Disaster Preparedness of Employees and Students in an Asian Private University

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Abstract – *This study sought to determine the disaster preparedness of employees and students in an academic institution. It evaluated the preparedness of one Higher Education Institution in the Philippines in terms of planning, conveniences and availability of equipment, and implementation of disaster plan. It also assessed the psychological preparedness of personnel and students in terms of knowledge and management of the external situational environmentt, anticipation, awareness and management of one's psychological response. Additionally, it compared the responses of the two groups of respondents and lastly, it proposed plan of action on how to improve the institution's preparedness towards disaster. Results revealed that the institution is moderately prepared as to planning while greatly prepared in terms of conveniences and availability of equipment and implementation of disaster plan. There are notable differences on the psychological preparedness of the personnel and students as to knowledge and management of the external situational environmentt, anticipation, awareness and management of one's psychological response. Lastly, the personnel and students' knowledge and the management of the external situational environmentt, anticipation, awareness are highly significant to management of one's psychological response. Thereby, an action plan is proposed to enhance preparedness of the institution towards disaster. Likewise, reorientation and emergency drill may be conducted periodically to make everyone more resilient in the face of everyday crises, and better able to deal with the psychological impact in the event of disaster. Physical and Facilities Management Office may facilitate rescue and first aid training every semester to prepare personnel and students in response to disaster.*

Keywords – *Disaster, Physical Preparedness, Psychological Preparedness*

INTRODUCTION

Disaster comes when it is least expected. It is a serious disruption of the functioning of the community or a society involving widespread human, material, economic, or environmental losses and impacts which exceeds the ability of the affected community or society to cope using its own resources.

It is often described as a result of the combination of; the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences [1].

Geographically, Asia is the continent with highest toll of natural disasters, and the Philippines is the most disaster-prone country on earth, according to a study made by the Center for Research and Epidemiology Disasters, whether it's volcanic eruptions, earthquakes, or massive flooding from super typhoons, not a year goes by wherein the Philippines experience at least one type of natural disaster [2].

Batangas Province which is located in the southern part of Luzon is one of those places with active volcano and is surrounded by open seas. Taal volcano which can be found in Batangas Province is one of the active volcanoes in the world. It is always monitored for possible eruption. The University under study has a population coming from different areas in the province, and the region and even students from other countries who need to be knowledgeable and prepared whenever emergency and disaster strike.

Every year, suspension of classes during the strike of disaster happens, but there are instances that these happen late wherein most of the students and employees have already left their homes going to school and bumped into the whip of disaster.

As such, disaster preparedness is vital to everyone. Disaster preparedness is the knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from the

impacts of likely, imminent, or current hazard events or conditions [3].

It is a general view, that it is widely acknowledged that schools play an important role in awareness amongst students, teachers and parents because the more a student is aware of hazards and realistic risks, the more potential there is for the adults to be educated through the child sharing knowledge at home [4]-[6].

Correspondingly, disaster preparedness efforts focus predominantly on human behaviors. Human behaviors derive from diverse factors that range from people's risk perception to lessons from direct and indirect past experiences of disaster events and emergencies through to interaction between individuals and environment. These factors interact to influence the nature and level of people's disaster and emergency preparedness [7].

Being directly involved in any potentially life-threatening emergency situation can be genuinely terrifying. When people are under severe stress, they are usually not able to think as clearly as usual and this can affect decisions and reactions. These are normal, although not always helpful responses to a possibly life-threatening situation.

During disaster, people are very quick to take care of what needs to be done, at the same time people experience disbelief. This allows people to keep working for survival but there are feelings that may arise if they don't know the proper approach to such event. Feelings of panic, despair, uncertainty, disorientation and of course cooperation came up. These feelings are very natural reactions to an unusual situation. The full force of the emotional reactions often hit after the disaster has passed and cleaning up begins. That is when exhaustion, grief, desperation and depression may set in. It is important to manage these feelings so that acute stress will be surmounted [8].

It is also evident that despite the growing experiences of hazard events, the growing incidence of disaster related losses indicates that the experience of disaster per se is not acting to trigger greater mitigation or preparedness activities in at-risk populations. While it is generally agreed that preparedness at an individual, community and organizational levels is important for ameliorating hazard impacts, it is also noted that there is notable gap in the constant exercise of preparedness plan.

The researcher finds this study timely and significant because every year disaster has always occurred and academic family including the community it served must be prepared for it. Furthermore, the researcher believed that the people must not be only after for the preparation of external environment situation but rather must also know how to manage their psychological response towards emergency and disaster. Moreover, this study can also help identify the potential risks and hazards that may affect the lives of Batangueños, thus, planning and preparation can be done before disaster may happen.

OBJECTIVES OF THE STUDY

This study determined the disaster preparedness of one Asian University in terms of planning, conveniences and availability of equipment, and implementation of disaster plan. It also assessed the psychological preparedness of personnel and students in terms of knowledge and management of the external situational environment, anticipation, awareness and management of one's psychological response. Additionally, it sought comparison and relationship between the responses of the two groups of respondents. Lastly, it proposed a disaster preparedness action plan.

METHODS

This study utilized a descriptive survey research design which is comparative in nature. This design is considered most appropriate to determine the preparedness of University personnel and students towards disaster as it compares and relates their responses on the variables being examined.

Participants of the Study

The respondents of the study were the employees and students for the first semester school year 2016-2017.

The respondents were the fifty-three employees who are both regular and contractual from teaching and non-teaching personnel and two hundred thirteen students who were selected from the different colleges. Using 30% margin of error, the respondents were selected using stratified random allocation.

Data Gathering Instruments

A modified questionnaire on Physical Preparedness by Fatma Ozmen of the University of Firat, Turkey and questionnaire for Psychological Preparedness for Disaster Threat Scale (PPDTS) by Hannah R. Zulch of Griffith University in Australia were used to gather data. The overall PPDTS scale showed excellent scale reliability, with a Cronbach's alpha value of α= .92. Both subscales showed excellent reliability of Cronbach's α value of .92 and .87.

The instrument comprises of two parts: Part 1 is all about planning, conveniences and equipment, implementation, and integration and culture building, while Part 2 is merely on knowledge and management of the external situational environment, anticipation, awareness and management of one's psychological response.

Data Gathering Procedures

The management was given a letter to seek an approval to conduct the study with their constituents. The purpose and the content of the instrument was explained to the respondents prior to answering it. Likewise, they were assured of the confidentiality of the data they provided. Questionnaires were distributed to the respondents through each college wherein the researcher asked the permission and help of the department heads. After the distribution of questionnaires, they were retrieved tallied and analyzed.

Data Analysis

Data gathered were analyzed using descriptive statistics. Weighted mean was used to determine the respondents' physical and psychological prepared towards disaster. To establish the relationship of knowledge and management of the external situational environment, and the anticipation, awareness and management of one's psychological response *chi square* was used. Likewise, *independent sample t test* was also employed to compare the responses of the two groups of respondents.

RESULTS AND DISCUSSION

Table 1. Disaster Preparedness with Regard to Physical Aspect

Indicators	Mean	V.I.	Rank
1. Planning	3.49	To a Moderate Extent	1
2. Conveniences and Availability of Equipment	3.58	To a Great Extent	3
3. Implementation of Disaster Plan	3.58	To a Great Extent	5

Legend: 3.50 – 4.00 = Implemented to a great extent; 2.50 – 3.49 = Implemented to a moderate extent; 1.50 – 2.49 = Implemented to a less extent; 1.00 – 1.49 = Not Implemented at all

Table 1 shows that the school's disaster preparedness plan is implemented to a moderate extent as it obtained a composite mean of 3.49. It can be delineated from this result that though disaster preparedness is part of the planning of the university, still, an intensive preparation must be considered so as to prevent chaos during the unexpected event.

The department head ensures the inclusion of some subjects in the curriculum that teach the way of protection towards disasters. It is mandated by the curriculum in all professions that emergency and disaster must be part of the course content. In this case, disaster preparedness became a part of National Service Training Program II for all college students. Hence, its regular review and evaluation are conducted to see to it that it will be properly implemented among colleges. Instructors who are teaching this subject underwent training and seminars to make them properly equipped with the teaching methodologies about disaster management.

Evacuation route is posted in every classroom but rescue plan was least disseminated among faculty members and personnel. It is the Physical Facilities and Maintenance Office (PFMO) staff that has the rescue plan, though it is discussed during the earthquake drill but never handed a soft copy of the rescue plan among University personnel.

Kahn [9] noted that it is necessary to ensure that the disaster response team leader distributes the plan in draft and final forms, to the disaster and response team members and facilities and maintenance and security departments. All versions of the plan must be distributed to all departments. As such, the disaster response team members should keep a copy of the most up-to-date plan. There is also a need to update the disaster plan regularly [10].

Even if the school had phases of disaster mitigation plan, there is still a need to practice the preparation to its fullest. In the recent earthquake that happened in April 2017, there were personnel and students who were present in the buildings of the institution and it was observed that panic and commotion took place. Most of the students were shouting and running toward the stairs even on the vent of shaking brought about by the earthquake.

As the institution plans for the response to disaster, an emphasis on its stages should be taken into consideration because 'disaster management is a multi-stage process which evolves in prevention, preparation, response and recovery. Prevention is primarily focused on taking precautionary measures prior to disaster to reduce its scope. Preparation phase is centered on

developing a plan to approach events after the incident crops up. Response happens during disaster where the aim is to save lives, reduce victims' suffering and alleviate economical losses. Whereas, recovery phase is when rehabilitation takes place after disaster. As such, there must be constant planning on the before, during, and after of disaster' [11].

The disaster preparedness of the school with regards to conveniences and availability of equipment is implemented to a great extent with a composite mean of 3.58. The location of the emergency equipment during disaster is accessible among users. These are strategically located at the different buildings in each campus and even in the different departments.

The presence of alarm systems, megaphones, whistles, etc. is an indication that the school has emergency equipment which is part of disaster and emergency preparedness. This is commonly used during emergency evacuation drill.

The moveable goods are fixed to prevent the fall in case of disaster. The maintenance personnel see to it that all equipment and other things that have a higher risk to fall are well fixed and monitored. Likewise, faculty and personnel have monitoring logbooks in each classroom, laboratories and offices. They reported hanging equipment that may cause harm among users.

As part of the plan, it is a routine practiced especially for those personnel who are assigned at laboratories. They are cautious that there are chemicals in the laboratories that support combustion in case of spill or any incidents.

Department of Education Disaster Risk Reduction Manual advised to store breakable items, harmful chemicals and flammable materials inside the classrooms in the lowermost shelves and secure firmly and there is a need to install latches on drawers and cabinets [12].

A rescue plan of the institution was designed based on the physical and strategic location of each building and the open spaces near to it. The open spaces near the Mabini building of the school and the People's community park are the area where the students and personnel are advised to go with during the event of disaster. As such, the rescue plan is constantly evaluated, debriefing is regularly done and consultation with NDRRMC of Batangas province had been sought to assure its conciseness.

This is true to what Benthien & Jones [13] accentuate that schools often include building evacuation as a part of their earthquake drill, since assembling in a common area after an earthquake will be the best way to account for students, prioritize first aid and triage, and conduct search and rescue.

Furthermore, 'detection and alarm systems must be working properly and fire extinguishers are regularly refilled. Other fire suppression and control equipment is regularly tested and maintained secure, items that can kill or injure or block exits like overhead lighting, bookshelves, hazardous chemicals, things blocking exits, etc., and lastly, noting that all exit doors should open outwards' [11].

This table further discloses that the disaster preparedness of the school with regards to implementation of disaster plan is implemented to a great extent as it obtained a composite mean of 3.58. It is noteworthy that the school is doing its best to make the institution prepared in an event that no one knows when to occur through regular monitoring and practice of the disaster plan.

Drills every semester is conducted to make personnel and students accustomed with the disaster plan. Each building has designated marshals that will command people on the exit route and will verify in each room whether the area is clear or not. The committee of the response group designates a safe place where to evacuate in the event of disaster. They also conduct post evaluation talk with the members of the academic community as to what they have observed during the drill.

The department head ensures the participation of the teachers in the programs towards the disaster preparedness. The support of the department heads during the practice of the implementation of disaster plan is a key in doing well the preparation. Nonetheless, teachers who have less vitality and strength must be assigned in a room near the evacuation route.

As what Esguerra [14] is pointing out in his article that regular earthquake drills must be conducted in schools and hospitals, where the most vulnerable citizens are, so that students, administrators, operators, and personnel would know the proper response and actions to take in cases of temblors and other hazardous phenomenon.

School personnel and students are continuously trained on protection, evacuation, and rescue issues as deemed by the respondents. Aside from the drills which are periodically conducted, the presence of technology like WIFI zone and the use of gadgets make personnel especially the students to be updated on how they will be protected in times of disaster.

Furthermore, the institution made necessary efforts that is devoted for strengthening the school buildings. New buildings in different campuses were built in three

to five storey which follow standard procedure set by the LGU engineering office, thereby, the administration is certain on the strength of its structure. The continuous implementation on enrichment of knowledge and skills of the academic community necessitate monitoring and evaluation.

As such Disaster Management Training must be conducted to help improved the technical skills of the community people. It aims to encourage an exchange of experience and knowledge and the creation of networks amongst people. With this, Basic life support (BLS) must be conducted which is use for victims of life-threatening illnesses or injuries until they can be given full medical care at a hospital. It can be provided by trained medical personnel, including emergency medical technicians, paramedics, and by laypersons who have received BLS training. BLS is generally used in the pre-hospital setting, and can be provided without medical equipment [15].

Table 2 shows the respondents' preparedness towards emergency and disaster in terms of their knowledge and management of the external situational environment. It can be gleaned from the table that all items yielded a highest verbal interpretation of *true of me*. This clearly proves that both personnel and students of the university have knowledge on disaster preparedness.

The aforementioned findings are quite similar as to the results of the study conducted by Rojo, et al. [16] in ensuring the availability and adequacy of basic and essential needs at the center(s) immediately prior to actual evacuation, such as, but not limited to, water supply, back-up power supply, food, medicines, sleeping mats, blankets, pillows and gender sensitive sanitary facilities.

Personnel know what to look out for in their home and work place if an emergency weather situation develop and they are familiar with the disaster warning system messages used for extreme weather events as these two top among the *true of me* indicators. Most of the University personnel are married and have children, that is why they know what to watch out during emergency. They are alert on what is happening in their surroundings as well with the warning signals in the event of disaster.

People who respond to disasters are finding social media indispensable. The utility of social media goes far beyond reassuring loved ones in disasters.

Emergency workers and volunteers are using social media to find people in need, map damaged areas, organize relief efforts, disseminate news and guidance, attract donations, and help prepare for future disasters [17].

Table 2. Preparedness in terms of Knowledge, Management of the External Situational Environment

Knowledge, Management of the External Situational Environment	Personnel		Students	
	True of Me %	Not True of Me %	True of Me %	Not True of Me %
1. I am familiar with the severe storm or cyclone preparedness materials available to me.	81.1	18.9	80.8	19.2
2. I know which preparedness measures are needed to stay safe in a very severe storm or cyclone situation.	77.4	22.6	79.3	20.7
3. I know how to adequately prepare for the forthcoming storm or cyclone season.	73.6	26.4	84.5	15.5
4. I know what to look out for in my home and work place if an emergency weather situation should develop.	84.9	15.1	84.5	15.5
5. I am familiar with the disaster warning system messages used for extreme weather events.	84.9	15.1	77.5	22.5
6. I am confident that I know what to do and what actions to take in a severe weather situation.	75.5	24.5	73.7	26.3
7. I would be able to locate the severe storm or cyclone preparedness materials in a cyclone warning situation easily.	75.5	24.5	62.4	37.6
8. I am knowledgeable about the impact that very severe storms or cyclones can have on my home and place of work.	81.1	18.9	77.9	22.1
9. I know what the difference is between a cyclone warning and a cyclone watch situation.	83.0	17.0	63.8	36.2
10. I am familiar with the weather signs of an approaching storm or cyclone.	81.1	18.9	78.9	21.1

Third in the *true of me* item is that employees know what is the difference between cyclone warning and cyclone watch situation. Since Batangas City is nearby coastal areas, most of the personnel are aware with cyclone signals and warnings in which they should be watchful of because of the catastrophe it may bring to them. Commonwealth of Australia [18] differentiates cyclone watch from cyclone warning as to its occurrences and how people should be reminded of with their preparation. Cyclone watch is expected to affect coastal communities within 48 hours, but not expected within 24 hours while cyclone warning is affecting or is expected to affect coastal communities within 24 hours.

Whereas, among the highest *not true of me* indicators are that the personnel are not that confident that they know what to do and what actions to take in a severe weather situation and would be able to locate the severe storm or cyclone preparedness materials in a cyclone warning situation easily. It is but normal that whenever a person faces a critical situation like disaster, they will be uncertain on the things that they will take hold of and become undecided on what to do.

Also, some of the personnel do not know which preparedness measures are needed to carry out in a very severe storm or cyclone situation. Though most of the employees know where to evacuate during disaster, there are some who are perplexed on where safe places they will go. Henry [19] pointed out that everyone must be familiar with the emergency or disaster plan at home and any workplace. The presence of evacuation plan routes provides a better information in the workplace where to meet-up during disaster. The location of safe place is usually a clear field quite far from buildings and trees. The presence of signage is an important tool for person who misses information about proper evacuation during disaster.

On the other hand, students know how to adequately prepare for the forthcoming storm or cyclone season and they also know what to look out for in their home and work place if an emergency weather situation which is verbally interpreted as *true of me*. The news in the television and in prints keep the students updated with what to do in cases of disaster. The discovery channel and social media where most of the students are inclined with also provides informative updates about risk reduction and disaster management.

'Schools play an important role in awareness amongst students, teachers and parents because the more a student is aware of hazards and realistic risks, the more potential there is for the adults to be educated through the child sharing knowledge at home' [20]-[22].

The highest among the *not true of me* indicator is the students have apprehension on what is the difference between a cyclone warning and a cyclone watch situation. Though the students know cyclone or tropical depression, they are not that familiar with the tropical cyclone warning and tropical cyclone watch. They are not that aware of the time of occurrence and possible severity of it.

It is also noted that for students, it is not true to them that they will be able to locate the severe storm or cyclone preparedness materials in a cyclone warning situation easily. Students are not included in the disaster orientation that is why they don't know the location of emergency materials needed during the event.

Lastly, some students are not that confident that they know what to do and what actions to take in a severe situation. These could be freshmen students and transferees whom are not yet oriented with disaster evacuation and haven't attended emergency drill.

According to Lindell, Prater and Perry [23] 'people act in what they believed is their best interest, given their limited understanding of the situation. Those individual who do not know what to do during disaster may flee in panic, wander aimlessly in shock as they cannot protect themselves nor others. They are also incapable of protecting their things and properties from damages.

Based on the overall results of Table 3, it can be gleaned that all items garnered a highest verbal description of *true of me* which clearly note that respondents have anticipation, awareness and management as regards to their psychological response concerning disaster. These findings affirmed the result of the study conducted by Reser [24] noted that moderately and highly anxious individuals for whom the cyclone season is a source of considerable concern and anxiety, said anxiety is often unrecognized by them and a common response is to simply think about other things or stop doing whatever preparedness activity they may have commenced.

Among the top indicator in the *true of me* for the personnel are they think that they are able to manage their feelings pretty well in difficult and challenging situations. Personnel figure out that they will be able to deal with the fear and panic feeling that is commonly experienced by people who are trapped in a difficult situation. Thereby, anticipated situation can be overcome through a series of debriefing simulation which must be conducted during the disaster drill.

Table 3. Preparedness in terms of Anticipation, Awareness and Management of One's Psychological Response

Anticipation, Awareness and Management of One's Psychological Response	Personnel		Students	
	True of Me %	Not True of Me %	True of Me %	Not True of Me %
1. I think I am able to manage my feelings pretty well in difficult and challenging situations.	90.6	9.4	81.7	18.3
2. In a severe storm or cyclone situation I would be able to cope with my anxiety and fear.	73.6	26.4	71.8	28.2
3. I seem to be able to stay cool and calm in most difficult situations.	79.2	20.8	74.6	25.4
4. I feel reasonably confident in my own ability to deal with stressful situations that I might find myself in.	81.1	18.9	75.1	24.9
5. When necessary, I can talk myself through challenging situations.	84.9	15.1	81.2	18.8
6. If I found myself in a severe storm or cyclone situation I would know how to manage my own response to the situation.	75.5	24.5	81.2	18.8
7. I know which strategies I could use to calm myself in a severe storm or cyclone situation.	77.4	22.6	85.0	15.0
8. I have a good idea of how I would likely respond to an emergency situation.	84.9	15.1	83.6	16.4

This allows people to keep working for survival but there are feelings that may arise if they don't know the proper approach to such event. Feelings of panic, despair, uncertainty, disorientation and no cooperation came up. These feelings are very natural reactions to an unusual situation. That is when exhaustion, grief, desperation and depression may set in, it is important to manage these feelings so that acute stress will be surmounted.

Staying calm by talking to oneself amidst difficult times is a good practice of the personnel. Thinking of what to do and how to respond during emergency situation is part of the orientation of personnel and students during emergency drill.

This finding coincides with what Australian Psychological Society [7] advised that being cooler and calmer and help people be prepared psychologically for what is happening. It is unrealistic to think that people can be fully emotionally prepared for such stressful and confronting situations as severe natural disasters but being psychologically prepared can help in coping with the stress of the unfolding situation and can help to reduce the distress brought about by catastrophes.

While, the highest in the *not true of me* indicator is that the personnel during a severe storm or cyclone situation would be able to cope with anxiety and fear. Personnel perceive that they will be experiencing difficulty coping with the anxiety and fear during the event of disaster. Anyone whom safety and security is at risk may become nervous and bothered, but the important thing to remember is to have the presence of mind during this event.

Center for Disease Control [25] corroborates with this finding in a way that they acknowledge that stress, anxiety, grief, and worry during and after a disaster is a natural feeling of an individual. Everyone will react differently and feelings will change throughout. It is important to notice and accept how one feel. Taking care of emotional health during an emergency helps individual to think clearly and reacts to the urgent needs to protect oneself and others during an emergency. Some of the personnel are middle aged and quite unsure whether they can respond or not in the occurrence of disaster. It is also commonly observed that those younger people act quickly compare to them.

On the other hand, it is *not true* for the students that during severe storm or cyclone situation, they would be able to cope with their anxiety and fear being the top among the mentioned indicator. There are also students who perceive that it is *not true* to them that they will be able to stay cool and calm in most difficult situations, and also they feel reasonably not confident in their own ability to deal with stressful situations that they might find within themselves.

A number of students consider difficult situations as an alarming one wherein they will be having hard time to stay calm even the situation is not. Some of them may become fearful during the catastrophic episode and do not discern what to and how to act upon it especially the younger ones.

An individual is biologically created to be reactive, rather than thoughtful or critical in thinking. As a result, panic makes one behave in an emotional manner rather than a thoughtful manner, as one react emotionally to the danger facing him. Impulsiveness and reactive behavior might save one's life, there is a need to deliberately adjust behavior to accommodate the kind of threat and emergency one is encountering [26]. While, Smith, Robinson, & Segal [27] asserted being alert and having presence of mind during stressful situation will help individual to decide and act upon it.

Table 4. Test of Difference on Psychological Preparedness towards Disaster

Indicators	group	Std. Deviation	p-value	V.I
Knowledge and management of the external situational environment	personnel	0.2769	0.915	Not Significant
	student	0.2513		
Anticipation, awareness and management of one's psychological response	personnel	0.2525	0.047	Significant
	student	0.1957		

Legend: Significant at p-value < 0.05
   V.I. Verbal Interpretation

Table 4 presents the difference in responses on the preparedness towards disaster of the University personnel and students. As seen from the result, only anticipation, awareness and management of one's psychological response shows significant difference since the obtained p-value of 0.047 is less than 0.05 alpha level, thus, the University personnel and students have different perception as to the mentioned variable.

It denotes that the respondents have different level of preparedness as to psychological response. Students may be highly fearful, anxious and hyperactive compared to personnel who can better control feelings and emotions in times of disaster. On the other hand, the presence of disaster for personnel can affect their behavior, ability to function, and overall sense of wellbeing. Guilt and frustration can also be the psychological response of personnel when they think of their inability to assist and help other family member during disaster. Personnel are more mature in dealing with stresses in life compared to students who further need guidance in terms of response to crises. Personnel can contain their feelings and reaction than students who seem to be impetuous when disaster strikes. However, the effects of traumatic events vary from individual to individual depending on their resiliency and temperament.

Bell [28] stressed that individual responses to disaster varies; commonly, anxiety is often unrecognized as such, but is nonetheless distressing, and a common response for different individuals is to simply think about other things or stop doing whatever preparedness activity they may have commenced.

Table 5. Relationship between Knowledge and Management of the External Situational Environment and Anticipation, Awareness, & Management of One's Psychological Response

Indicators	Personnel			Students		
	r-value	p-value	V.I.	r-value	p-value	V.I.
Knowledge and Management of the External Situational Environment	0.534	0.000	HS	0.393	0.000	HS
Anticipation, Awareness and Management of One's Psychological Response						

Legend: Significant at p-value < 0.05
   V.I.- Verbal Interpretation; HS – Highly Significant

Table 5 illustrates the relationship between the University and thepersonnel and students' knowledge and management of the external situational environment and anticipation, awareness and management of one's psychological response.

As to personnel, it was observed that the computed r-value of 0.534 indicates positive correlation and the resulted p-value of 0.000 is less than 0.05 which connotes highly significant relationship. Correspondingly, it is noted that for the students, the computed r-value of 0.393 indicates positive correlation and the resulted p-value of 0.000 is less than 0.05 which means that there is also a highly significant relationship between the knowledge and management of the external situation, and anticipation, awareness and management of one's psychological response.

It implies that the more positive they are prepared in terms of knowledge and management of the external situational environment, the more that they practiced anticipation, awareness and management of one's psychological response. University personnel and students' physical preparedness is directly related to their psychological preparedness towards disaster.

This further signifies that the physical preparedness affects psychological response towards disaster. The less prepared individual responds inappropriately during times of traumatic events and crises. It also denotes that if the person is psychologically prepared, he/she can respond well and with confidence during

disaster and can assists others to act more coolly and calmly.

This finding is similar to what Morrissey and Reser [26] asserted in their study that heightening the salience and need for natural disaster preparedness, without providing psychological advice and strategies, can in fact be neutralizing or even counterproductive with respect to individual and community preparedness. He also emphasized that It is arguable that managing one's own psychological response to a disaster preparedness message or warning, or the emotional response of others, is at least of equal importance to actual physical preparedness advice, and that the absence of such advice substantially reduces the effectiveness of the physical preparedness advice and recommendation.

Disaster Preparedness Action Plan

Based on the result of the study, a Disaster Preparedness Action Plan is proposed to enhance preparedness of University personnel and students towards disaster. It is imperative that all members of academic family must be one hundred percent prepared towards disaster, as this may occur anytime especially when it is least expected.

The focus of this action plan is physical and psychological preparedness because, it is considered necessary for the individual to be prepared in times of disaster as he or she knows what to do in times of devastating event, and thereby they will be more in control of the situation.

CONCLUSION AND RECOMMENDATION

University personnel are physically prepared for disaster as to planning, conveniences and availability of equipment, and implementation of disaster plan. Likewise, they are psychologically prepared and vigilant of the possible effects of disaster by having a good idea of how they would likely respond to an emergency situation and seem to be able to stay cool and calm in most difficult situation. Most of the students are adolescent who are more fearful and anxious with disasters, whereas, personnel as an adult can control more of their feelings and are more experienced in terms of life stresses. Therefore, it is vital that psychological preparedness be factored in emergency plans. The more prepared the University personnel and students as to knowledge and management of the external situational environment, the more they have positive anticipation, awareness and management of one's psychological response to disaster.

A disaster preparedness action plan is hereby formulated to enhance preparedness of the University both physically and psychologically. Reorientation and different emergency drills must be conducted periodically to make all members of organization become highly aware in the face of everyday crises, and better able to deal with the psychological impact in the event of disaster. The Physical and Facilities Management Office of the University may facilitate training on rescue and first aid every semester in collaboration with Nursing department to prepare personnel and students in response to disaster. It is important that University disaster risk management must include the psychological health issues in the planning process. For students, there is a need to incorporate psychological health approaches in disaster preparedness, thereby, not losing hope for positive future. The present study may be replicated using other variables, like impact of disaster to different age group, resiliency and adaptation, or using triangulation approach.

REFERENCES

[1] The LawPhil Project, Arellano Law Foundation (n.d.) Retrieved on January 12, 2017 from https://lawphil.net/statutes/repacts/ra2010/ra_10121_2010.html

[2] Mendoza, V. (2011). "New Disaster Risk-reduction Law Strengthens Self-Reliance through Disaster Preparedness". The Palawan Times. Retrieved on August 28, 2016 from http://palawantimesnews.wordpress.com.

[3] National Disaster Risk Reduction Management Plan for 2011-2028 (2011) Retrieved from www.ndrrmc.gov.ph/attachments/article/41/NDRRM_Plan_2011-2028.pdf

[4] Paton, D., & Johnston, D. (2001). Disasters and communities: vulnerability, resilience and preparedness. *Disaster Prevention and Management: An International Journal*, *10*(4), 270-277.

[5] Shaw, R. & Nakagawa, Y. (2004). Social capital: A missing link to disaster recovery. *International Journal of Mass Emergencies and Disasters*, *22*(1), 5-34.

[6] Rambau, T. S., Beukes, L. D., & Fraser, W. (2012). Disaster Risk Reduction through school learners' awareness and preparedness. *Jàmbá: Journal of Disaster Risk Studies*, *4*(1), 1-11.

[7] Australian Psychological Association (2017) Psychological Preparation for Natural Disasters. Retrieved on March 15, 2017 from http://www.psychology.org.au/publications/tip_sheets/disasters/

[8] University of Illinois Extension (2017). Emotional Reactions to Disasters. Retrieved on March 15, 2017 from

_____

https://web.extension.illinois.edu/disaster/facts/emotion.cfm

[9] Kahn, M. B. (2012). *Disaster response and planning for libraries*. American Library Association.

[10] Disaster and Emergency Preparedness-Guidance for School (n.d) Retrieved on May 26, 2017 from https://www.ifc.org/wps/wcm/connect/ /DisERHandbook.pdf

[11] Sector (n.d.) Stages of Disaster Management retrieved from http://www.fp7-sector.eu/?p=578

[12] Department of Education (2008) Disaster Risk Reduction Manual. Retrieved on December 28, 2016 from http://www.deped.gov.ph/sites/default/files/Disaster%20Risk%20Reduction%20 Resource%20Manual.pdf

[13] Benthien, M. & Jones, L. M. (2011). Preparing for a "Big One": the great southern California ShakeOut. *Earthquake Spectra*, 27(2), 575-595.

[14] Esguerra, Christian V. (December 31, 2011) Legarda Bats For Enforcement of Laws on Climate Change, Disaster Preparedness Philippine Daily Inquirer. Retrieved last August 24, 2016 from http://newsinfo.inquirer.net/120317/ legarda-bats-for-enforcement-of-laws-on-climate-change-disaster-preparedness.

[15] International Federation of Red Cross Red Crescent Society, (2010) International First Aid and Resuscitation. Retrieved from www.ifrc.org/Global/Governance/Policies/firstaid-policy-en.pdf

[16] Rojo, R., Pelonia,V., Buena, M., Tabuzo, M., Floranda, G., & Doros, E., (2012) Compendium of Disaster Preparedness and Response Protocols. Retrieved from www.dilg.gov.ph/PDF_File/reports.../DILG-Resources-2012611-823b814b1a.pdf

[17] Harrison, L., (2015) Social Media: Indispensable During Disasters. Medscape. Retrieved on July 10, 2017 from http://www.medscape.com/viewarticle/847183_3

[18] Commonwealth of Australia-Bureau of Meteorology (2017) Tropical Cyclone Warning Services. Retrieved on May 26, 2017 from http://www.bom.gov.au/cyclone/about/warnings/

[19] Henry, A., (2013) The Complete Guide to What To Do Before, During, and After a Disaster. Retrieved on June 26, 2017 from http://lifehacker.com/5976362/the-complete-guide-to-what-to-do-before-during-and-after-a-disaster

[20] Paton, D., & Johnston, D. (2001). Disasters and communities: vulnerability, resilience and preparedness. *Disaster Prevention and Management: An International Journal*, 10(4), 270-277.

[21] Shaw, R. & Nakagawa, Y. (2004). Social capital: A missing link to disaster recovery. *International Journal of Mass Emergencies and Disasters*, 22(1), 5-34.

[22] Rambau, T. S., Beukes, L. D., & Fraser, W. (2012). Disaster Risk Reduction through school learners' awareness and preparedness. *Jàmbá: Journal of Disaster Risk Studies*, 4(1), 1-11.

[23] Lindell, M. K., Prater, C., & Perry, R. W. (2006). *Wiley pathways introduction to emergency management*. John Wiley & Sons.

[24] Reser, J. P. & Morrissey, S. A. (2000). *Evaluation of a Psychological Education and Coping Intervention in the Context of Cyclone Preparedness and Warning Messages* Final Report to Emergency Management Australia for Natural Disaster Reduction (IDNDR) Project 17/96

[25] Center for Disease Control and Prevention (2016) Coping with a Disease or Traumatic Event. Retrieved last February 3, 2017 from https://emergency.cdc.gov/coping/families.asp

[26] Gross, G. (2015) Staying calm during emergency can save lives. Retrieved on May 3, 2017 from http://www.huffingtonpost.com/dr-gail-gross/staying-calm-during-an-em_b_7749812

[27] Smith, M., Robinson, L., & Segal, J., (2017) Traumatic Stress. Retrieved on May 27, 2017 from https://www.helpguide.org/articles/ptsd-trauma/traumatic-stress.htm

[28] Bell, P.A., Greene, T.C., Fisher, J.D. & Baum, A. (2000) *Environmental psychology:* Fifth Edition. New York: Harcourt College Publishers.

[29] Morrissey, S., & Reser, J. (2003). Evaluating the effectiveness of psychological preparedness advice in community cyclone preparedness materials. *Australian Journal of Emergency Management*, 18(2), 46-61.