

# ASSESSMENT OF DISASTER RISK REDUCTION AWARENESS OF CAS STUDENTS: BASIS FOR CAS STUDENT CENTER

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## ABSTRACT

*The Philippines is a hazard prone country so most of the population is being affected mostly by natural and man-made hazards.*

*One of the highly affected by these hazards are the students all over the country. They are commonly victims of unexpected occurrence which put their lives to danger aside from the fact that schools in the Philippines were typically used as evacuation centers where students are being affected due to suspension of classes, and is assumed that academic activities are displaced.*

*Students are not aware of such phenomena that most of the time are confused on what to do since this type of situations were not integrated in the curriculum which resulted muddle and anxieties.*

*The Laguna State Polytechnic University (Sta. Cruz Campus) as a premier educational institution situated in the CALABARZON area is responsible for the education of the studentson the awareness of hazards they come across.*

*The focus of this study is to find the level of DRR awareness of the students, types of hazards that they encountered or experienced, perception of their risks and readiness. It is at this juncture that the College of Arts and Sciences (CAS) is considering the possibility of putting up a DRR CAS Student Center to further mitigate the effects of disaster/ major incidents and global diseases specifically to students.*

**Keywords:** hazards, disaster rick reduction, readiness of students, disaster, perception of students' risk

## INTRODUCTION

Hazard is a process, phenomenon or human activity that may cause loss of life, property damage, social and economic disruption or environmental degradation it maybe natural, anthropogenic or socionatural in origin.

([www.preventionweb.net/terminology/view/488](http://www.preventionweb.net/terminology/view/488))

It is a serious disruption of the functioning community or society including widespread human, material, economic or environmental losses and impacts which exceeds the ability of that affected community or society to cope with its own resources. (un-spider.org/risk-and-disaster)

Disaster Risk Reduction (DRR) describes the actions that aims to achieve the objective of reducing risk. The concept and practice of reducing the risk of disaster through systematic efforts to analyze and manage casual factors. It includes reducing exposure to hazards lessening the vulnerability.

Improving our knowledge of hazards and conducting hazard assessment can help us to locate and in case of some hazards anticipate over the different time-periods when this might occur.

Anticipation ranges from probabilistic analysis of long-term hazard occurrence to monthly, daily, or even hourly detection and monitoring of hazards in order to inform Early Warning System (EWS). ([www.preventiveweb.net./disaster-risk/risk/hazard](http://www.preventiveweb.net./disaster-risk/risk/hazard))

According to United Nations Children's Fund (UNICEF) that there are three (3) pillars of DRR and education namely (1) promotions of DRR in teaching and learning (2) integrate DRR into the formal and non-formal education curricula (3) provide in-service-teacher training on disaster preparedness and raising awareness of hazards through school-based education projects. (school safety and disaster management e.g., drills. 3 pillars of DRR and education).

The Philippines has suffered from an inexhaustible number of deadly typhoons, earthquakes, volcano eruptions and other natural disasters. This is due to its location along the Ring of Fire, or typhoon belt – a large Pacific Ocean region where many of Earth's volcanic eruptions and earthquakes occur.

Annually, approximately 80 typhoons develop above tropical waters, of which 19 enter the Philippine region and six to nine make landfall, according to the Joint Typhoon Warning Center (JTWC). ([www.dw.com/en/philippines-a-country-prone-to-natural](http://www.dw.com/en/philippines-a-country-prone-to-natural))

"It is undeniable that children are the most vulnerable during disasters and emergencies. If we don't involve them to be resilient and more proactive, all our DRR initiatives could only go so far. Youth participation is pivotal in ensuring our efforts are adaptive to their context and capacity to mitigate disaster risks," World Vision's National Director Rommel Fuerte.

"Disasters also disrupt education and can cause psychological distress. Knowing how children are affected by disasters, and getting their ideas on how to prevent and mitigate the adverse impacts of these disasters is an important area of UNICEF's work," Lotta Sylwander, UNICEF Philippines Representative. (National Consultation with Children and Youth on Disaster Risk Reduction, June 18, 2019).

"I feel like we are finally breaking the notion that children and youth are just children and youth. We are finally speaking our voices and we're finally gaining more trust from the government. As children and youth, we are efficient and effective agents of change," says Angela Naco, 18, one of the youth participants.

"DepEd and CHED literally have students begging for money online just so they don't get left behind with their academics, which is simply unacceptable considering the situation we are in," the Samahan ng Progresibong Kabataan spokesman John Lazaro said in a statement.

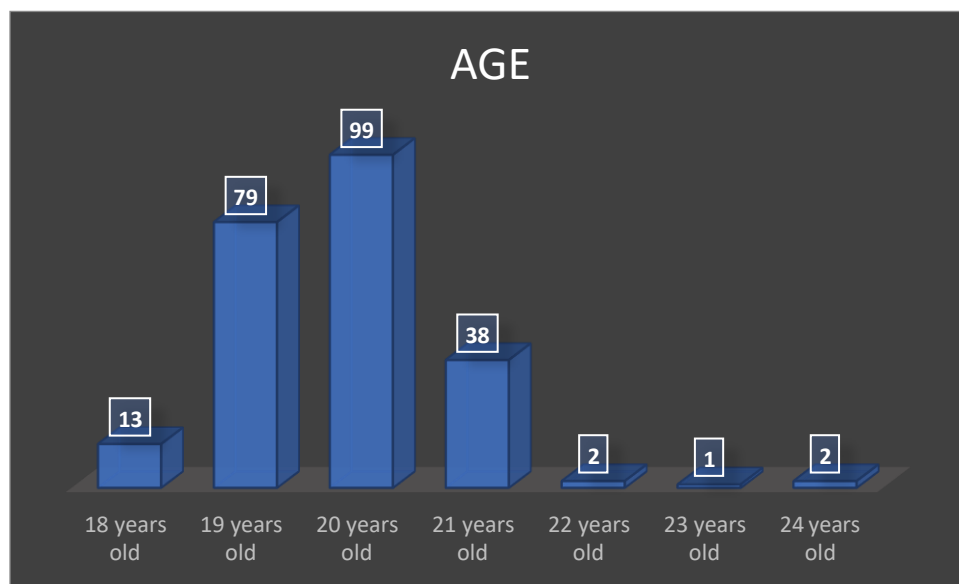
It is at this point that the study seeks the variables to identify the level of awareness of the CAS students towards the setting up a DRR Student Center as a container of information to suffice the prevention and control of hazards occurring now and then.

## METHODOLOGY

Descriptive research was used in this study defined as it is used to investigate different phenomenon and situations. It always targets to answer questions like how the situation happen, when in terms of the time or date, where in terms of the place, it happened and what the issue of phenomenon is. In this study the questionnaire is the instrument used to measure the significant effect of the variables to identify the basis for putting up a student DRR center.

A total respondent of 235 students from the College of Arts and Sciences for Academic year 2020-2021 the researchers made use of self-made questionnaire with some modification done for the data collection. The instrument used was divided into four parts namely: part 1 is the profile of the student-respondents while part 2 is the identification of hazards that includes if the respondents are exposed and have experienced, for part 3 it is the perception of students' risk and followed by part 4 which is the readiness of the student-respondents including the indicators for evacuation process, hazard protection, training on disaster preparedness and the last of which is the facilities for disaster awareness. The responses of the research participants were based on the Like kart five-scale responses such as extremely aware (5), very aware (4), moderately aware (3), slightly aware (2) and not at all aware (1). Application of statistical treatment was done to provide validated results of the study conducted.

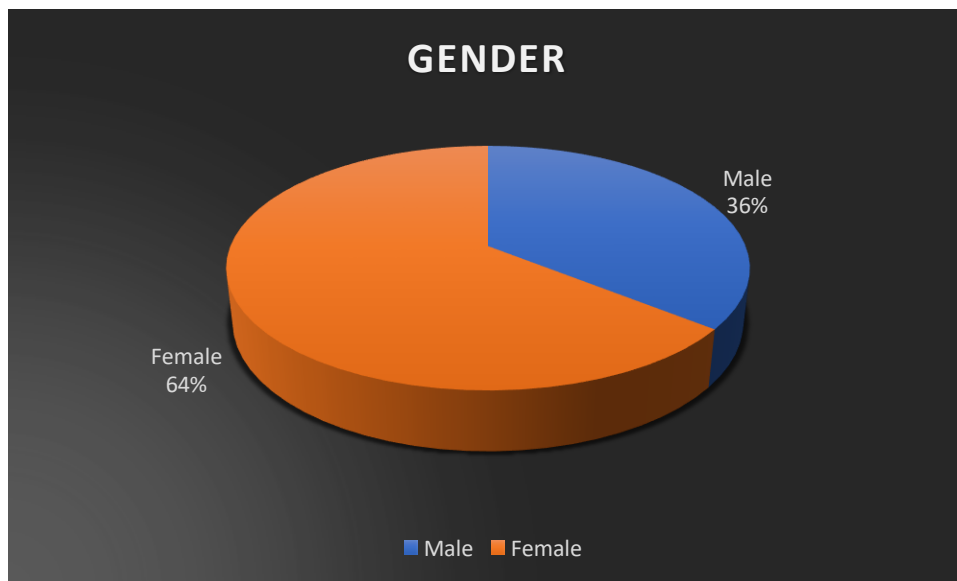
## RESULTS AND DISCUSSION



**Figure 1. Profile of the students with regards to Age**

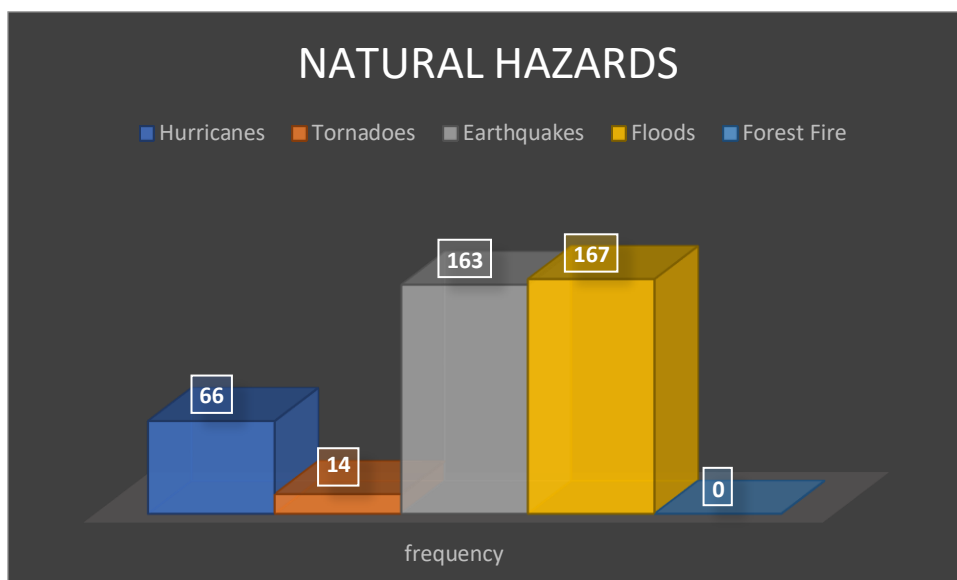
With a total respondent of 235 in the College of Arts and Sciences for school year 2020-2021, the age “20 years old” have the highest frequency of ninety-nine (99) or 42.13% of the total respondents. Followed by the age “19 years old” with a frequency of seventy-nine (79) or 33.62% of the total respondents while the age “23 years old” have the least number of frequencies of one (1) or 0.43% of the total respondents. This means that majority of the

ages of the students in the College of Arts and Sciences for school year 2020-2021 during the time of the study is ranging 19 to 20 years old, which is more than half of the respondents.



**Figure 2. Profile of the students with regards to Gender**

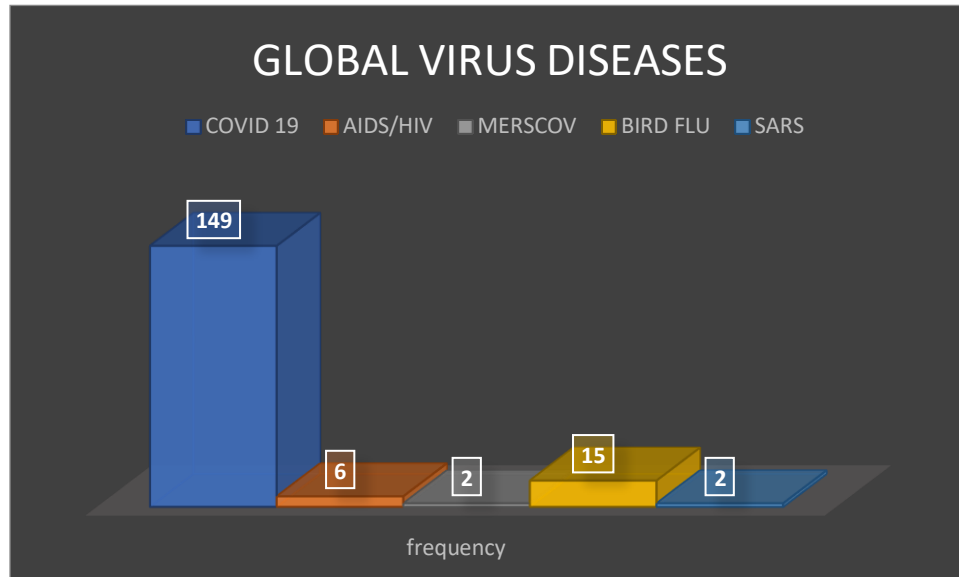
For gender “*Female*” has the highest frequency of one hundred fifty-one (151) or 64.26% of the total respondents. While the gender “*Male*” has the least number of frequencies of eighty-four (84) or 35.74% of the total respondents This means that majority of the students in the College of Arts and Sciences is almost two-thirds of the respondents.



**Figure 3. Status of hazards they are exposed or experienced in terms of Natural Hazards**

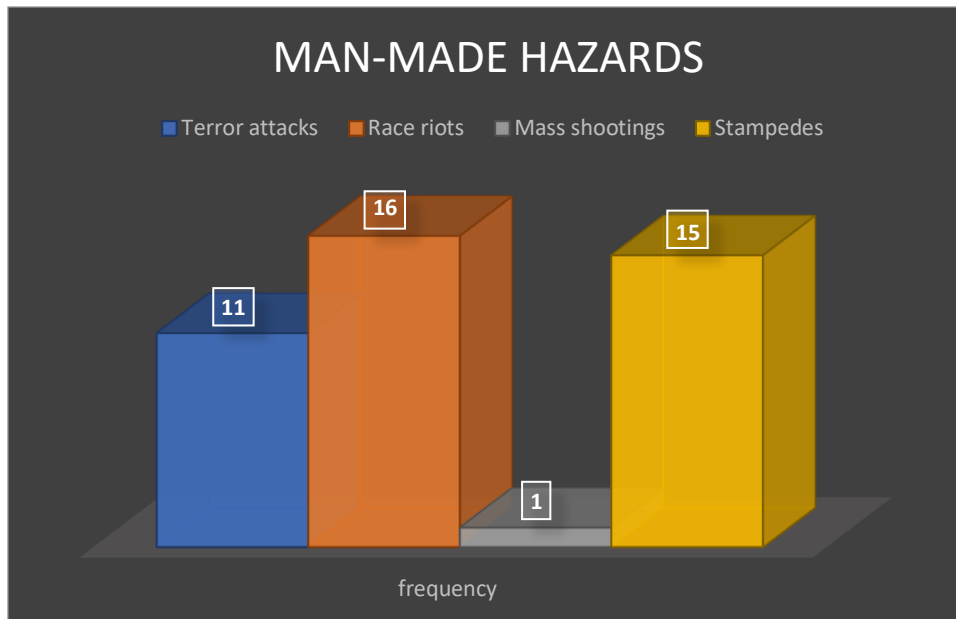
The natural hazard “*Floods*” have the highest frequency of one hundred sixty-seven (167) or 71.06% of the total respondents. Followed by the natural hazard “*Earthquakes*” with a frequency of one hundred sixty-four (164) or 69.79% of the total respondents. While the

natural hazard “*Tornadoes*” have the lowest frequency of fourteen (14) or 5.96% of the total respondents. This is interpreted that majority of the students are knowledgeable about the hazards and are exposed or experienced natural hazards such as floods and earthquakes, which is always happening in a tropical country.



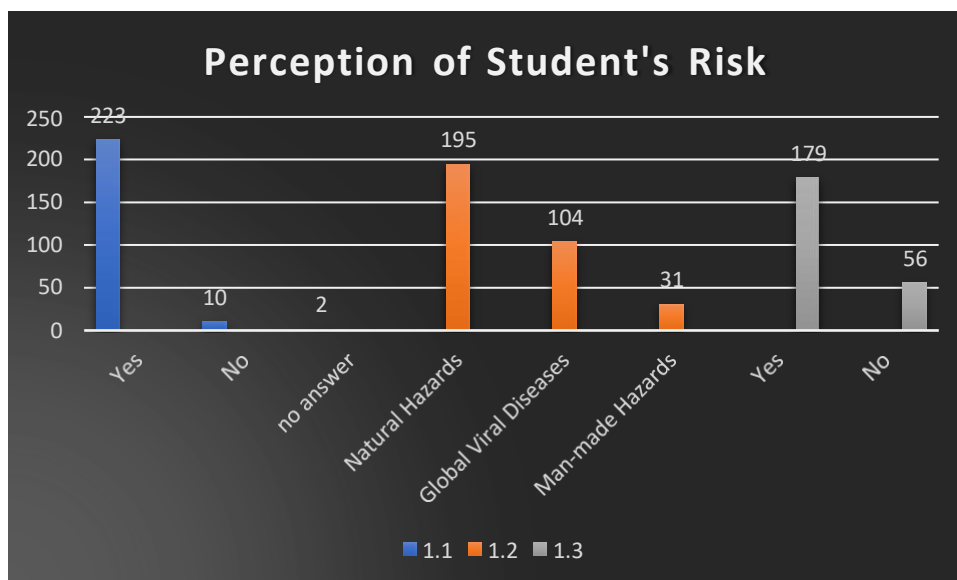
**Figure 4. Status of hazards they are exposed or experienced in terms of Global VirusDiseases**

The global virus disease “*COVID 19*” have the highest frequency of one hundred forty- nine (149) or 63.40% of the total respondents. Followed by the global virus disease “*Bird Flu*” with a frequency of fifteen (15) or 6.38% of the total respondents and the global virus disease “*MERSCOV and SARS*” have both the lowest frequency of two (2) or 0.85% of the total respondents. This means that majority of the student-respondents in the College of Arts and Sciences during the time of the study was conducted are aware about and are exposed or experienced global virus disease COVID 19, which is a worldwide pandemic.



**Figure 5. Status of hazards they are exposed or experienced in terms of Man-made Hazards**

For the man-made hazard “*Race riots*” have the highest frequency of sixteen (16) or 6.81% of the total respondents. Followed by the man-made hazard “*Stampedes*” with a frequency of fifteen (15) or 6.38% of the total respondents. While the man-made hazard “*Mass shootings*” have the lowest frequency of one (1) or 0.43% of the total respondents. This means that some of the students in the College of Arts and Sciences for school year 2020-2021 during the time of the study are aware about and are exposed or experienced man-made hazard race riots, which is happening in the other parts of the country.



**Figure 6. Level of Perception of Student's Risk**

Two hundred twenty-three (223) or 94.89 agreed that the students think disasters/hazards happen in the province or in their own respective places. And for the last two years, the respondents settle that the disaster/major incidents affected the school or

community is the Natural Hazards with one hundred ninety-five (195) or 82.98% and Global Viral Diseases with one hundred four (104) or 44.26% of the total respondents. While they think that the university/educational institution is a safe and secured place to stay in case disasters occur with one hundred seventy-nine (179) or 76.17%. This means that the level of perception of student's risk is very high and very evident.

**Table 1. Extent of readiness of the students in the College of Arts and Sciences**

| <b>Statements</b>                                                                                              | <b>Mean</b> | <b>SD</b> | <b>Remarks</b> |
|----------------------------------------------------------------------------------------------------------------|-------------|-----------|----------------|
| 1.Awareness of your role during the disaster                                                                   | 3.97        | 0.86      | High           |
| 2.Readiness for all types of disaster                                                                          | 3.84        | 0.95      | High           |
| 3.Responsibilities during disaster                                                                             | 3.83        | 0.93      | High           |
| <b>Overall Mean = 3.87</b><br><b>Standard Deviation = 0.932</b><br><b>Verbal Interpretation = Great Extent</b> |             |           |                |

Legend:

| <b>Scale</b> | <b>Range</b> | <b>Remarks</b>  | <b>Verbal Interpretation</b> |
|--------------|--------------|-----------------|------------------------------|
| 5            | 4.20-5.00    | Very High       | Extremely Aware              |
| 4            | 3.40-4.19    | High            | Very Aware                   |
| 3            | 2.60-3.39    | Moderately High | Moderately Aware             |
| 2            | 1.80-2.59    | Low             | Slightly Aware               |
| 1            | 1.00-1.79    | Very Low        | No at All Aware              |

As evaluated by the students in the College of Arts and Sciences to a *great extent*, the student's awareness in the role during the disaster with ( $M = 3.97$ ,  $SD = 0.86$ ) and have the readiness for all types of disaster with ( $M = 3.84$ ,  $SD = 0.95$ ). Although also observed to *great extent*, the item with the lowest rating was in the responsibilities during disaster with ( $M = 3.83$ ,  $SD = 0.93$ ).

The overall mean of 3.87, standard deviation of 0.932, indicates the extent of readiness of the students in the College of Arts and Sciences have a remark of *high* and verbally interpreted as *very aware*. The finding shows that the readiness of the students during the time of the study is well adheres.

**Table 2. Extent of readiness of the students in the College of Arts and Sciences in terms of Evacuation Process**

| <b>Statements</b>                                                          | <b>WM</b> | <b>SD</b> | <b>Remarks</b> |
|----------------------------------------------------------------------------|-----------|-----------|----------------|
| 1. Knowledge about immediate evacuation process during disaster occurrence | 3.83      | 0.93      | High           |
| 2.Knowledge about exit signals during evacuation process                   | 3.71      | 0.89      | High           |
| 3.Knowledge about special door for exit during evacuation process          | 3.76      | 0.90      | High           |
| 4. Knowledge about first responsible for evacuation process                | 3.79      | 0.93      | High           |

**Overall Mean = 3.76**  
**Standard Deviation = 0.923**  
**Verbal Interpretation = Very Aware**

Legend:

| Scale | Range     | Remarks         | Verbal Interpretation |
|-------|-----------|-----------------|-----------------------|
| 5     | 4.20-5.00 | Very High       | Extremely Aware       |
| 4     | 3.40-4.19 | High            | Very Aware            |
| 3     | 2.60-3.39 | Moderately High | Moderately Aware      |
| 2     | 1.80-2.59 | Low             | Slightly Aware        |
| 1     | 1.00-1.79 | Very Low        | Not at All Aware      |

From the evaluation by the students in the it is indicated that there is a *very aware* in the verbal interpretation, about the student's knowledge on immediate evacuation process during disaster occurrence with ( $M = 3.83$ ,  $SD = 0.93$ ) and have the knowledge about first responsible for evacuation process with ( $M = 3.79$ ,  $SD = 0.93$ ). Although also observed to *very aware* the item with the lowest rating was in the knowledge about exit signals during evacuation process with ( $M = 3.71$ ,  $SD = 0.89$ ).

The overall mean of 3.76, standard deviation of 0.923, indicates the extent of readiness of the students in the College of Arts and Sciences in terms of Evacuation Process have a remark of *high* and verbally interpreted as *very aware*. The finding shows that the readiness of the students in terms of evacuation process during the time of the study is well observed.

**Table 3. Extent of readiness of the students in the College of Arts and Sciences in terms of Hazard Protection**

| Statements                                                                                                         | WM   | SD   | Remarks         |
|--------------------------------------------------------------------------------------------------------------------|------|------|-----------------|
| 1. Knowledge about civil defense phone official's numbers of disaster management office                            | 3.50 | 0.95 | High            |
| 2. Knowledge about the locations and number of fire alarms                                                         | 3.46 | 0.99 | High            |
| 3. Knowledge about the usage of example fire extinguishers, etc.                                                   | 3.39 | 0.91 | Moderately High |
| 4. Knowledge about dealing with disaster like fire, etc.                                                           | 3.31 | 0.91 | Moderately High |
| 5. Knowledge about responding to explosion accident, falling debris in case of earthquake, etc.                    | 3.30 | 1.01 | Moderately High |
| <b>Overall Mean = 3.38</b><br><b>Standard Deviation = 0.946</b><br><b>Verbal Interpretation = Moderately Aware</b> |      |      |                 |

Legend:

| Scale | Range     | Remarks   | Verbal Interpretation |
|-------|-----------|-----------|-----------------------|
| 5     | 4.20-5.00 | Very High | Extremely Aware       |

|   |           |                 |                  |
|---|-----------|-----------------|------------------|
| 4 | 3.40-4.19 | High            | Very Aware       |
| 3 | 2.60-3.39 | Moderately High | Moderately Aware |
| 2 | 1.80-2.59 | Low             | Slightly Aware   |
| 1 | 1.00-1.79 | Very Low        | Not at All Aware |

Based on the evaluation of the students-respondents in the College of Arts and Sciences to a *great extent*, the student's knowledge about civil defense phone officials' numbers of disaster management office with ( $M = 3.50$ ,  $SD = 0.95$ ) and knowledge about the locations and number of fire alarms with ( $M = 3.46$ ,  $SD = 0.99$ ). Although it is observed to *moderately extent*, the item with the lowest rating was the knowledge about responding to explosion accident, falling debris in case of earthquake, etc with ( $M = 3.30$ ,  $SD = 1.01$ ).

The overall mean of 3.38, standard deviation of 0.946, indicates the extent of readiness of the students in the college in terms of Hazard Protection have a remark of *moderately high* and verbally interpreted as *moderately extent*. The finding shows that the readiness of the students in terms of hazard protection during the time of the study is well perceived.

**Table 4. Extent of readiness of the students in the College of Arts and Sciences in terms of Training on Disaster Preparedness**

| <b>Statements</b>                                                                                            | <b>WM</b> | <b>SD</b> | <b>Remarks</b> |
|--------------------------------------------------------------------------------------------------------------|-----------|-----------|----------------|
| 1.Training on first aids                                                                                     | 3.46      | 0.87      | High           |
| 2.Training on how to use fire extinguishers and other equipment as preventive measures                       | 3.68      | 0.99      | High           |
| 3.Training on the Dos and DONTs during disaster                                                              | 3.83      | 0.92      | High           |
| <b>Overall Mean = 3.56</b><br><b>Standard Deviation = 0.950</b><br><b>Verbal Interpretation = Very Aware</b> |           |           |                |

Legend:

| <b>Scale</b> | <b>Range</b> | <b>Remarks</b>  | <b>Verbal Interpretation</b> |
|--------------|--------------|-----------------|------------------------------|
| 5            | 4.20-5.00    | Very High       | Extremely Aware              |
| 4            | 3.40-4.19    | High            | Very Aware                   |
| 3            | 2.60-3.39    | Moderately High | Moderately Aware             |
| 2            | 1.80-2.59    | Low             | Slightly Aware               |
| 1            | 1.00-1.79    | Very Low        | Not at All Aware             |

As evaluated by the students in the College of Arts and Sciences to a *great extent*, the student's training on the DOs and DONTs during disaster with ( $M = 3.83$ ,  $SD = 0.92$ ) and training on how to use fire extinguishers and other equipment as preventive measures with ( $M = 3.68$ ,  $SD = 0.99$ ). It is also observed to *very aware*, the item with the lowest rating was in the training on first aids with ( $M = 3.46$ ,  $SD = 0.87$ ).

The overall mean of 3.56, standard deviation of 0.950, indicates the extent of readiness of the students in terms of Training on the Disaster Preparedness have a remark of *high* and verbally interpreted as *great extent*. The finding shows that the readiness of the students in terms of training on the disaster preparedness during the time of the study is very evident.

**Table 5. Extent of readiness of the students in the College of Arts and Sciences in terms of Facilities for Disaster Awareness**

| <b>Statements</b>                                                                                              | <b>WM</b> | <b>SD</b> | <b>Remarks</b> |
|----------------------------------------------------------------------------------------------------------------|-----------|-----------|----------------|
| 1.Fire alarms installed in different places                                                                    | 3.60      | 0.93      | High           |
| 2.Enough fire extinguishers installed at sensitive places like library, laboratories, canteen, etc             | 3.73      | 0.98      | High           |
| 3.Poster/signage on how to apply first aid in case of emergency                                                | 3.65      | 0.95      | High           |
| 4.Safe floors, stairways, windows and railings                                                                 | 3.68      | 1.02      | High           |
| 5.Protocols to be followed on case of emergencies                                                              | 3.86      | 0.92      | High           |
| <b>Overall Mean = 3.69</b><br><b>Standard Deviation = 0.991</b><br><b>Verbal Interpretation = Great Extent</b> |           |           |                |

Legend:

| <b>Scale</b> | <b>Range</b> | <b>Remarks</b>  | <b>Verbal Interpretation</b> |
|--------------|--------------|-----------------|------------------------------|
| 5            | 4.20-5.00    | Very High       | Extremely Aware              |
| 4            | 3.40-4.19    | High            | Very Aware                   |
| 3            | 2.60-3.39    | Moderately High | Moderately Aware             |
| 2            | 1.80-2.59    | Low             | Slightly Aware               |
| 1            | 1.00-1.79    | Very Low        | Not at All Aware             |

On the evaluation done by the students for the great *extent*, the student's protocols to be followed in case of emergencies with ( $M = 3.86$ ,  $SD = 0.92$ ) and enough fire extinguishers installed at sensitive places like library, laboratories, canteen, etc with ( $M = 3.73$ ,  $SD = 0.98$ ). Although observed to *very aware*, the item with the lowest rating was in the fire alarms installed in different places with ( $M = 3.60$ ,  $SD = 0.93$ ).

The overall mean of 3.69, standard deviation of 0.991, indicates the extent of readiness of the students in line with Facilities for Disaster Awareness have a remark of *high* and verbally interpreted as *very aware*. The finding shows that the readiness of the students in terms of facilities and disaster awareness during the time of the study is confirmed.

**Table 6. Significant effect of the DRR to the readiness of the students in the College of Arts and Sciences and a basis for the establishment of student center**

| <b>Hazards</b>  | <b>Readiness of the Students</b>         | <b>t-value</b> | <b>p-value</b> | <b>Analysis</b> |
|-----------------|------------------------------------------|----------------|----------------|-----------------|
| Natural Hazards | <i>Evacuation Process</i>                | 44.880         | 0.000          | Significant     |
|                 | <i>Hazard Protection</i>                 | 37.633         | 0.000          | Significant     |
|                 | <i>Training on Disaster Preparedness</i> | 43.289         | 0.000          | Significant     |
|                 | <i>Facilities for Disaster Awareness</i> | 42.326         | 0.000          | Significant     |
|                 | <i>Evacuation Process</i>                | 24.068         | 0.000          | Significant     |

|                       |                                          |        |       |             |
|-----------------------|------------------------------------------|--------|-------|-------------|
| Global Viral Diseases | <i>Hazard Protection</i>                 | 19.297 | 0.000 | Significant |
|                       | <i>Training on Disaster Preparedness</i> | 22.781 | 0.000 | Significant |
|                       | <i>Facilities for Disaster Awareness</i> | 22.865 | 0.000 | Significant |
| Man-made Hazards      | <i>Evacuation Process</i>                | 38.839 | 0.000 | Significant |
|                       | <i>Hazard Protection</i>                 | 32.286 | 0.000 | Significant |
|                       | <i>Training on Disaster Preparedness</i> | 37.301 | 0.000 | Significant |
|                       | <i>Facilities for Disaster Awareness</i> | 36.723 | 0.000 | Significant |

Table 6 shows the significant effect of the DRR to the readiness of the students in the College of Arts and Sciences and a basis for the establishment of student center

The hazards that affect the readiness of the students includes *Evacuation Process*, *Hazard Protection*, *Training on Disaster Preparedness* and *Facilities for Disaster Awareness*.

The Natural Hazards for *Evacuation Process* ( $t=44.880$ ,  $p=0.000$ ), *Hazard Protection* ( $t=37.633$ ,  $p=0.000$ ), *Training on Disaster Preparedness* ( $t=43.289$ ,  $p=0.000$ ), and *Facilities for Disaster Awareness* ( $t=42.326$ ,  $p=0.000$ ), are significant at given probability level. This means that the DRR in terms of Natural Hazards has a direct effect to the readiness of the students. And the Global Viral Diseases for *Evacuation Process* ( $t=24.068$ ,  $p=0.000$ ), *Hazard Protection* ( $t=19.297$ ,  $p=0.000$ ), *Training on Disaster Preparedness* ( $t=22.781$ ,  $p=0.000$ ), and *Facilities for Disaster Awareness* ( $t=22.865$ ,  $p=0.000$ ), are significant at given probability level.

This means that the DRR in terms of Global Viral Diseases has a direct effect to the readiness of the students.

While the Man-made Hazards for *Evacuation Process* ( $t=38.839$ ,  $p=0.000$ ), *Hazard Protection* ( $t=32.286$ ,  $p=0.000$ ), *Training on Disaster Preparedness* ( $t=37.301$ ,  $p=0.000$ ), and *Facilities for Disaster Awareness* ( $t=36.723$ ,  $p=0.000$ ), are significant at given probability level. This means that the DRR in terms of Man-made Hazards has a direct effect to the readiness of the students.

Based on the data, it is shown that there is significant effect of the DRR to the readiness of the students in the College of Arts and Sciences and a basis for the establishment of student center at 0.05 level of significance. There is no significant effect of the DRR to the readiness of the students in the College of Arts and Sciences and a basis for the establishment of student center” is rejected, it can infer that there is “a significant” effect between them.

## CONCLUSIONS AND RECOMMENDATIONS

Based from the findings of the study, it was concluded that students from the College of Arts and Sciences has the ability and knowledge on DRR awareness as shown in all the tables presented it is assumed that natural hazards, global viral diseases and man-made hazards have significant effect on the readiness of the students.

The university may further enhance its commitment as a social institution to consider a combination of various inputs, such as specific DRR training, first aid-courses, hazard mapping of the university.

The University may consider to include Disaster Risk Management as mandated institutional course and be part of the Syllabi content specifically in Social Science classes.

That DRR Trainings and Workshops be a requirement for approval of all University clubs, organizations, societies, and associations.

The College of Arts and Sciences may be an exponent on the DRR related projects and activities since it is one of the thrusts of the college in the extension program.

Further studies to be conducted to likewise investigate the awareness of the student-respondents on the participation of other students across colleges for the university to carry its goals/objectives towards DRR.

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