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Communicating Disaster Risk Reduction Management (DRRM) Information Before And During Covid-19 Pandemic Of The Local Government Units In The Philippines

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Abstract

This study aims to determine how the municipality of Sto. Domingo and Nueva Ecija communicate DRRM practices to their constituents using a quantitative research design and purposive sampling in selecting the 474 respondents. Data were collected using key informant interview and online survey questionnaire. Most of the respondents were Roman Catholic, Single, had a household size of 5, had below Php 100,000.00 in annual income, employed, and are high school graduates. Their preferred source of DRRM information is social media and TV, while newspapers yielded the least number of respondents. The respondents scored highly on DRRM awareness and attitude .

There was a significant negative correlation between employment status,civil status and DRRM awareness and the attitude of the respondents towards DRRM practices. Media Usage Preferences have a significant positive correlation with Fire, Earthquake, Typhoon, Flood, and General DRRM Awareness.

There is a significant correlation between TV usage, radio, social media, newspaper, and municipality communicated information and COVID-19-related awareness and the attitude of the respondents towards DRRM practices. A negatively correlated was found between DRRM on Flood, social media, and DRRM on Flood awareness and the attitude of the respondents.Earthquakes and social media are negatively correlated to both DRRM awareness and the attitude of the respondents. Lastly, TV and Social media are significantly negatively correlated to awareness of DRRM on Fire. Social media is also significantly negatively correlated with the attitude of the respondents towards DRRM on Fire.

Keywords: communicating, disaster risk reduction management, information , covid-19 pandemic ,local government units

Introduction

Previous studies (ADPC/UNDRR, 2019; Doroteo, 2015) have reported that the Philippines is one of the most hazard-prone areas in the world, especially in natural disasters. Being situated near the Typhoon

Belt and Pacific Ring of Fire, the country is vulnerable to a large number of natural calamities. These natural disasters commonly occur from October to December, the 4th quarter of the year (Maminta, 2019). The Philippine Risk Profile for Natural Disasters was also exemplified in the 2011 Global Assessment Report, as the Philippines had a 27.98 percent risk percentage and placed 3rd out of 173 countries in terms of exposure to natural hazards.

On average, there are about 20 tropical storms that enter Philippine territory annually, with nine storms managing to make landfall (ESCAP/WMO, 2009). These typhoons are one of the leading landslides, storm surges, and floods, causing enormous losses of life and property (Huigen & Jens, 2006). Previous studies of risk vulnerability state that the most vulnerable regions to typhoons are Southern Tagalog, Cagayan Valley, Central Luzon, the Cordillera Administrative Region, the National Capital Region, and the Bicol Province (Cruz, et. al., 2017). Aside from Luzon, Visayas and Mindanao are becoming more at risk due to the increase in the number of typhoons entering the southern areas of the country.

Aside from typhoons, the rapid conversion of agricultural lands into residential areas has resulted in the loss of natural ecosystems and destruction of topsoil, significantly reducing the ground's capacity to absorb water (OCD-NDRRMC, 2015) and the vulnerability of lands to landslides.

Increasing calamity preparedness in areas vulnerable to natural disasters is important in reducing their risks of disasters. Identifying vulnerable areas and demographics is vital in minimizing the risks disasters and calamities can pose to society. Aside from this, it can aid in mapping the local capacity for handling these hazards and ensuring that there will be no harm done when local government units perform emergency responses and address these critical vulnerabilities. Increasing calamity preparedness and proper handling of hazards can be done through proper disaster risk communication.

In 2020, Typhoon Ulysses caused staggering damage to crops in Nueva Ecija: 131.87 million pesos worth of rice crops and 557,420 pesos worth of fruits and vegetables were destroyed by the said typhoon. One of the municipalities that were significantly affected is Sto. Domingo, with an estimated loss of 31,000 peso loss on onion crops (Galang, 2020). The impact on local businesses and products may prove to exhibit various economic constraints from an individual to a community-wide level.

Considering the vulnerability to natural disasters of the municipality of Sto Domingo, disaster risk reduction management plays a crucial role in reducing the possible impacts of disasters. Disaster Risk Reduction Management involves proper risk communication. Risk communication is a vital tool in spreading information and knowledge regarding disaster and risk (OECD, 2002). Effective communication strategies about risk management and reduction help experts develop and share relevant data. Aside from this, professional users will manage to understand data and then finally influence how laymen take action in reducing risk every day. Having proper systems in place will greatly aid response and lessen casualties, allowing individuals to better prepare themselves against disaster and lessen risk. In addition, proper disaster risk reduction management information is useful in explaining the impact of specific disasters, dealing with uncertainty and fear, preparing

individuals for hypothetical long-term effects of a specific disaster, improving the population's understanding of the risk, creating a space where the population's uncertainties may be aired out and addressed, and even improving the location's credibility and transparency in regards to the individuals implementing risk management (OECD, 2002). Additionally, leading disaster risk reduction organizations indicate the importance of being able to assess and recognize a location's disaster preparedness to effectively reduce disaster risk and strengthen risk assessment and communication (Gubalane, Zoren. 2015).

However, disaster risk reduction management can only be delivered properly if the communication strategies regarding the former are effective. The previous paragraphs have stressed the importance of proper disaster risk reduction management, however the way these policies are communicated to the public influences the reception and action against a specific disaster or risk. Effective communication strategies are vital tools in disaster and risk management (Marlow & Wilson, 1997). Organizations and various government units experience information meltdowns during a disaster which then promotes the dilemma of which information is vital to be shared with the public, and how to streamline said information for the ease of understanding for the common layman (Skinner & Rampersad, 2014).

In the context of communication strategies for disaster risk reduction management, one must remember that context plays a key role: sociocultural, psychological, and demographics should be taken into consideration when planning for the dissemination of information (Skinner & Rampersad, 2014). The challenge is for organizations and various government units to respond with complete, understandable, and accurate information and to disseminate them quickly as possible during a disaster, but also in a proactive way that makes the members of the community come together to help reduce the potential risk of a disaster (Nyondo, 2006).

As of 2020, Sto. Domingo, Nueva Ecija's MDRRMO became more active in their Facebook page, Mdrrmo-Sto Domingo Nueva Ecija to communicate disaster risk reduction practices to their residents. While there is the option of relying on social media, according to previous literature (Bensaid et. al, 2019; Schryen, 2016), there is still a lack of research in terms of the usability of social media as a proper tool for disaster risk reduction management, especially in developing countries such as the Philippines. Aside from this, an executive summary report for Sto. Domingo municipality (2019) states that the municipality had several deficiencies noted in the planning, utilization, and reporting requirements of 5% of the LDRRMF funds and was recommended to ensure implementation of DRRM projects and reprogramming of underutilized or unutilized projects to increase the disaster mitigation capability of Sto Domingo.

The pandemic has posed several challenges in the performance of duties of local government executives. Even with the pandemic, several typhoons hit the province of Nueva Ecija, causing damage to crops and agricultural livelihoods of the people even in the municipality of Sto Domingo. Delivery of services of local officials particularly in times

of disaster and simultaneously with the COVID-19 pandemic is indeed challenging.

Their role in providing timely and relevant information to reduce the possible impacts of disasters and other risks such as COVID-19 is crucial.

Objectives of the Study

The general objective of this study was to determine how LGU- Sto. Domingo, Nueva Ecija communicates disaster risk reduction management information to its constituents during the COVID-19 pandemic.

Specifically, this study aimed to:

1. Describe the respondents in terms of their sociodemographic and communication characteristics;

2. Determine the respondents' level of awareness of disaster risk reduction management practices;

3. Identify specific DRRM information that were shared during the COVID-19 pandemic;

4. Enumerate the communication strategies/interventions employed in disseminating information during the COVID-19 pandemic.

5. Determine the respondents' level of attitude towards disaster risk reduction management practices;

6. Examine possible relationships that exist among the variables socio-demographic and communication characteristics, level of awareness, and attitude on disaster risk reduction management practices.

Research Methodology

The researcher employed a quantitative survey research design and used random sampling in selecting the respondents. Data were collected using Key Informant Interview –and Online Survey Questionnaire .

Results and Discussion

Role of the Barangay Disaster Risk Reduction and Management (BDRRMC) and MDRRMC before Crises and Disasters Occur

The first question of the interview pertains to the role of the local DRRM organizations such as the BDRRMC and MDRRMC before an actual disaster or crisis starts. To contextualize the situation, the interviewee specified their roles before the lockdowns started:

The interview mentions that they must prepare the relevant materials and dissemination information to the barangays so that they would be ready. It is also worth mentioning that the specific information on DRRM practices that were used was the same as before the COVID-19 pandemic. It was mentioned that before the pandemic, the MDRRMO and BDRRMO relied on using posters pasted on spaces with higher foot traffic or in the city hall and barangay hall.

Role of the BDRRMC and MDRRMC during crises and disasters

The interviewer now asks what is the BDRRMC and MDRRMC's roles during crises and disasters, especially during the time of COVID-19.

It's interesting to note that due to the pandemic, the usual line of communication between the residents and the MDRRMC and BDRRMC now shifts to social media. As mentioned earlier, the MDRRMO and BDRRMO relied on posters to communicate DRRM information. Each barangay has a dedicated Facebook page which can make it easier to distribute DRRM materials. The interviewee also mentions that they think that social media is effective due to the activity of users there.

During the onset of disasters, they first plan things out in the municipality. Once there is a definite plan of action, they set a meeting with BDRRMC to cross-check what to do and enforce in the barangays for their safety.

Role of the BDRRMC and MDRRMC after the onset of crises and disasters

The interviewer asks what response des the BDRRMC and MDRRMC do after crises and disasters. The interviewee responds as follows:

After the onset of a disaster, the MDRRMC and BDRRMC now go to each barangay to check on the affected residents or maybe even individuals who need help due to the onslaught of disasters.

IEC Materials Being Distributed

With regards to IEC materials being distributed by the MDRRMO or BDRRMO, the interviewee mentions that before the COVID-19 pandemic, their main IEC material were posters with instructions on what to do during a specific crisis, such as earthquakes and fire, that were pasted on different areas of the municipality, especially in areas where residents will be able to see them. However, the pandemic, they have resulted in relying on social media to disseminate information.

In the context of COVID-19-related disasters, the municipality relies on social media and posters that are pasted on each barangay hall.

In the context of fires, the interviewee mentions that there is a lack of fires in the area. However, they still distribute posters. Before the pandemic, some demos and seminars about fire safety and awareness.

In the context of typhoons, the MDRRMO and BDRRMO distribute text messages and social media announcements regarding the preparation needed for the typhoon before, during, and after its onset.

In the context of floods, the interviewee also mentions that in their perception, floods are rare in the area. There were no mentioned IEC materials being distributed for this event aside from social media announcements.

In the context of earthquakes, some posters were pasted on the barangay halls that included information on what to do before, during, and after the onset of the earthquake. Aside from this, demonstrations, seminars, and symposiums were also done in schools to bring awareness.

Distribution of DRRMO Information to Barangay Meetings

The interviewee mentions that the MDRRMO and BDRRMO do disseminate

the relevant disaster information to barangay meetings, however, due to the pandemic, they

House to House Visits of MDRRMO and BDRMO to Disseminate Information

The interviewee mentions that they do not conduct house-to-house visits before the pandemic, instead they conduct barangay-wide meetings to disseminate information. However, now that there is a pandemic, they find themselves relying on social media. The interviewee also mentions that social media was a "big help".

Sociodemographic Factors

The study yielded 474 responses, as shown in the table below, which their respective frequencies in terms of gender. In total, there were 239 males and 235 females who answered the survey.

Table 1, describes the sociodemographic status of the respondents in terms of sex, religion, civil status, household size, annual income, employment status, and educational attainment.

In terms of religion, the sample yielded a majority of Roman Catholics with a percentage of 49.57.49.57% Roman Catholics. In terms of civil status, the majority of the respondents are single with 314 responses, which took up 66.25 percent of the sample. In terms of household size, most of the respondents are 5 in number, with 31.01 percent.

87.34 percent of respondents who answered this survey had an annual income of below 100,000.00 pesos, with 414 responses. Most of the individuals who answered this survey are employed, taking up 60.97 percent of the responses.

` In this study, 67.72 percent of the respondents have graduated from high school.

Table 1. Gender of Respondents.

Sociodemographic Characteristics	Frequency	Percentage
Sex		
Male	239	50.42
Females	235	49.57
Religion		
Roman Catholic	310	49.57
Aglipay	61	12.87
Born Again Christian	39	8.33
CDCC	37	7.81
INC	27	5.70
Civil Status		
Single	314	66.24
Married	152	32.07

Separated	1	0.21
Widow/Widowed	3	0.63
Cohabitating/Life In	4	0.84
Household size		
1	2	0.42
2	11	2.32
3	60	12.66
4	107	22.57
5	147	31.01
6	78	16.46
Greater than 6	69	14.56
Annual Income		
Below 100,000.00	414	87.34
101,000.00-150,000.00	32	6.75
151,000.00-200,000.00	16	3.38
201,000.00-250,000.00	10	2.11
500,000.00 and above	2	0.42
Employment Status		
Employed	289	60.97
Unemployed	185	39.03
Educational status		
No Formal Schooling	4	0.84
Elementary Graduate	1	0.21
High School Graduate	321	67.72
College Graduate	146	30.80
Graduate (MS/Ph.D.)	2	0.42
N	474	

Communication Media Use as sources of Information

The tables below show which media the respondents most frequently used regarding obtaining information on different disasters or DRRM practices. In terms of COVID-19 information, respondents most frequently use television ((44.30%) and social media (37.76%)The least used source of information is the newspaper (2.32%).

Table 2. COVID-19 sources of Information

Preference	N	Percentage
TV	210	44.30
Social Media	179	37.76
Local Government Officials	32	6.75
Radio	42	8.86
Newspaper	11	2.32
N	474	

Fire sources of Information

Most respondents rely on social media to source information regarding fires (40.93%). The next most-used source of information is TV (36.07%), while the least used is a newspaper (2.32%).

Table 3. Fire sources of Information

Preference	N	Percentage
TV	171	36.07
Social Media	194	40.93
Local Government Officials	50	10.55
Radio	48	10.13
Newspaper	11	2.32
N	474	

Earthquake Sources of Information

In terms of earthquake DRRM information, respondents most frequently find this information from social media (57.17%). Again, the least used media as a source of information would be newspapers (1.90%).

Table 4. Earthquake Sources of Information

Preference	N	Percentage
TV	166	35.02
Social Media	271	57.17
Local Government Officials	12	2.53
Radio	16	3.38
Newspaper	9	1.90
N	474	

Typhoon Sources of Information

For typhoon-related DRRM information, respondents tend to use both social media

(36.50%) and the radio (36.50%) as their primary source. The least used source of information is the newspaper (1.27%)

Table 5. Typhoon Sources of Information

Preference	N	Percentage
TV	91	19.20
Social Media	173	36.50
Local Government Officials	31	6.54
Radio	173	35.50
Newspaper	6	1.27
N	474	

Flood Sources of Information

Lastly, in terms of floods, respondents relied on TV (44.51) for DRRM-related information. Again, the newspaper (1.48) is the least used source of information.

Table 6. Flood Sources of Information

Preference	N	Percentage
TV	211	44.51
Social Media	184	38.82
Local Government Officials	30	6.33
Radio	42	8.86
Newspaper	7	1.48
N	474	

The extent of Media Use

The tables below show the extent of media usage per respondent, the respondents chose which source of media they spend the most time on to gather information regarding disasters or DRRM.

TV Extent of Usage

With regards to TV, respondents mostly spend 1 hour or less on that media platform in terms of gathering DRRM information.

Table 7. TV extent of usage

DRRM	8 hours or more	5-7 hours	2-4 hours	1 hour or less	Not being used
COVID-19	39	50	144	220	21
Fire	28	16	97	260	73
Flood	28	15	57	221	64
Typhoon	36	30	105	276	27
Earthquake	28	15	90	296	45
N	474				

Radio extent of usage

Most respondents do not use the radio in gathering DRRM information. Indicating that radio is no longer the number one source of information for DRRMM.

Table 8. Radio extent of usage

DRRM	8 hours or more	5-7 hours	2-4 hours	1 hour or less	Not being used
COVID-19	7	11	22	192	242
Fire	11	5	27	156	275
Flood	9	7	29	156	273
Typhoon	9	12	27	168	258
Earthquake	11	8	20	165	270
N	474				

Social Media extent of usage

Most respondents found themselves using social media for 1 hour or less in gathering DRRM information.

Table 9. Social Media extent of usage

DRRM	8 hours or more	5-7 hours	2-4 hours	1 hour or less	Not being used
COVID-19	60	37	162	201	14
Fire	47	18	94	279	36
Flood	51	28	99	263	33
Typhoon	54	27	119	257	17
Earthquake	47	26	70	282	29
N					

Newspaper extent of usage

In regards to reading the newspaper, most respondents do not use this media platform to check DRRM information.

Table 10. Newspaper extent of usage

DRRM	8 hours or more	5-7 hours	2-4 hours	1 hour or less	Not being used
COVID-19	6	5	18	118	327
Fire	7	5	19	109	334
Flood	6	3	22	96	347
Typhoon	6	6	18	96	348
Earthquake	8	4	15	99	348
N	474				

Municipality communicated information extent of usage

Lastly, most respondents use municipality-communicated information for 1 hour or less in COVID-19-related DRRM information, while the majority of the respondents do not use municipality-communicated information for fire, flood, typhoon, and earthquake-related DRRM information.

Table 11. Municipality communicated information extent of usage

DRRM	8 hours or more	5-7 hours	2-4 hours	1 hour or less	Not being used
COVID-19	9	14	39	211	201
Fire	8	11	33	202	220
Flood	5	12	30	142	285
Typhoon	7	13	32	176	246
Earthquake	10	9	26	210	219
N	474				

Preference in Media Usage

In terms of preference of media, the respondents were asked which sources of information they prefer in obtaining information about COVID-19 and other disasters. The majority of the respondents preferred using TV (42.19%) as their major source of information, along with Social Media (40.93%) as a close second, and again, the least preferred media is a newspaper (2.32%).

Based on the table below, TV and social media is the most preferred source of DRRM information both in terms of frequency, preference, and extent of use. This

should be noted, as it was mentioned earlier in the key informant interview, that the main method of communicating DRRM information in Sto. Domingo is currently on social media.

Table 12. Preference in Media Usage

Preference	N	Percentage
TV	200	42.19
Social Media	194	40.93
Local Government Officials	43	9.07
Radio	26	5.49
Newspaper	11	2.32
N	474	

Level of Awareness and Attitude on Disaster Risk Reduction Management Practices

The respondents answered various questions from different categories that cater to their awareness regarding DRRM practices. These categories are COVID-19, Fire, Earthquake, Typhoon, and Flood. Their responses were recorded using a 5-point Likert Scale; the researchers took the mean score per category and their total mean scores. The respondent's mean scores range from 4.8 to 4.9, presenting that these respondents have good awareness in terms of DRRM practices.

Specifically, the average score for their DRRM awareness for COVID-19 is 4.9, DRRM awareness on Fire is 4.8, DRRM awareness on Earthquake is 4.8, DRRM awareness on Typhoon is 4.9, and DRRM awareness on Flood is 4.8. The respondent's general awareness of DRRM is 4.8, which again supports the idea that these respondents can be considered aware in regards to their local DRRM practices.

Table 13. Awareness in DRRM Practices.

DRRM Practices	Mean	Qualitative Interpretation
COVID-19	4.9	Extremely Aware
Wearing face shields and face masks	4.9	Extremely Aware
Correct hygiene (washing of hands, sanitizing)	4.9	Extremely Aware
Social distancing	4.8	Extremely Aware
Avoiding going outside if unnecessary	4.8	Extremely Aware
Isolating themselves when they feel symptoms of COVID-19	4.9	Extremely Aware
Fire	4.8	Extremely Aware
Regular checking of electrical wires	4.6	Extremely Aware

Watching the usage of gas and LPG when cooking	4.8	Extremely Aware
Keeping matches or lighters away from children	4.8	Extremely Aware
Avoiding leaving out lit cigarettes or candles	4.9	Extremely Aware
Inspecting the LPG tank to see if there is any structural leakage that could result in a gas leak or fire	4.9	Extremely Aware
Earthquake	4.8	Extremely Aware
Checking if the house is near a faultline	4.5	Extremely Aware
Checking the safe places inside the house, school, or office	4.8	Extremely Aware
If there is an earthquake the person should "Drop, cover, and hold"	4.9	Extremely Aware
Remain inside the house until the earthquake stops and it is safe to go out of the house	4.9	Extremely Aware
If out of the house, find a place far from buildings, trees, or electrical wires	4.9	Extremely Aware
Be alert to any aftershocks	4.9	Extremely Aware
Typhoon	4.8	Extremely Aware
Covering any holes in the roof and tie the roof down so it will not get carried by the wind	4.9	Extremely Aware
Cut down any tree branches that may fall down	4.8	Extremely Aware
Have flashlights, radios, and batteries ready	4.9	Extremely Aware
Have ready stocks of water, food, and first aid supplies	4.9	Extremely Aware
Turn off the electricity, water, and gas in case of floods	4.8	Extremely Aware
Warning signals 1-5	4.7	Extremely Aware
Flood	4.8	Extremely Aware
Having a Go-bag ready	4.8	Extremely Aware
Knowing the local topography and where flood water can come from	4.6	Extremely Aware

Being aware and conscious of the weather	4.8	Extremely Aware
Keeping important paraphernalia in higher spots in the house, away from the flood	4.9	Extremely Aware
Preparing sacks and/or plastic to cover windows and other household items	4.8	Extremely Aware

Legend:

Numerical Value	Description
1.0-1.9	Extremely Unaware
2.0-2.9	Unaware
3.0-3.9	Aware
4.0-5.0	Extremely Aware
N	474

In terms of attitude the respondents' towards DRRM Practices mean score is 4.9 across the general attitude and all categories of the questionnaire. This means that the respondents place importance on learning and being aware with regards to DRRM practices.

Attitude of the Respondents towards DRRM Practices.

Table 14. **Attitude of the Respondents towards DRRM Practices**

DRRM Practices	Mean	Qualitative Interpretation
COVID-19	4.9	Thinks that it is extremely important
Wearing face shields and face masks	4.9	Thinks that it is extremely important
Correct hygiene (washing of hands, sanitizing)	4.9	Thinks that it is extremely important
Social distancing	4.9	Thinks that it is extremely important
Avoiding going outside if unnecessary	4.9	Thinks that it is extremely important
Isolating themselves when they feel symptoms of COVID-19	4.9	Thinks that it is extremely important

Fire	4.9	Thinks that it is extremely important
Regular checking of electrical wires	4.8	Thinks that it is extremely important
Watching the usage of gas and LPG when cooking	4.9	Thinks that it is extremely important
Keeping matches or lighters away from children	4.9	Thinks that it is extremely important
Avoiding leaving out lit cigarettes or candles	4.9	Thinks that it is extremely important
Inspecting the LPG tank to see if there is any structural leakage that could result in a gas leak or fire	4.9	Thinks that it is extremely important
Earthquake	4.9	Thinks that it is extremely important
Checking if the house is near a faultline	4.8	Thinks that it is extremely important
Checking the safe places inside the house, school, or office	4.9	Thinks that it is extremely important
If there is an earthquake the person should “Drop, cover, and hold”	4.9	Thinks that it is extremely important
Remain inside the house until the earthquake stops and it is safe to go out of the house	4.9	Thinks that it is extremely important
If out of the house, find a place far from buildings, trees, or electrical wires	4.9	Thinks that it is extremely important
Be alert to any aftershocks	4.9	Thinks that it is extremely important

Typhoon	4.9	Thinks that it is extremely important
Covering any holes in the roof and tie the roof down so it will not get carried by the wind	4.9	Thinks that it is extremely important
Cut down any tree branches that may fall down	4.9	Thinks that it is extremely important
Have flashlights, radios, and batteries ready	4.9	Thinks that it is extremely important
Have ready stocks of water, food, and first aid supplies	4.9	Thinks that it is extremely important
Turn off the electricity, water, and gas in case of floods	4.8	Thinks that it is extremely important
Warning signals 1-5	4.7	Thinks that it is extremely important
Flood	4.9	Thinks that it is extremely important
Having a Go-bag ready	4.9	Thinks that it is extremely important
Knowing the local topography and where flood water can come from	4.9	Thinks that it is extremely important
Being aware and conscious of the weather	4.9	Thinks that it is extremely important
Keeping important paraphernalia in higher spots in the house, away from the flood	4.9	Thinks that it is extremely important
Preparing sacks and/or plastic to cover windows and other household items	4.9	Thinks that it is extremely important

Numerical Value	**Description**

1.0-1.9	Thinks its extremely unimportant	Legend :
2.0-2.9	Thinks that it's unimportant	
3.0-3.9	Thinks that it is important	
4.0-5.0	Thinks that it is extremely important	
N	474	

Correlation Between Sociodemographic Characteristics and Respondent's Level of Awareness

To achieve the objectives of the study, the researcher correlated sociodemographic factors and their respective media usage/communication characteristics to their level of awareness and attitude towards DRRM practices.

Findings revealed that there was a significant negative correlation between employment status and DRRM awareness. Employed individuals are more likely to be aware of DRRM practices. There was also a significant negative correlation between employment status and attitude towards DRRM practices , which can mean that if one is employed, they may find the DRRM important and relevant.

Lastly, there was a significant positive correlation between Civil Status and DRRM Attitude. This means that if one is married or cohabitating, they place more importance on DRRM.

Table 15. Relationship of Sociodemographic Characteristics and Respondent's Level of Awareness on DRRM practices

		DRRM Awareness	DRRM Attitude
Gender	Pearson Correlation	-.071	-.052
	Sig. (2-tailed)	.122	.256
	Sum of Squares and Cross-Products	-5.509	-2.768
	Covariance	-.012	-.006
	N	474	474
Religion	Pearson Correlation	-.022	.029
	Sig. (2-tailed)	.641	.524
	Sum of Squares and Cross-Products	-4.081	3.803
	Covariance	-.009	.008
	N	474	474
Civil Status	Pearson Correlation	.079	**.105***
	Sig. (2-tailed)	.086	.022
	Sum of Squares and Cross-Products	7.533	. 6.851
	Covariance	.016	.014
	N	474	474

Household Size	Pearson Correlation	.054	.017
	Sig. (2-tailed)	.240	.717
	Sum of Squares and Cross-Products	11.061	2.335
	Covariance	0.23	.005
	N	474	474
Annual Income	Pearson Correlation	.024	.013
	Sig. (2-tailed)	.597	.771
	Sum of Squares and Cross-Products	2.425	.914
	Covariance	.005	.002
	N	474	474
Educational Attainment	Pearson Correlation	.027	.001
	Sig. (2-tailed)	.559	.978
	Sum of Squares and Cross-Products	2.176	.069
	Covariance	.005	.000
	N	474	474
Employment Status	Pearson Correlation	**-.114***	**-.111***
	Sig. (2-tailed)	.013	.015
	Sum of Squares and Cross-Products	-8.588	-5.739
	Covariance	-.018	-.012
	N	-.018	474

Correlation between Media Usage Preference and Attitude towards DRRM Practices

In terms of Media Usage Preferences and DRRM attitude, there were no significant correlations between the variables. This means that Media Usage Preference does not have a significant relationship with the attitude of the respondents towards DRRM practices

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Table 16. Correlation between Media Usage Preference and Attitude towards DRRM Practices

	COVID	Fire	Earthquake	Typhoon	Flood	General DRRM Attitude

Media Usage Preference	Pearson Correlation	.036	.088	.077	.076	.071	.077
	Sig. (2-tailed)	.431	.056	.013	.096	.121	.093
	Sum of Squares and Cross-products	3.587	9.848	18.175	9.297	8.529	7.819
	Covariance	.008	.021	.035	.035	.018	.017
	N	474	474	474	474	474	474

Correlation between Media Usage Preference and DRRM Awareness

In terms of Media Usage Preferences and DRRM awareness, it appears that Media Usage Preferences have a significant positive correlation with Fire, Earthquake, Typhoon, Flood, and General DRRM Awareness. This means that their preferred source of information plays a part in DRRM awareness.

Table 17. Correlation between Media Usage Preference and DRRM Awareness

		COVID	**Fire**	**Earthquake**	**Typhoon**	**Flood**	**General DRRM Awareness**
Media Usage Preference	Pearson Correlation	.089	**.135****	**.114***	**.114***	**.132****	**.131****
	Sig. (2-tailed)	.053	.003	.013	.013	.004	.004
	Sum of Squares and Cross-products	13.828	23.790	18.175	16.656	25.623	19.451
	Covariance	.029	.050	.038	.035	.054	.041
	N	474	474	474	474	474	474

Correlation between Frequency Media Usage and COVID Awareness and Attitude of the Respondents Towards DRRM Practices

In the table below, figures indicated that there is a significant positive correlation between TV usage and COVID-19-related DRRM awareness (.114*) and attitude (.167**). This means that the more that a person spends time on television, the more aware they are regarding COVID-19 DRRM.

It's interesting to note that radio (-.152**), social media (-.130**), newspaper (-.094*), and municipality (-.114*) are significantly negatively correlated to DRRM awareness. This means the less time spent on these platforms, the higher the respondents' COVID-19 DRRM awareness is. Meanwhile, attitude of the respondents towards DRRM practices is significantly negatively correlated to the newspaper (-.143**), and municipality (-.152**), meaning that the less time spent on these platforms, the respondents think that it is extremely important

Table 18. Correlation between Frequency Media Usage and COVID Awareness and Attitude of the Respondents towards DRRM Practices

		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
COVID DRRM Awareness	Pearson Correlation	**.114***	**-.152****	**-.130****	**-.094***	**-.114***
	Sig. (2-tailed)	.013	<.001	.005	.040	.013
	Sum of Squares and Cross-products	18.767	-29.279	-21.505	-11.752	-17.745
	Covariance	.040	-.062	-.045	-.025	-.038
	N	474	474	474	474	474
		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
COVID DRRM Attitude	Pearson Correlation	**.167****	-.067	**-**.074	**-.143****	**-.152****
	Sig. (2-tailed)	<.001	.146	.107	.002	<.001

	Sum of Squares and Cross-products	18.686	-8.813	-8.391	-12.125	-16.050
	Covariance	.040	-.019	-.018	-.026	-.034
	N	474	474	474	474	474

Correlation between Frequency of Media Usage and Flood Awareness and Attitude of the Respondents towards DRRM Practices

With regards to Flood awareness and attitude of the respondents towards DRRM practices , social media is negatively correlated to Flood DRRM awareness (-.093*) and attitude (-.118**), which means that the lesser time they spend on social media, the less their awareness and think that that it is extremely important

Table 19. Correlation between Frequency Media Usage and Flood DRRM Awareness and Attitude of the Respondents

		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
Flood DRRM Awareness	Pearson Correlation	.008	-.009	**-.093***	-.011	.017
	Sig. (2-tailed)	.867	.849	.044	.811	.714
	Sum of Squares and Cross-products	1.571	-1.285	-16.642	-1.155	2.276
	Covariance	.003	-.003	-.035	-.002	.005
	N	474	474	474	474	474
		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
Flood DRRM Attitude	Pearson Correlation	-.031	-.013	**-.118****	-.012	-.017
	Sig. (2-tailed)	.497	.776	.010	.796	.715

	Sum of Squares and Cross-products	-4.354	-1.316	-14.545	-.851	-1.551
	Covariance	-.009	-.003	-.031	-.002	-.003
	N	474	474	474	474	474

Correlation between Frequency of Media Usage and Earthquake Awareness and Attitude of the Respondents Towards DRRM Practices

Results indicated that social media is negatively correlated to both DRRM awareness (-.162**) and the attitude of the respondents (-.162**), meaning the lesser they spend time on social media, the less they have DRRM awareness and think that it is extremely important.

Table 20. Correlation of Frequency Media Usage and Earthquake Awareness and Attitude of the Respondents Towards DRRM Practices

		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
Earthquake DRRM Awareness	Pearson Correlation	-.087	.040	**-.162****	.005	.083
	Sig. (2-tailed)	.059	.384	<.001	.914	.072
	Sum of Squares and Cross-products	-16.964	5.613	-32.543	.494	11.085
	Covariance	-.036	.012	-.069	.001	.023
	N	474	474	474	474	474
		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
Earthquake DRRM Attitude	Pearson Correlation	-.061	.015	**-.161****	.015	.083
	Sig. (2-tailed)	.184	.745	<.001	.747	.072

	Sum of Squares and Cross-products	-8.158	1.431	-22.058	1.012	7.583
	Covariance	-.017	.003	-.047	.002	.016
	N	474	474	474	474	474

Correlation between Frequency Media Usage and Fire Awareness and Attitude of the Respondents Towards DRRM Practices

Lastly, TV and Social media are significantly negatively correlated to Fire DRRM awareness, meaning that the lesser time the respondents spend on social media, the less aware they become of Fire DRRM. Social media is also significantly negatively correlated to the Fire and attitude of the respondents towards DRRM, meaning that the lesser time they spend on social media, the less they think of the importance of Fire DRRM.

Table 21. Correlation between Frequency Media Usage and Fire Awareness and Attitude of the Respondents Towards DRRM Practices

		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**
Fire DRRM Awareness	Pearson Correlation	**-.150****	.031	**-.169****	.008	.040
	Sig. (2-tailed)	.001	.506	<.001	.856	.386
	Sum of Squares and Cross-products	-27.862	4.183	-34.361	.831	5.250
	Covariance	-.059	.009	-.073	.002	.011
	N	474	474	474	474	474
		TV	**Radio**	**Social Media**	**Newspaper**	**Municipality**

Fire DRRM Attitude	Pearson Correlation	.013	.957	**-.149****	-.018	.033
	Sig. (2-tailed)	-14.475	-.234	.001	.690	.471
	Sum of Squares and Cross-products	-.031	.000	-20.658	-1.252	2.982
	Covariance	474	474	-.044	-.003	.006
	N	474	474	474	474	474

Conclusions

In general, the MDRRMC of Sto. Domingo Nueva Ecija communicate DRRM information mainly through the use of social media, specifically their Facebook page Mdrrmc – Sto. Domingo during the COVID-19 pandemic.

Their attitude and awareness of DRRM were measured using a 5-point Likert scale; the researcher took the averages per respondent and gauged that their general awareness regarding DRRM is 4.8 and that their general attitude regarding DRRM is 4.9. Again, since this scale measures from 1 to 5, their scores indicate that they have good awareness and attitude concerning DRRM.

The specific DRRM information that was shared before and during the pandemic still stayed the same (the MDRRMO shared information regarding COVID-19, fires, earthquakes, typhoons, and floods), however, the method of communicating this information changed: before the pandemic, the local MDRRMO and BDRRMO relied on posters and live demonstrations and seminars to communicate the necessary information—now that there is a pandemic, and restrictions have been placed to reduce contamination and infection, the local MDRRMO and BDRRMO rely on social media to communicate necessary DRRM information.

In terms of the relationship between sociodemographic characteristics and DRRM awareness and attitude, the results yielded that civil status had a significant positive correlation with the attitude of the respondents towards DRRM practices , which meant that married individuals or individuals with families or are cohabitating find DRRM important and relevant. Employment status also had a significant negative correlation with both awareness and the attitude of the respondents towards DRRM practices . This means that employed individuals are both more aware and have a more proactive attitude towards DRRM practices. In terms of communication characteristics, it appears that Media Usage Preferences have a significant positive correlation with Fire, Earthquake, Typhoon, Flood, and General DRRM Awareness.

The more that individuals use TV, the higher their awareness and attitude towards DRRM practices. Higher usage of radio, social media, newspapers, and municipality leads to lower COVID-19 DRRM awareness, while newspapers and municipality lead to lower COVID-19 DRRM attitude. In terms of DRRM on Flood,

the more one spends time on social media, the less their DRRM awareness and attitude. In DRRM for earthquake, social media is again negatively correlated to both respondents attitude towards DRRM practices and their awareness.

Recommendations

Based on the results of the study, the researcher recommends that the local MDRRMO and Barangay Disaster Risk Reduction and Management Office (BDRRMO) continue using social media as their primary method of communicating DRRM information to the residents of Sto. Domingo. Social media has been rated as their most preferred source of information, as well as most frequently and extensively used. However, the municipality must be careful in using this tool as it is implied to have a negative correlation to several types of DRRM awareness and attitudes of the respondents, as mentioned in the previous discussions.

Due to newspapers having low scores in terms of preference and usage, the local authorities may find it advantageous to relocate their resources to different and more preferred methods of media and communication such as social media and TV to ensure a wider reach of audience.

Aside from this, the researcher also suggests to future researchers to study social-media communication-focused research related to DRRM in another area. Future researchers may choose to pursue a qualitative-based study due to the findings of this current study, specifically on how social media leads to less DRRM awareness and attitudes despite it being the preferred and most frequently used type of media in the sample.

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