110	3	0.00	S	113	15	0.00	S	130	18	0.00	S	98.3	3	0.00	S	121	12	0.00	S
B.1. DRRM Localization on Evacuation Plans of the Households	1.80	1	0.18	NS	17.7	1	0.06	NS	11.1	1	0.02	S	23.4	1	0.00	S	5.45	1	0.024	NS	20.8	1	0.00	S	500	1	0.00	S	19.0	1	0.01	S	5.91	5	0.31	NS	16.7	6	0.01	S	5.29	1	0.63	NS	8.41	4	0.07	NS
B.2. DRRM Localization on Discussionof Evacuation Plans of the Households	7.07	3	0.07	NS	36.2	3	0.00	S	77.0	3	0.00	S	26.4	3	0.01	S	62.1	3	0.00	S	55.7	3	0.00	S	180	13	0.00	S	65.3	3	0.00	S	51.9	15	0.00	S	47.1	18	0.00	S	57.0	3	0.00	S	84.5	12	0.00	S
C.1. Capacity Building on Drills	6.66	3	0.08	NS	219	3	0.00	S	108	3	0.00	S	69.8	3	0.00	S	69.3	3	0.00	S	41.2	3	0.00	S	196	13	0.00	S	72.7	3	0.00	S	71.3	15	0.00	S	116	18	0.00	S	77.0	3	0.00	S	85.5	12	0.00	S
C.2. Capacity Building on Projects and Programs	10.2	3	0.02	S	63.8	3	0.00	S	12.4	3	0.42	NS	50.8	3	0.00	S	17.9	3	0.012	NS	34.6	3	0.00	S	128	13	0.00	S	23.8	3	0.00	S	62.3	15	0.00	S	48.3	18	0.00	S	21.2	3	0.44	NS	46.3	12	0.00	S
D. Home's Risk Assessment and Plans	17.9	3	0.00	S	109	3	0.00	S	53.7	3	0.00	S	52.2	3	0.00	S	39.5	3	0.00	S	30.0	3	0.00	S	125	13	0.00	S	38.4	3	0.00	S	92.9	15	0.00	S	67.1	18	0.00	S	77.5	3	0.00	S	131	12	0.00	S
E. Continuity of Essential Services	9.67	3	0.02	S	63.7	3	0.00	S	23.8	3	0.02	S	52.6	3	0.00	S	40.6	3	0.00	S	32.7	3	0.00	S	168	13	0.00	S	120	3	0.00	S	82.2	15	0.00	S	47.2	18	0.00	S	46.1	3	0.00	S	40.5	12	0.00	S
F. Partnership with Government or Private Individuals	5.48	3	0.14	NS	49.5	3	0.00	S	40.5	3	0.00	S	71.7	3	0.00	S	74.2	3	0.00	S	18.6	3	0.03	S	146	13	0.00	S	87.6	3	0.00	S	134	15	0.00	S	80.5	18	0.00	S	73.0	3	0.00	S	44.7	12	0.00	S
G. Information, Education and Communication (IEC)	11.0	3	0.01	S	30.5	3	0.01	S	34.0	3	0.00	S	25.5	3	0.01	S	84.7	3	0.00	S	64.9	3	0.00	S	195	13	0.00	S	54.7	3	0.00	S	39.3	15	0.00	S	58.0	18	0.00	S	70.3	3	0.00	S	123	12	0.00	S

Legend: S – Significant
NS – Not Significant

With these findings, the researchers crafted an action plan entitled Project HOPE (Household Preparedness for Emergencies) that will be carried out by the SDRRM-CNHS to attain disaster-ready and resilient community.

Conclusion

The household respondents were dominantly females between 13-19 years old and has completed elementary. Four to six members was the average household size with below Php5000 monthly income. The respondents are living in their current address for more than ten years. Brgy. Bungahan constitute the greatest number of respondents

Disaster-related devices, tools and equipment present in their households were cellphones capable of connecting to the internet as primary means of communication, television as source of information regarding disasters and emergencies, first aid kits containing cotton, medicines, and elastic gauze, LIGTAS bag filled with flashlights, hygiene kit, and facemask and face shield and their disaster-response tools were emergency light, whistle, and rope.

Adoption of disaster preparedness practices in their households amidst pandemic was said to be almost always true in all areas of disaster preparedness. They also have evacuation plans for various disasters and emergencies and practice it always.

On relationships between the demographic profile of the household-respondents and their adoption of disaster preparedness practices, household size, type of residency, address, educational attainment, and sources of information have significant relationship with all the disaster preparedness practices. Meanwhile, age, means of communication, and materials and equipment for disaster occurrences have no significant relationship with DRRM localization on evacuation plans and capacity buildings on projects and programs but were significant on eight disaster preparedness practices. Work status was similarly significant on eight disaster preparedness practices except capacity building on projects and programs. Length of residency and household income have no significant relationship DRRM localization of evacuation plans and capacity building projects and programs except the seven disaster preparedness practices. Sex has no significant relationship with DRRM localization, capacity buildings, and partnerships or linkages but were found to have significant relationship with the other areas. These results showed that demographic profiles matter upon adopting disaster practices.

This study covered 151 households that are catered by the SDRRM-CNHS. Respondents were assumed to be olderr than 12 years old and only one member of the household can answer the survey. The number of respondents were taken through convenience sampling and only those who have access to the internet were able to complete the survey since physical conduct of data gathering was limited due to the onset of the Delta Variant. The study's limitation is in terms of the household-respondent's responses during the conduct of the study and that may have changed overtime. This may then affect the validity of the responses.

This study is deemed helpful in policymaking and proposing programs and projects related to households' disaster preparedness practices.

With these results, the following are recommended: (1) expand the locale of the study, (3) utilize a mixed method research design, and (3) put into action the Project HOPE (HOusehold Preparedness for Emergencies) which lists all the activities that the households can do to fully adopt disaster preparedness practices.

References

Abanador, J. et al. (2020). *Family disaster preparedness: Basis for resiliency and awareness program*. Unpublished Thesis.

Bagarinao, R. (2016). *Households' natural disaster preparedness: A view from a second-class municipality in a developing country*. https://doi.org/10.14456/ea.2016.20

Behlert, B., Diekjobst, R., Felgentreff, C., Manandhar, T., Mucke, P., Hilft, B., Pries, L., Radtke, K., and Weller, D. (2020). *World Risk Report 2020: Focus: Forced Displacement and Migration*. https://reliefweb.int/report/world/worldriskreport-2020-focus-forced-displacement-and- migration

Bollettino, V., Alcayna, T., Enriquez, K., and Vinck, P. (2018). *Perceptions of disaster resilience and preparedness in the Philippines*. Harvard Humanitarian Initiative.

Bollettino, V., Stevens, T., Sharma, M., Dy, P., Pham, P., & Vinck, P. (2020). *Public perception of climate change and disaster preparedness: Evidence from the Philippines*. Elsevier. https://doi.org/10. 1016/j.crm. 2020.100250

Chen, C., Xu, W., Dai, Y., Xu, W., Liu, C., Wu, Q., Gao, L., Kang, Z., Hao, Y., and Ning, N. (2019). *Household preparedness for emergency events: A cross sectional survey on residents in four regions of China*. BMJ Open. https://doi.org/10.1136/bmjopen-2019-032462

Congress of the Philippines. (2010). *An act strengthening the philippine disaster risk reduction and management system, providing for the national disaster risk reduction and management framework and institutionalizing the national disaster risk reduction and management plan, appropriating funds therefor and for other purposes*. https://www.officialgazette.gov.ph/2010/05/27/republic-act-no-10121/

Cuenca Rural Health Unit. (2021). *COVID-19 update as of August 10, 2021, 3PM*. https://web.facebook.com/rhucuenca/photos/pcb.2684406255191883/2684405708525271

Department of Budget Coordination Committee. (DBCC). (2021). *Fiscal risks statement 2021*. http://www.dbm.gov.ph/wp-content/uploads/DBCC_MATTERS/FiscalRisk Statement/Fiscal-Risks-Statement-2021-for-Circulation.pdf

Department of Science and Technology – Philippine Institute of Volcanology and Seismology. (2020). *Summary of barangays prone to taal*

ballistic projectile. https://www.phivolcs.dost.gov.ph/vault/BarangaysAtRisk_Taal_Ballistic Projectile_ver2. pdf?fbclid=IwAR06oq_Y99VUpyL4dRJ8T9E4FUjDtwx2kIj9PWVIwc7oog63 x1ubyTa G2MM

Department of Science and Technology – Philippine Institute of Volcanology and Seismology. (2020). *Summary of barangays prone to taal base surge*. https://www.phivolcs.dost.gov.ph/vault/pdf/News/2020/BarangaysAtRi sk_Taal_BaseSur ge-Buffer.pdf

Department of Science and Technology – Philippine Institute of Volcanology and Seismology. (2020). *Summary of barangays prone to taal volcanic tsunami*. https://www.phivolcs.dost.gov.ph/index.php/news/9632-summary-of-barangays- susceptible-to-taal-volcano-volcanic-tsunami

Disaster Risk Reduction and Management Service. (2018). *Strengthening resilience in basic education*. https://www.deped.gov.ph/wp-content/uploads/2020/11/09 _TLM_DRRMS- Brochure_20190830.pdf

Donahue, A., Eckel, C., and Wilson, R. (2014). *Ready or not? How citizens and public officials perceive risk and preparedness*. American Review of Public Administration. 44(4), 89–111.

Eckstein, D., Künzel, V., Schafer, L., and Winge. M. (2020). *Global climate risk index 2020*. https://germanwatch.org/en/17307

Heintze, H., Kirch, L., Küppers, B., Mann, H., Mischo, F., Mucke, P., Pazdzierny, T., Prütz, R., Radtke, K., Strube, F., & Weller, D. (2018). *World risk report 2018*. https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskRepor t-2018.pdf

Jha, S., Martinez, A., Quising, P., Ardaniel, Z., and Wang, L. (2018) *Natural disasters, public spending, and creative destruction: A case study of the Philippines*. Asian Development Bank Institute (ADBI) Working Paper. https://www.adb. org/publications /natural-disasters-public-spending-and-creative-destructionphilippines

Mertler, C. (2016). *Introduction to educational research*. Sage Publications.

National Disaster Risk Reduction and Management Council. (2013). *Y it happened: Learning from typhoon yolanda*. https://ndrrmc.gov.ph/attachments/article/2926/Y_It_Happened.pdf

National Disaster Risk Reduction and Management Council. (2020). *Situational report no. 43 re taal volcano eruption*. https://reliefweb.int/report/philippines/ndrrmc-update-situational-report-no-43-re-taal-volcano-eruption-26-january-2020

Onuna, H., Shin, K., and Shunsuke, M. (2016). *Household preparedness for natural disasters:Impact of disaster experience and implications for future disaster risks in Japan*. Munic Personal RePEc Archive. https://mpra.ub.uni-muenchen.de/77634/

Philippine Statistics Authority. (2016). *Highlights on household population, number of households, and average household size of the philippines (2015 census of population).* https://psa.gov.ph/content/highlights-household-population-number-households-and- average-household-size-philippines

See, J., Rivera, L., Santos, I., Santos, K., Santos, M., Sarmiento, N., Sese, R., Sie, S., Urbano, B., Nailes, J., Quebral, J. (2020). *A comparison of the levels of earthquake awareness and preparedness in a high risk and low risk barangay*. UERM Health Sciences Journal, 9(2).

Torani, S., Majd, P., Maroufi, S., Dowlati, M., & Sheikhi, R. (2018). *The importance of education on disasters and emergencies: A review article.* https://www.jehp.net/temp/JEduHealthPromot8185-5589131_153131.pdf

United Nations Office for Disaster Risk Reduction. (2017). *Terminology*. https://www.unisdr.org/we/inform/terminology

Wang, Z.; Han, Z.; Liu, L.; and Yu, S. (2021). *Place attachment and household disaster preparedness: Examining the mediation role of self-efficacy*. Int. J. Environ. Res. Public Health. https://doi.org/10.3390/ijerph18115565