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RESEARCH ARTICLE

AWARENESS OF LSPU-SC TOWARDS NATURAL DISASTERS SAFETY PRECAUTIONARY MEASURES AND MITIGATION.

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Abstract

This study aimed to determine the awareness of Laguna State Polytechnic University – Siniloan Campus towards natural disasters’ safety precautionary measures and mitigation. The researcher used descriptive research in finding the answers to the problems stated in the study. The study was composed of 384 respondents among the staff, faculty and students of LSPU – SC who experienced the natural disaster. The research instrument used was structured questionnaire checklist to determine the extent of information about the level of awareness of the staff, faculty and students of LSPU-SC towards natural disaster’s safety precautionary measures and mitigation. Upon the interpretation of the gathered data of the study, it was found out that the result of the said study that Laguna State Polytechnic University-Siniloan Campus was aware on the natural disasters safety precautionary measures and mitigation. The researcher recommends the institution to conduct frequent seminars and trainings about the natural disasters in order for the constituents to be more aware and knowledgeable about the things that must be done before, during and after the occurrence of all the natural disasters that will strike either in school or in home.

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Introduction:-

“Safety first” as majority stated. Every institution makes preparation for the preparedness of its constituents. Educational institutions such as schools, Colleges, and universities are annually conducting preparations such as drills, seminars to prepare their students for an unspeakable advent of natural disasters. Moreover, to impart and inform students for the safety precautionary measures they should apply for the strike or occurrence of natural disasters.

Natural disasters are naturally occurred in the environment that usually put an impact to people’s nature leading to monetary and biodiversity deteriorations to the extent of casualty escalations. Natural disasters can be enumerated as typhoon, flood, landslide, volcanic eruptions, earthquake, tsunami, tornado and cyclone that are hazardous to every creature.

Hazards become disasters only if vulnerable people and resources are exposed to them. People who live in poverty and adverse socio-economic conditions are highly vulnerable to disasters, especially those who live in river

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pathways and along the most hazard prone areas. This explains why some parts of the country are more prone to specific hazards than others; some parts are exposed to more hazards than others (NDRRMP, 2011).

The Laguna State Polytechnic University, especially Siniloan (Host) Campus is vulnerable to these natural disasters especially floods because of its proximity to Laguna Lake (country's largest lake) during its overflowing that was evidently shown when the Typhoon Ondoy, 2009 and Southwest Monsoon/Habagat, 2012 struck. Facilities, educational materials and other projects were also left damaged. Those scenarios show that natural disasters can affect anyone – ready or not, vulnerable or not. Institutionalizing the National Disaster Risk Reduction Management and Plan is mandated for every institution even to every person for the safety, protection and reduction of possible losses that a hazard can create – financial, economic, environmental, and human losses.

“If history repeats itself, and the unexpected always happens, how incapable must Man be of learning from experience?” (George Bernard Shaw). Therefore, human must be learned from his experiences to lessen the possibilities of duplication of occurred incidents and reduced the risk of having more accidents. Implementation and compliance to mitigation plan can limits the distraction to life associated with hazardous incidents. It upholds safe community equipped with appropriate technological and developmental advances as well as endorsing the abilities of protecting losses from hazards toward sustainable development through rehabilitation and recovery. Restoring and improving of damaged lifeline facilities, infrastructures, and livelihood and living conditions are the recovery efforts done by citizens after the occurrence of hazardous incident in accordance to the concept of “building back better” for sustainability.

This study aims to determine the level of awareness of Laguna State Polytechnic University – Siniloan (Host) Campus towards natural disasters' safety precautionary measures and mitigation.

Materials and Methods:

Research Design

This study was conducted to determine the level of awareness of the staffs, faculties and students of LSPU – Siniloan (Host) Campus towards natural disasters' safety precautionary measures and mitigation. Therefore, the most appropriate research design to use is the descriptive method of research. Descriptive research is concerned with the description of data and characteristics about a population. The main goal of this type is to describe the data, frequencies, similar statistical calculation and characteristics about what is being studied.

Subject of the Study

The respondents of this study are the staff, faculty and students of Laguna State Polytechnic University – Siniloan (Host) Campus who experienced the natural disasters to determine their level of awareness towards the natural disasters safety precautionary measures and mitigation being done in school and at their home.

Sampling Technique

The respondents of this study are determined using stratified random sampling technique.

The researcher purposely utilized the staff, faculty and students of Laguna State Polytechnic University – Siniloan (Host) Campus as respondents of the study.

Data Gathering Instruments

The researcher's main tool in this study is a structured questionnaire-checklist in gathering the research data needed in evaluating, analyzing and interpreting the extent of information about the level of awareness of the staff, faculty and students of LSPU-SC towards natural disasters' safety precautionary measures and mitigation.

The first part of the questionnaire focused on the demographic profile of the student-respondents such as Name, Sex, Age, Address, Civil Status, College, Course & Year and Major and staff and faculty-respondents such as Name, Sex, Age, Address, Civil Status, Job Description and Year/s in Service.

The second part includes other information about the respondents like natural disasters encountered.

Third and fourth part emphasized the level of awareness of the respondents about the natural disasters safety precautionary measures and mitigation practices to be done.

For the responses, the respondents were given the following 5-point rating scale with the corresponding verbal interpretation.

Rating	Range	Verbal Interpretation
5		Very much aware
4		Aware
3		Neither Aware nor Unaware
2		Unaware
1		Very much unaware

Data Gathering Procedure

The respondents were given time and effort to accomplish the questionnaire-checklist distributed to them. Follow up interview were also made for the clarification, strengthening and validation of answers given by the respondents. All data and information were treated, analyzed and interpreted carefully with confidentiality.

Data Processing and Statistical Tools

The data gathered from the respondents through questionnaire-checklist and follow up interview were tabulated and statistically analyzed for interpretation, as follows:

Variables	Statistical Tools
1. Demographic profile of the respondents	Frequency, Percentage and Rank
2. Level of awareness of the respondents towards natural disasters' safety precautionary measures.	Frequency, Percentage and Rank
3. Level of awareness of the respondents towards natural disasters' mitigation.	Mean, Verbal Interpretation and Rank
4. Level of awareness of the respondents toward natural disasters' safety precautionary measures and mitigation.	Mean, Verbal Interpretation and Rank
5. Testing the relationship between the respondents' demographic profile and the level of awareness in natural disasters' safety precautionary measures and mitigation.	Chi-square
6. Testing the relationship between the respondents' experience with natural disasters and the level of awareness in natural disasters' safety precautionary measures and mitigation.	Chi-square

Results and Discussion: -

The researcher employed 65 staff and faculty-respondents, male and female are nearly equal, most of them aged from 22-28 that resides mostly at Siniloan, Laguna. Most of the staff respondents are single. There were also 319 student-respondents, female dominates the number, most of them aged from 16-21 that resides mostly at Siniloan, Laguna. Single (in terms of Civil Status) respondents are clearly dominates the number with a difference of 92.48 %. Most of the student-respondents came from College of Agriculture since the said college has a lot of enrolled students but all programs from different colleges have various representatives as respondents.

The table number 1 shows the different natural disasters experienced by the Staff and Faculty-Respondents. These are the commonly experienced natural disasters since the province of Laguna is located near lake area. Flooding is the predominant disaster experienced by the

Table 1:-Natural Disasters experienced by the Staff and Faculty-Respondents.

Natural Disaster	Frequency	Percentage	Rank
Typhoon			
Never	22	33.84 %	1
Once	14	21.54 %	2.5
Twice	14	21.54 %	2.5
Thrice	7	10.77 %	4
Four times	2	03.08 %	6
Six times	1	01.54 %	7
“More than three”	5	07.69 %	5

Total	65	100 %	
Flood			
Never	39	60 %	1
Once	5	07.69 %	3
Twice	13	20 %	2
Thrice	3	04.62 %	5
Four times	1	01.54 %	6
“More than three”	4	06.15 %	4
Total	65	100 %	
Earthquake			
Never	28	43.08 %	1
Once	11	16.92 %	3
Twice	16	24.61 %	2
Thrice	8	12.31 %	4
“More than three”	2	03.08 %	5
Total	65	100 %	

employees of LSPU since Siniloan is very near to the lake. When typhoon strikes and more rain comes in, the lake becomes the catch basin of all areas near to Siniloan like the upland area and even Rizal province.

The table number 2 shows the different natural disasters experienced by the Student-Respondents. Students experienced the same as the employees of LSPU Siniloan for mostly students who enrolled are from nearby towns of “Baybay” area better known as 4th district of Laguna.

Table 2:-Natural Disasters experienced by the Student-Respondents.

Natural Disaster	Frequency	Percentage	Rank
Typhoon			
Never	110	34.48 %	1
Once	80	25.08 %	2
Twice	70	21.94 %	3
Thrice	34	10.66 %	4
Four times	8	02.51 %	6
Five times	3	0.94 %	7
Six times	9	02.82 %	5
“More than ten”	2	0.63 %	8.5
“More than twenty”	2	0.63 %	8.5
“Can’t recall”	1	0.31 %	10
Total	319	100 %	
Flood			
Never	188	58.93 %	1
Once	87	27.28 %	2
Twice	31	09.73 %	3
Thrice	4	01.25 %	5
Four times	7	02.19 %	4
Five times	1	0.31 %	6.5
“When there is heavy rain”	1	0.31 %	6.5
Total	319	100 %	
Earthquake			
Never	116	36.37 %	1
Once	95	29.78 %	2
Twice	47	14.73 %	3
Thrice	33	10.35 %	4
Four times	3	0.94 %	8.5

Five times	11	03.45 %	5
Six times	4	01.25 %	7
Seven times	3	0.94 %	8.5
Eight times	5	01.57 %	6
Nine times	1	0.31 %	10.5
“Can’t count”	1	0.31 %	10.5
Total	319	100 %	

The table number 3 and 4 shows the level of awareness of the Staff and Faculty-Respondents towards the Natural Disasters safety precautionary measures and mitigation. The table found out that the Staff and Faculty of LSPU-SC are very much aware to the natural disasters safety precautionary measures and mitigation. One of the important factors that might influence the result is the constant participation of the faculty and staff in the earthquake and fire drill. The same way with the students’ experience since they also participated in the said activity

Table 3:-Level of Awareness of the Staff and Faculty-Respondents towards Natural Disasters Safety Precautionary Measures

Indicators	Mean	Verbal Interpretation	Rank
Safety Precautionary Measures			
1. Value of having an available evacuation plan in case of natural disasters.	4.40	Very Much Aware	9.5
2. Presence of having an available evacuation area in case of natural disasters.	4.40	Very Much Aware	9.5
3. Always keeping yourself calm during disasters.	4.54	Very Much Aware	5.5
4. Staying indoor in case of typhoon occurrence.	4.49	Very Much Aware	7
5. Having a first aid kit in school, office and at home.	4.54	Very Much Aware	5.5
6. Importance of conducting seminars and trainings in school as preparation for natural disaster.	4.71	Very Much Aware	2
7. Avoiding needless trips during flood occurrence.	4.25	Very Much Aware	16.5
8. Benefits of having an available life vest in case of emergency.	4.18	Aware	19
9. Benefits of having an available boat in case of flooding.	4.12	Aware	21
10. Value of having warning devices in case of flooding.	4.35	Very Much Aware	12
11. Presence of having safe places to go and stay in case of flooding.	4.34	Very Much Aware	13.5
12. Adjustment of elevating the building construction.	4.38	Very Much Aware	11
13. Adjustment of improving the drainage canals.	4.17	Aware	20
14. Elevating the low-lying area (land filling).	4.23	Very Much Aware	18
15. Practices of protecting your body from falling debris using Drop, Cover, and Hold procedures. In case of Earthquake.	4.65	Very Much Aware	3
16. Safely moving to an open area if you are outdoor. In case of Earthquake.	4.63	Very Much Aware	4
17. Value of having a warning devices in case of an earthquake.	4.29	Very Much Aware	15

18. Importance of conducting earthquake drill.	4.75	Very Much Aware	1
19. Presence of having an evacuation area in your respective area.	4.42	Very Much Aware	8
20. Value of having a warning devices in case of landslide in your area.	4.25	Very Much Aware	16.5
21. Presence of having safe places to go and stay in case of landslide.	4.34	Very Much Aware	13.5
General Mean	4.40	Very Much Aware	

of the school not to mention that it is also included in the NSTP program implemented of the institution.

Table 4:-Level of Awareness of the Staff and Faculty-Respondents towards Natural Disasters Mitigation.

Mitigation Practices			
Indicators	Mean	Verbal Interpretation	Rank
1. Discussing the plan with peers, family, or community members with respect to natural disasters.	4.20	Aware	9
2. Familiarizing yourself to natural disasters in order to know what safety precautionary measures to be done with respects to natural disasters.	4.43	Very Much Aware	4
3. Elevation of building construction into 1 meter.	3.95	Aware	16
4. Creation of core group in disaster preparation.	4.00	Aware	15
5. Buildings are created/designed to cope with natural disasters (2-storey building).	4.14	Aware	13
6. Installation of early warning device.	4.25	Very Much Aware	8
7. Installation of CCTV.	4.29	Very Much Aware	7
8. Elevating the low-laying land area.	4.18	Aware	10
9. Improving the drainage canals.	4.15	Aware	12
10. Constructing of river controls.	4.17	Aware	11
11. Improving the soil contours.	3.83	Aware	17
12. Avoiding the construction of house on accident prone area	4.49	Very Much Aware	3
13. Planting trees and protect the forest, specially in mountains, to prevent soil erosion.	4.75	Very Much Aware	1
14. Getting ready of generator in case of brown out.	4.09	Aware	14
15. Conducting trainings and seminars as preparation for natural disaster occurrence.	4.74	Very Much Aware	2
16. Having an emergency hotlines.	4.37	Very Much Aware	5.5
17. Frequent cleaning of drainage and canals to avoid stagnant water.	4.37	Very Much Aware	5.5
General Mean	4.26	Very Much Aware	

The table number 5 and 6 shows the level of awareness of the Student-Respondents towards the Natural Disasters safety precautionary measures and mitigation. The table found out that the Students of LSPU-SC are aware to the natural disasters safety precautionary measures and mitigation.

Table 5:-Level of Awareness of the Student-Respondents towards Natural Disasters Safety Precautionary Measures.

Indicators	Mean	Verbal Interpretation	Rank
Safety Precautionary Measures			
1. Value of having an available evacuation plan in case of natural disasters.	4.04	Aware	9.5
2. Presence of having an available evacuation area in case of natural disasters.	3.97	Aware	12.5
3. Always keeping yourself calm during disasters.	4.27	Very Much Aware	3
4. Staying indoor in case of typhoon occurrence.	4.19	Aware	7
5. Having a first aid kit in school, office and at home.	4.24	Very Much Aware	5
6. Importance of conducting seminars and trainings in school as preparation for natural disaster.	4.32	Very Much Aware	1
7. Avoiding needless trips during flood occurrence.	3.97	Aware	12.5
8. Benefits of having an available life vest in case of emergency.	3.81	Aware	20
9. Benefits of having an available boat in case of flooding.	3.76	Aware	21
10. Value of having warning devices in case of flooding.	3.90	Aware	15.5
11. Presence of having safe places to go and stay in case of flooding.	4.04	Aware	9.5
12. Adjustment of elevating the building construction.	3.86	Aware	17
13. Adjustment of improving the drainage canals.	3.84	Aware	18
14. Elevating the low-lying area (land filling).	3.82	Aware	19
15. Practices of protecting your body from falling debris using Drop, Cover, and Hold procedures. In case of Earthquake.	4.21	Very Much Aware	6
16. Safely moving to an open area if you are outdoor. In case of Earthquake.	4.27	Very Much Aware	3
17. Value of having a warning devices in case of an earthquake.	3.92	Aware	14
18. Importance of conducting earthquake drill.	4.27	Very Much Aware	3
19. Presence of having an evacuation area in your respective area.	4.03	Aware	11
20. Value of having a warning devices in case of landslide in your area.	3.90	Aware	15.5
21. Presence of having safe places to go and stay in case of landslide.	4.07	Aware	8
General Mean	4.04	Aware	

Table 6:-Level of Awareness of the Student-Respondents towards Natural Disasters Mitigation. Mitigation Practices

Indicators	Mean	Verbal Interpretation	Rank
1. Discussing the plan with peers, family, or community members with respect to natural disasters.	4.23	Very Much Aware	3
2. Familiarizing yourself to natural disasters in order to know what safety precautionary measures to be done with respects to natural disasters.	4.22	Very Much Aware	4
3. Elevation of building construction into 1 meter.	3.82	Aware	17
4. Creation of core group in disaster preparation.	4.03	Aware	8.5
5. Buildings are created/designed to cope with natural disasters (2-storey building).	3.94	Aware	11
6. Installation of early warning device.	3.86	Aware	15.5
7. Installation of CCTV.	3.87	Aware	14
8. Elevating the low-laying land area.	3.90	Aware	13
9. Improving the drainage canals.	3.96	Aware	10
10. Constructing of river controls.	4.03	Aware	8.5
11. Improving the soil contours.	3.92	Aware	12
12. Avoiding the construction of house on accident prone area	4.16	Aware	5
13. Planting trees and protect the forest, specially in mountains, to prevent soil erosion.	4.36	Very Much Aware	1
14. Getting ready of generator in case of brown out.	3.86	Aware	15.5
15. Conducting trainings and seminars as preparation for natural disaster occurrence.	4.28	Very Much Aware	2
16. Having an emergency hotlines.	4.07	Aware	7
17. Frequent cleaning of drainage and canals to avoid stagnant water.	4.07	Aware	6
General Mean	4.03	Aware	

The table number 7 shows the relationship between the profile of the Staff and Faculty-Respondents and their level of awareness towards natural disasters safety precautionary measures and mitigation.

It is found out that the age and years in services is highly related with their level of awareness towards the natural disasters safety precautionary measures and mitigation. Though there are young members in the staff respondents, still it is not a factor since there is the presence of orientation and constant participation in fire and earthquake drill provided by competent Bureau of Fire Protection of Siniloan. As the staff and faculty respondent increases their years in service their level of awareness also increases.

Table 7:-Significant Relationship between the Staff and Faculty-Respondents Demographic Profile and Level of Awareness towards Natural Disasters Safety Precautionary Measures and Mitigation.

Variables	Statistical Tool	df	C-value	P-value	Decision	Interpretation
Safety Precautionary						

Measures						
Sex	Chi-Square	2	0.940	0.625	Accept Ho	Not Significant
Age		10	54.619	0.000	Reject Ho	Highly Significant
Address		14	7.183	0.927	Accept Ho	Not Significant
Civil Status		4	1.336	0.855	Accept Ho	Not Significant
Job Description		2	1.585	0.453	Accept Ho	Not Significant
Year/s in service		8	69.722	0.000	Reject Ho	Highly Significant
Mitigation Practices						
Sex	Chi-Square	2	1.233	0.540	Accept Ho	Not Significant
Age		10	87.475	0.000	Reject Ho	Highly Significant
Address		14	11.232	0.668	Accept Ho	Not Significant
Civil Status		4	2.496	0.645	Accept Ho	Not Significant
Job Description		2	0.169	0.919	Accept Ho	Not Significant
Year/s in service		8	93.058	0.000	Reject Ho	Highly Significant

The table number 8 shows the relationship between the profile of the Student-Respondents and their level of awareness towards natural disasters safety precautionary measures and mitigation.

It is found out that all of the profile of the Student-Respondents is related to their level of awareness towards natural disasters safety precautionary measures and mitigation except the address where they reside. Address is not a factor when it concerns the level of awareness though there are student respondent who came from upland areas because they carry with them the concept and knowledge on how to minimized the long-term after-effects of disaster.

Table 8:-Significant Relationship between the Student-Respondents Demographic Profile and Level of Awareness towards Natural Disasters Safety Precautionary Measures and Mitigation.

Variables	Statistical Tool	df	C-value	P-value	Decision	Interpretation
Safety Precautionary						
Measures						
Sex	Chi-Square	3	8.437	0.038	Reject Ho	Significant
Age		12	450.526	0.000	Reject Ho	Highly Significant
Address		33	30.610	0.587	Accept Ho	Not Significant
Civil Status		3	12.103	0.007	Reject Ho	Significant
College		21	505.235	0.000	Reject Ho	Significant
Course		78	801.533	0.000	Reject Ho	Highly Significant
Year/s stayed		24	67.227	0.000	Reject Ho	Highly Significant
Mitigation Practices						
Sex	Chi-Square	3	9.572	0.023	Reject Ho	Significant
Age		12	488.679	0.000	Reject Ho	Highly Significant
Address		33	25.831	0.808	Accept Ho	Not Significant
Civil Status		3	7.981	0.046	Reject Ho	Significant
College		21	544.188	0.000	Reject Ho	Highly Significant
Course		78	822.609	0.000	Reject Ho	Highly Significant
Year/s stayed		24	75.727	0.000	Reject Ho	Highly Significant

The table number 9 shows the relationship between the experience of the Staff and Faculty-Respondents with the natural disasters and their level of awareness towards natural disasters safety precautionary measures and mitigation. It is found out that all of their experience with the natural disasters has significant relationship with their level of awareness towards the natural disasters safety precautionary measures and mitigation.

Table 9:-Significant Relationship between the Staff and Faculty-Respondents Experience with Natural Disasters and Level of Awareness towards Natural Disasters Safety Precautionary Measures and Mitigation.

Natural Disasters	Statistical Tool	rho-value	p-value	Decision	Interpretation
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Safety Precautionary Measures	Spearman				
Typhoon		0.595	0.000	Reject Ho	Highly Significant
Flood		0.393	0.001	Reject Ho	Highly Significant
Earthquake		0.520	0.000	Reject Ho	Highly Significant
Mitigation Practices					
Typhoon		0.822	0.000	Reject Ho	Highly Significant
Flood		0.675	0.000	Reject Ho	Highly Significant
Earthquake		0.893	0.000	Reject Ho	Highly Significant

The table number 10 shows the relationship between the experience of the Student-Respondents with the natural disasters and their level of awareness towards natural disasters safety precautionary measures and mitigation. It is found out that their experience with the typhoon and earthquake are significantly related with their level of awareness towards the natural disasters safety precautionary measures and mitigation.

Table 10:-Significant Relationship between the Student-Respondents Experience with Natural Disasters and Level of Awareness towards Natural Disasters Safety Precautionary Measures and Mitigation.

Natural Disasters	Statistical Tool	rho-value	p-value	Decision	Interpretation
Safety Precautionary Measures	Spearman				
Typhoon		0.879	0.000	Reject Ho	Highly Significant
Flood		0.887	0.000	Reject Ho	Highly Significant
Earthquake		0.841	0.000	Reject Ho	Highly Significant
Mitigation Practices					
Typhoon		0.872	0.000	Reject Ho	Highly Significant
Flood		0.867	0.000	Reject Ho	Highly Significant
Earthquake		0.835	0.000	Reject Ho	Highly Significant

Conclusion and Recommendation: -

Conclusions

The researcher therefore concludes that the level of awareness of staff, faculty and students of LSPU-SC are highly recognized based on the natural disasters' safety precautionary measures and mitigation practices. When natural disasters strike, individuals must be knowledgeable on what to do in order to survive. It is very essential nowadays since the onset of climate change, everybody has to be prepared of the different disasters that might come. Knowing the location and the different hazards present in the area, awareness is necessary on how to deal with disasters. While these hazards cannot be prevented from occurring, mitigation planning focuses on reducing the impact of such events when they do occur. Mitigation strategies include actions taken in the form of projects that will substantially reduce or even eliminate repetitive losses due to the occurrence of the same hazard. Safety of our lives is even more important than any other things.

Recommendations

Based from the conclusion formulated, the researcher recommends to the institution to continuously conduct frequent seminars and trainings about the natural disasters in order that the constituents to be more aware and knowledgeable about the things that must be done before, during and after the occurrence of all the natural disasters that will strike either in school and in home.

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