

## **THE RELATIONSHIP OF EXPOSURE TO MASS MEDIA AND KNOWLEDGE ON AND ATTITUDE TOWARDS DISASTER PREPAREDNESS AMONG RESIDENTS OF BARANGAY MAKILING, CALAMBA CITY**

*Edgielyn A. Aransay, Maiden A. Pasoot and Shaira A. Tong*

### **Abstract**

*Mass media nowadays are considered to be influential in shaping one's mind and way of life. This study was conducted essentially to determine the relationship between the respondents' exposure to mass media and their knowledge and attitude towards disaster preparedness. The researchers used the quantitative and qualitative research method. A total of 82 purposively selected residents of Barangay Makiling were surveyed. Data gathered were analyzed using frequency and percentage and weighted mean. Pearson chi-square was used to determine the relationship among the variables. Meanwhile, a focus group discussion was conducted among the eight respondents to further verify the data gathered. Based on the findings of the study, the respondents were light users of mass media such as radio, newspaper and Internet. Meanwhile, television was identified as the most-used medium. Results also showed that the respondents are knowledgeable on disaster preparedness. Most of them belong to the high and average category based on the scores they got from the knowledge test. Radio and Internet were the primary sources of information of the respondents. Findings also showed that respondents have a positive attitude towards disaster preparedness since most of their answers ranged from strongly agree to agree. Internet was revealed as the most influential medium to the attitude of the respondents. Therefore, there is a relationship between exposure to mass media and knowledge on disaster preparedness and attitude on it and Internet is the most influential mass media among the other media mentioned. The researchers recommended to the residents of Barangay Makiling not just to expose themselves to mass media but also absorb those information presented.*

**Key words:** *relationship, mass media, disaster preparedness, knowledge, attitude*

## **INTRODUCTION**

Nowadays, mass media are considered as the most powerful tools of communication.

Mass media serve as networks of communication where messages flow, produced for the masses and spread through print such as newspapers and magazines also through electronic such as radio, television and Internet. From this, mass media can easily cover a wide range of audience.

Essentially, even remote areas where there is in need of information have been invaded by the means of communication through the use of radio. People become knowledgeable about the things happening in their surroundings.

According to Mughal (2011), mass media have contributed in shaping one's mind. In fact, majority of people in the society depend on information and communication to remain connected with the world and do their daily activities like work, entertainment, health care, education, socialization, travelling and anything else that individuals have to do. People have put their trust on media as the authority to give news, entertainment and education.

Truly, mass media take a big part in making an individual well-informed when it comes to certain issues concerning humanity. Nonetheless, they also function as a warning tool that reminds everybody to be ready for any disasters that might happen. Among their variety of actions, mass media are needed to inform, educate and empower communities with relevant knowledge to influence one's mind to prepare oneself.

Since mass media are considered to be influential, the researchers delved on how exposure to mass media influences one's knowledge and attitude on disaster preparedness.

This is vital for the Philippines and its people since it is considered as a disaster-prone area due to its geographical location and geology. In fact, the country was recently hit by the historic typhoon Yolanda that caused death of 6,190 persons according to the report made by the National Disaster Risk Reduction and Management Council (Carmaco, 2014).

The researchers conducted the study among the residents of Barangay Makiling, an upland area located in Calamba City, Laguna. Since the said barangay is not that much exposed to typhoon and flood, the answers of the respondents were solely based on their exposure to mass media and were not influenced by their exposure to disasters.

This study was designed as a quantitative and qualitative research. Quantitative research was done using survey-questionnaires. Qualitative research, on the other hand was employed to validate the answers of the respondents through a Focus Group Discussion (FGD).

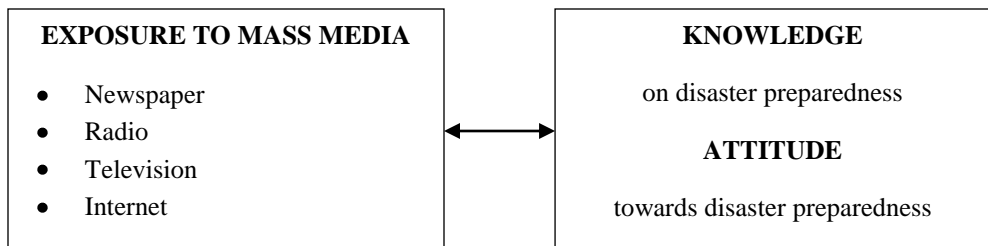
This study was conceptualized to explore the relationship between exposure to mass media and knowledge on and attitude towards disaster preparedness. Since Philippines is considered to be a disaster-prone area, this research would verify if exposure to mass media is indeed vital in creating awareness and positive attitude on disaster preparedness in the country. The researchers focused more on typhoons and floods which are disasters that Philippines is more exposed to.

## **Theoretical Framework**

The researchers used the Media System Dependency Theory by Sandra Ball-Rokeach and Melvin DeFleur as the basis of their study. Media System Dependency theory is an idea that the more a person depends on having needs gratified by media use, the more important the media's role will be in the person's life and therefore, the more influence those media will have (Baran and Davis, 2006).

In the case of the residents in Barangay Makiling, which is an urban community, they use different kinds of mass media as a way of communication. The information that they get from mass media might affect their knowledge on and attitude towards disasters. Their understanding of disasters may vary depending on the level of exposure that they get from the different mass media that they frequently use. Applying the theory, their knowledge and attitude might change overtime depending on the information that they get and how often they use that type of medium.

## **Conceptual Framework**



**Figure 1. Conceptual framework**

In this study, the researchers used two groups of variables– the dependent and independent variables.

The framework starts with the exposure to mass media such as newspaper, radio, television and Internet which represents the independent variable. Exposure to mass media was measured by the number of hour or times that the respondents use each medium in a day or in a week.

Meanwhile, the dependent variables are represented by knowledge of the respondents and attitude towards disaster preparedness. These are variables that can be observed and measured in determining the effect of independent variable. This indicates that the knowledge and attitude could largely be influenced by the respondents' exposure to mass media.

### **Objectives of the Study**

This research determined the relationship of exposure to mass media and knowledge on and attitude towards disaster preparedness among the residents of Barangay Makiling, Calamba City, Laguna.

Specifically, it sought to:

1. identify the level of exposure of the respondents to:
  - 1.1. newspaper
  - 1.2. radio
  - 1.3. television
  - 1.4. Internet
1. identify the level of knowledge on disaster preparedness of the respondents
2. identify the attitude of the respondents towards disaster preparedness
3. determine if there is a significant relationship between the exposure to mass media and knowledge on disaster preparedness

4. determine if there is a significant relationship between the exposure to mass media and attitude towards disaster preparedness.

## **METHOD**

### **Research Design**

The researchers used the descriptive research to determine the relationship between the exposure to mass media and knowledge on and attitude towards disaster preparedness and qualitative research for validation.

Descriptive research can be either quantitative or qualitative. It involves collections of quantitative information that can be tabulated along a continuum in numerical form, such as scores on a test or the number of times a person chooses to use a-certain feature of a multimedia program (The Association for Educational Communications Technology AECT, 2001).

According to AECT, descriptive research also involves gathering data that describe events and then organizing, tabulating, depicting, and describing the data collection. When in-depth, narrative descriptions of small numbers of cases are involved, the research uses description as a tool to organize data into patterns that emerge during analysis. Those patterns aid the mind in comprehending a qualitative study and its implications.

Quantitative research aims to determine the relationship between one thing (independent variable) and another thing (dependent variable) in a population. This can be a descriptive one wherein the participants will be measured once or experimental in which the participants will be measured before and after the treatment (Babbie, 2010).

For the quantitative research, the researchers distributed a survey-questionnaire among the respondents. This type of research enabled the researchers to identify the relationship between the exposure to mass media and knowledge on and attitude towards disaster preparedness.

Qualitative research, on the other hand, was done to gain an understanding of the problem and its underlying factors. This was used by the researchers for validation of the results of the survey. This was done by conducting Focus Group Discussion (FGD). A trained moderator usually conducts the discussion in a non-structured and natural manner with a small group of respondents (Malhotra, 2007).

### **Sampling and Sampling Design**

The respondents of the study were the residents of Barangay Makiling, Calamba City which is an upland area and is not exposed to disasters like typhoon and flood.

The researchers purposively selected 82 respondents who are exposed to mass media to answer the survey questionnaires. In purposive sampling, the researchers deliberately choose the informant because of their qualities depending on what needs to be known (Bernard, 2002).

To get the sample size, the researchers employed the statistical power. The sample size is 82 households using error ( $\alpha$ ) at 0.05; effect size is medium at 0.3 and power ( $\beta$ ) at 0.80.

Meanwhile, eight participants were chosen for the FGD. According to Malhotra (2007), a focus group generally includes 8 to 10 members who have adequate experience on the issue being discussed. Thus, the researchers chose four respondents who got the highest score and another

four who obtained the lowest score in the knowledge test on disaster preparedness.

### **Data Gathering Tool**

The research employed a one-shot research survey design to determine the respondents' sources of information, frequency exposure to mass media, as well as their knowledge on and attitude towards disaster preparedness.

The first part of the questionnaire obtained information on the respondents' sources of information and frequency of exposure to mass media. Level of exposure was measured using the following scale:

#### **1. Newspaper (Comscore, 2008)**

| <b>Newspaper exposure per week</b> | <b>Verbal Interpretation</b> |
|------------------------------------|------------------------------|
| <b>1-2 times</b>                   | Light reader                 |
| <b>3-5 times</b>                   | Medium reader                |
| <b>6-7 times</b>                   | Heavy reader                 |

#### **2. Radio (Essential Research, 2009)**

| <b>Number of hour spent per day</b> | <b>Verbal Interpretation</b> |
|-------------------------------------|------------------------------|
| <b>Less than 8 hours</b>            | Light listener               |
| <b>9-14 hours</b>                   | Medium listener              |
| <b>More than 14 hours</b>           | Heavy listener               |

#### **3. Television (Nielsen, 2012)**

| <b>Number of hour spent per day</b> | <b>Verbal Interpretation</b> |
|-------------------------------------|------------------------------|
| <b>Less than 1.6 hours</b>          | Light user                   |
| <b>1.6 – 3 hours</b>                | Light-medium user            |
| <b>3 – 4.6 hours</b>                | Medium user                  |



|                            |                   |
|----------------------------|-------------------|
| <b>4.6 – 7.3 hours</b>     | Heavy-medium user |
| <b>More than 7.3 hours</b> | Heavy user        |

#### 4. Internet (Jonas, 2010)

| <b>Number of hour spent per week</b> | <b>Verbal Interpretation</b> |
|--------------------------------------|------------------------------|
| <b>Less than 20 hours</b>            | Light user                   |
| <b>20 - 40 hours</b>                 | Medium user                  |
| <b>More than 40 hours</b>            | Heavy user                   |

Next part covered information on their knowledge on disaster preparedness through a 10-item questionnaire. The information used in the said questionnaire were acquired from Manila Typhoon Center Official website. Knowledge was measured using the following scale by Ibay (2001): high level with 7-10 correct answers; average level with 4-6 correct answers and low with 1-3 correct answers.

The last part of the questionnaire determined the attitude towards disaster preparedness using a 4-point Likert Scale.

Mr. Thaddeus Lawas, University Research Associate II at School of Environmental Science and Management-University of the Philippines Los Baños, validated the said questionnaire.

Meanwhile, for the FGD, the researchers used a questionnaire validated by Mr. Lawas.

## RESULTS AND DISCUSSION

Below are the results of the gathered data:

### Mass media exposure

This part presents the mass media exposure of selected residents of barangay Makiling, Calamba City. This includes the four mass media that the residents are more exposed to such as newspaper, radio, television and Internet.

#### a. Newspaper

Results of the study show that respondents who read newspaper once or twice a week have the highest percentage with 71.95% of the respondents and Comscore (2008) classified these readers as *light reader*. Meanwhile, only 4 or 4.88% of the respondents read newspaper for 6-7 times a week.

FGD respondents, on the other hand, mentioned that they are no longer reading newspaper because of some errors on the news presented in newspapers and also because they have to go to the town just to buy newspaper.

This implies that the respondents are not much exposed to newspaper since the respondents are no longer into reading and they are having difficulty on the access to newspaper. In fact, only few are reading newspaper everyday or considered as heavy reader and there are who are no longer reading newspaper at all.

This was corroborated by the study conducted by Cruz et al. (2001) on media consumption as one of the determinants of Filipino adolescents' lifestyle wherein the results revealed a low exposure rate of 15 percent to

reading materials such as newspapers, comics, magazines, pocketbooks and the like. Also, readership among the youth is focused on less important materials such as romance, love stories and 'variety' comics.

Likewise, according to Cruz et al. (2001), people in the rural areas are less widely reading newspapers because the wide circulation of national broadsheets hardly reaches the people. Similar to the reasons mentioned by the FGD participants, they are having difficulty on the access to newspaper that is why they are not much exposed to it even they are in an urban area.

*b. Radio*

Findings reveal that almost 77% of the respondents are *light listeners* as categorized by Essential Research (2009) with less than 8 hours of radio exposure in a week. Heavy listeners who spend more than 14 hours in a week are only 2 or 2.44% of the respondents. The rest are medium listeners (8 or 10%) and others do not listen to radio at all (9 or 11%). FGD results, on the other hand, showed that respondents seldom listen to radio because technology offers easier access to music.

This means that the residents of Barangay Makiling are less exposed to radio. In fact, some of the respondents are no longer listening to radio. This is because of easier access to music, for instance, using other media.

However, results presented were in contrast to the study of Cruz et al. (2001). Findings of the study indicated that the rural respondents claimed that they have been regularly exposed to radio. Thus, radio is perceived as the most popular medium followed by television. Moreover, adolescents were mentioned to focus on listening to music rather than news. Meanwhile, on the FGD conducted, respondents mentioned that they prefer listening to music using other media and not radio.

*c. Television*

Results reveal that 27 or 32.93% of the respondents watch television for 1.6-3 hours in a day making them as *light-medium user* as categorized by Nielsen (2012). On the other hand, only 2 or 2.44% of the respondents belong to the category of heavy user with more than 7.3 hours of TV exposure. On the other hand, in the FDG conducted, respondents agreed that television is the medium that they are frequently using and they prefer it because for them, it is better to see and hear the news.

This suggests that the respondents are exposed to television since almost all of the respondents watch television because it is convenient to use. Likewise, they also preferred this as a source of information because it is audio-visual and respondents prefer to see the actual action.

This was supported by the report made by National Statistics Office (2001), indicating a large number of Filipino people are watching television. According to NSO, the population of viewers continued to rise in the 90's with an increase of 8.7%, which is the highest among the eight mass media mentioned. Thus, indicating that people are indeed exposed to television.

Results of this study were supported by the study of Cabral (2006) on the effects of exposure to sex-related stories in mass media on attitudes of teenagers toward teenage pregnancy. Findings showed that almost all the respondents are exposed to television and they watch TV everyday. In addition, television ranked first by the respondents as source of information on sex-related stories. Thus, respondents are more exposed to television like the residents of Barangay Makiling.

*d. Internet*

Results of this study indicate that most of the respondents are *light users* of Internet as categorized by Jonas (2010). Out of 82 respondents, 49 or 60% of them use the Internet for less than 20 hours in a week. Only 4 or 4.88% of the respondents use Internet are heavy users who spend more than 40 hours in a week in using the Internet. Meanwhile, FGD participants mentioned that they are not much into Internet since they are not interested in using it.

This signifies that the respondents are not that exposed to Internet and they are spending few hours using it while others do not use it at all. This is because some of the respondents are experiencing difficulty on using the Internet and on the signal as well.

This was in contrast to the findings of Nielsen Pinoy Netizen that Internet penetration in the country was doubled from 27% in 2010 to 52% of Filipino population that can now access to Internet. Thus, around 33% of the population is now spending two hours a day using the Internet. This sudden increase of Internet users was basically because of the wide use of mobile phone technology where they can access the Internet easily. However, results of this study revealed that majority of the respondents are spending less than 20 hours in a week in using the Internet.

According to Blank (2013), there are multiple and interrelated reasons for not using the Internet. Some of these are lack of computer to be used, lack of interest and knowledge as well. Other reasons for not using the Internet include the cost and difficulty in accessing to Internet. These were similar to the reasons mentioned by the FGD respondents on using the Internet.

## **Knowledge of the respondents on disaster preparedness**

This part presents the knowledge of the respondents on disaster preparedness based on their scores in the knowledge test. The scores were categorized into three: 10-7 is high, 6-4 is average and 3-0 is low.

Findings show that the highest number of respondents is knowledgeable on things to do before a typhoon hits their place with 65 or 75.61% followed by question knowledge on when to evacuate their place with 61 or 74.3%. Meanwhile, *knowledge on things to do during a typhoon and you did not evacuate your family* garnered the least number of respondents who have knowledge on it with 8 or 9.76%.

The results imply that the respondents are knowledgeable on what to prepare before a typhoon hits their place and when to evacuate the place. However, it also implies that the respondents are in need of the information on what to do during a disaster if ever they did not evacuate their place.

This is in contrast with the findings of the study conducted by Sinha et al. (2008) about the knowledge, practices and attitude on disaster preparedness among the 375 undergraduate medical students. Results of the study revealed that students have little knowledge on disasters and disaster preparedness. Similar to the method used in assessing the knowledge of the residents of Barangay Makiling, a structured questionnaire was also administered.

On the other hand, results of this study also reveal that majority of the respondents got a score of 9-7, considered as *high* as categorized by Ibay (2001) and 6-4 considered as average. A total of 36 respondents belong to the category of high and 36 were also in the average.

This implies that most of the respondents are knowledgeable on disaster preparedness since most of the respondents belong to the category of high and average in terms of knowledge.

### **Attitude of the respondents towards disaster preparedness**

This part presents the attitude of the respondents towards disaster preparedness using the four mass media. This is based on the results of attitude test using the 4-point Likert Scale.

Respondents *agreed* that reading the newspaper helps them realize the importance of disaster preparedness garnering the highest mean of 2.24. Meanwhile, in listening to radio, the respondents were updated on the upcoming disasters, provided with early warnings and they had a wide access to information. These statements garnered the highest mean in radio with 3.02. In watching television, respondents *agreed* that it gives them reliable news about typhoon and flood with a weighted mean of 3.63. On the other hand, the respondents *agreed* that using the Internet, they were updated on the upcoming disasters and became aware of the possible hazards of the upcoming disasters with a weighted mean of 2.43.

Among the four mass media, television got the highest composite mean of 3.61. This indicates that the responses on statements for television were all *Strongly Agree*.

Meanwhile, among the ten attitudinal statements, statement number 1: *It keeps me updated on the upcoming disasters like typhoon and flood* garnered the highest overall mean of 2.81.

Results of the study imply that the respondents have a positive attitude towards disaster preparedness using the four mass media. In

addition, findings also denote that mass media is effective in influencing the attitude of the respondents on being updated upcoming disasters.

### **Relationship between exposure to mass media and knowledge on disaster preparedness**

This part presents the respondents' exposure to mass media and its relation to their knowledge on disaster preparedness. This was computed using the Pearson-chi square.

Findings of the study indicate that the respondents' knowledge *on things to do before a typhoon hits their place, on things to prepare if their place is a flood-prone area and a typhoon is about to come, things to do in a place with too many trees and a typhoon is about to come, when to evacuate their place, what to substitute if the electricity is still out, what to do after a typhoon and the supply of water is back and knowledge on things to do after a typhoon*, have a significant relationship with their exposure to mass media with less than 0.05 level. Results also showed that radio and Internet are the media that have the most significant relationship on the knowledge of the respondents followed by television and newspaper, respectively.

This suggests that respondents' exposure to mass media helps them gain knowledge on disaster preparedness. Results also imply that radio and Internet are the mass media that best influence the knowledge of the respondents on disaster preparedness.

This was supported by the study conducted by Al-Sharbatt et al. (2012). Results of the study show that Internet is the most influential media on ideas about body appearance among the study group, followed by television. This finding is similar to studies conducted in other countries such as UK, France and Germany, which stated that Internet was significantly



more influential than any other form of media. Therefore, Internet is perceived as an effective medium to convey messages to the youth.

Meanwhile, radio was also mentioned to be influential on the respondents' knowledge on disaster preparedness. This was corroborated by the study of Mariswamy (2006) on the usefulness and credibility of radio as perceived by literated farmers. Results of the study revealed that the farmers are more interested in getting information using radio and those information retained on the minds of the farmers which could be utilized for adoption in getting higher yields.

### **Relationship between exposure to mass media and attitude towards disaster preparedness**

This part presents the respondents' exposure to mass media and its relation to their attitude towards disaster preparedness. This was computed using the Pearson chi-square.

Results of the study reveal that attitudinal statements "*It keeps me aware on the possible hazards of the upcoming disasters*", "*It provides fast information dissemination*", "*It offers a wide access to information about disaster preparedness*", "*It helps me to become disaster-ready*", "*It gives me a widespread of interest regarding disaster preparedness*" and "*It helps me realize the importance of disaster preparedness*" have a significant relationship on the respondents' mass media exposure with less than 0.05 level. The table also shows that Internet has the most significant relationship on the attitude of the respondents towards disaster preparedness. Exposure to television, on the other hand, was not mentioned to have significant relationship on the attitude of the respondents.

This implies that the respondents' exposure to mass media can influence their attitude towards disaster preparedness. In addition, Internet

was cited as the medium that could best influence the attitude of the respondents towards the said issue. Meanwhile, television was not mentioned to have influence on the respondents' attitude.

This was contrary to the study of Shrum (2009) wherein findings showed that television has the power to strengthen the attitude of the viewers along with the television message being conveyed. In fact, heavy TV viewers exhibited stronger attitude than light viewers.

However, results of this study revealed that Internet is the most effective medium in influencing the attitude of the respondents towards disaster preparedness and television was not mentioned at all.

## **CONCLUSION AND RECOMMENDATION**

### **Conclusions**

The study showed the mass media exposure of the residents of Barangay Makiling and its relation to the knowledge and attitude of the respondents towards disaster preparedness.

In terms of the respondents' level of exposure, the researchers found out that most of the residents of Barangay Makiling belong to the category of *light user* of mass media such as newspaper, radio and Internet. However, results showed that the residents are more exposed to television and they prefer to use it over the other mass media because of its accessibility and special aspect as a medium since it is audio-visual.

When it comes to the respondents' level of knowledge towards disaster preparedness, they are considered to be knowledgeable since they belong to the high and average range based from their knowledge test scores.

Therefore, though the respondents are lightly exposed to mass media, they still have adequate knowledge on disaster preparedness. Since they have the knowledge about disaster preparedness, they have also the power to make informed decisions during disasters making them safe and less destructed.

For the attitude, results revealed that the respondents' exposure to mass media resulted to a positive attitude towards disaster preparedness. All of them agreed that exposure to mass media keeps them updated on the upcoming disasters like typhoon and flood.

Meanwhile, exposure to radio and Internet was revealed to have a significant relationship on the knowledge of the respondents. Thus, the more people exposed themselves to radio and Internet, the higher probability of being knowledgeable on disaster preparedness

The researchers also found out that Internet is the medium that best influences the attitude of the respondents towards disaster preparedness. Thus, there is a higher probability of changing their attitudes towards disaster preparedness as they exposed themselves to Internet.

Therefore, exposure to mass media can help people to become knowledgeable on disaster preparedness and change their attitude towards it. However, this depends on the people who absorb the information from the mass media.

## **Recommendations**

Based on the results of the study, the researchers recommend the following:

For the local government, they should provide more information on radio and Internet since these media were revealed to be influential in terms of the knowledge on disaster preparedness.

For the community, they should expose themselves more to mass media specifically to Internet and radio. However, they should not just expose themselves to these media but also absorb the information presented so as they would be able to use those information in making informed decisions.

For the media practitioners, they must be very keen to details before airing and posting news to prevent such mistakes that might cause danger to the lives of people since FGD participants mentioned that there were times when false information are being disseminated on media.

For the future researchers, they can also make this topic as an experimental study wherein they are going to compare two different barangays- one is located in an upland area and the other one is in a low land area for them to know if there are parallel views among the respondents or still they are different to each other.

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