ORIGINAL ARTICLE

A Cross-sectional Study of Awareness and Preparedness of Disaster Relief Among Staff and Students of University of Cyberjaya

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ABSTRACT

Introduction: Recent studies have suggested that most students and staff are aware and prepared for disaster relief. The study aimed to evaluate the state of disaster awareness and preparedness among students and staff in University of Cyberjaya. **Methods:** From February 2020 till February 2021, the authors conducted a cross-sectional study to evaluate the level of awareness and preparedness of disaster relief among staff and students of University of Cyberjaya. The sampling frame is all students and staff from all faculties in University of Cyberjaya. Online questionnaire was used for our data collection, descriptive analysis and Multiple Logistic Regression were used for analysis. **Results:** A total of 150 respondents took part in this survey. Among the respondents, 71.3% were well aware of preparedness of disaster relief where the differences in religion and ethnicity, level of education and different occupation contributed to it. Ninety point seven percent were well aware of equipment in the campus and there was significant association between awareness level of equipment and education level, majority were aware of preparedness in the case of events of a sudden fire outbreak while 62.7% were aware of damaged resources in print and digital media. **Conclusion:** The knowledge regarding disaster preparedness and awareness among staff and students in the university is mostly aware. It is expected this study will shed some light for further effective implementation of disaster preparedness management.

Keywords: Awareness, Preparedness, Disaster relief, Staff and students, Campus

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INTRODUCTION

According to the World Health Organization, a catastrophe is an event that disrupts the normal living conditions and causes a degree of deprivation that exceeds the impacted community's potential for adjustment. The term "awareness and emergency preparedness" applies to the actions and steps taken in advance to ensure an appropriate response to the effects of disasters, such as the provision of prompt and effective alerts and the temporary evacuation of persons and property from endangered areas. Disaster preparedness is the practice of ensuring that an agency has taken proactive action and is ready to contain the consequences of two forecasted catastrophic disasters in order to avoid loss of life, illness, and property harm (1). The World Conference on Disaster Reduction, held from January 18 to 22, 2005 in Kobe, Hyogo, Japan, implemented the Hyogo Framework for Action 2005-2015: Building Nations' and Communities' Resilience to Disasters (2).

Consequently, preparedness and awareness of disaster relief should be recommended as a subject in itself in educational courses for the safety of one's lives. Hopefully the results from this study will give input for the campus' management and facility unit so that they can improve the safety and disaster mitigation to staff and students alike. This means that everyone can recognize and acknowledge that preparedness is a part of an everyday mission, not just a solution to a crisis (3).

Hence this study aims to determine the extent of awareness on campus about general safety laws,

about the equipment in the campus, degree of preparedness in the scenario of another unexpected fire outbreak on campus and awareness level towards damaged resources in print and in digital media.

MATERIALS AND METHODS

Study design and study population

A cross sectional study of awareness and preparedness of disaster relief was conducted from February 2020 till February 2021. The study population involved the students and staff from all faculties in University of Cyberjaya, totalling the amount of 3289. The inclusion criterion for this study included students and staff at the University of Cyberjaya who had begun Year 2 or higher, while the exclusion criteria were students who had not registered a matric number and staff who had not registered an id number.

Sample size estimation and sampling method

Based on the calculation, it can be estimated that there were 343 samples that involved this research for both staff and students that consist of 312 students and 31 staff. In this research, we used two types of sampling methods, which are stratified and simple random sampling methods. For Stratified Random Sampling, the students in the University of Cyberjaya population were divided into seven different faculties. These faculties are Centre of Foundation, Faculty of Medicine, Faculty of Pharmacy, Faculty of Allied Health Sciences, Faculty of Traditional Chinese Medicine, Faculty of Safety and Health and Faculty of Business Management. From the total of 2996 students in University of Cyberjaya, we determined the number of samples for each different faculty through the single-proportion ratio and they will be selected at equal proportion. In Simple Random, selection of samples required the name list of respective faculties and staff. We used a randomizer application by filling all the numbers according to the name list and picking the respective number of samples according to the faculties and staff, to answer the survey.

Data Collection

This study has been approved by University of Cyberjaya Research Ethics Review Committee (CRERC) with the reference number of UOC/CRERC/AL-ER (15/2020). After receiving the approval from University of Cyberjaya Research Ethics Review Committee (CRERC), the respondents were asked to complete the survey questionnaire. IIn this study we used one instrument. A standardized and structured questionnaire was developed and used to gather the data (13, 14) with the title of "Awareness and Preparedness of People in University of Cyberjaya Regarding Disaster Relief". The questionnaire aimed to collect the following information from respondents and the questionnaire contained two sections. Section A asked about socio demographic data of the partakers, while Section B asked about the level of awareness and disaster preparedness where it consisted of 7 possible responses to each statement ranging from no knowledge to completely agree and required for the participants to select a response by ticking the answer in the online form. The data was obtained from volunteers of University of Cyberjaya's personnel and students, and informed consent was obtained prior to data collection. By gathering anonymous data and generating coding for the participant's information, the data's confidentiality is ensured. The questions were completed via an online form, and the study team circulated them via email attachments and online sharing. The survey took between 10 and 15 minutes to complete, and after it was done, the survey tool was instantly retrieved. Following the release of the results, the data was maintained and stored for one year, after which the recorded online data was destroyed. The data was collected between August 2020 and February 2021.

Pilot Study and Ethical Conditions

As a pilot study, a limited sample of subjects (roughly 10% of the main study) were chosen in the same manner as the main study, and 20 subjects were chosen in the same manner as the main study. The pilot participants were briefed to see whether there were any difficulties with the questionnaire or any other conflicts with it. The questionnaire's content and form was updated accordingly. The researcher used the pilot study results to create dummy data for 216 participants in order to perform a trial test on the chosen form of data analysis. The pilot project participants were omitted from the main study, and the study specifics were not disclosed to the main study participants. A consent was requested from all the participants with the purpose of analysing the results received. A consent checkbox with the details were given and included in the questionnaire to be distributed to our participants. The personal information of the participants was highly confidential and not distributed to any other third-party. This study was only to be published with approval and consent from the subjects.

Statistical Analysis

The quantitative information gathered by the questionnaires was evaluated using the Statistical Package for Social Sciences (SPSS) program version 21. The data was analysed descriptively and some statistical tests were used to further tabulate appropriate findings from the study. The quantitative data was analysed with Percentage, where the The frequency of a specific answer to a question

was measured as a percentage, and the data was represented using tables where tables make it easier to present vast quantities of evidence. Multiple Logistic Regression was used to test the association between the respondents' preparedness and awareness about disaster relief in relation to their demographic profiles. Findings were deemed statistically important if the p value was less than 0.05 and the confidence interval was greater than 95%.

RESULTS

Overall, the general response rate of our study was 43%, with 150 respondents in total. From the data that we have collected, it was discovered that the majority of respondents (87.3%) were between the ages of 20 and 30 years old, female (77.3%), students (87.3%), from the Faculty of Medicine (49.3%), in degree (82.0%), Malaysian (100%), of the Malay race (71.3%), and Muslim (72.7%).

To determine the awareness level about general safety rules in the campus

The overall prevalence of staff and students of University of Cyberjaya that are aware of preparedness of disaster relief is 71.3%, while 28.7% are unaware of preparedness of disaster relief (Table I). This concludes that majority of the staff and students of University of Cyberjaya are aware of the rules about general safety in the campus. The association between disaster relief awareness and preparedness among University of Cyberjaya staff and students with sociodemographic variables was measured. The findings indicate that there was no statistically significant difference between the age group (p=0.181), gender (p=0.057) and faculty (p=0.622). However, there was a statistically significant difference between religion (p=0.047), ethnicity (p=0.022), level of education (p=0.000) and occupation (p=0.000). (Table II). The relevant data reveals that disparities in religion and ethnicity, as well as levels of education and employment, all contribute to disaster relief knowledge and readiness. Students and those pursuing a degree for their education have a higher level of awareness and preparation than others, owing to the fact that they make up the majority of the sample and their willingness to take the researcher's questionnaires. It's also fair to say that they spend a lot of time on campus. The ethnicity, religion, age group, gender and faculty ratio of the respondents were al taken into account in order to get a viewpoint on disaster preparedness and awareness from people who took part in the survey.

To study the awareness level about the equipment in the campus

Based on the data that we have collected, the overall prevalence of staff and students of University of Cyberjaya that are aware of equipment in the campus is 90.7% while 9.3% are unaware of the equipment in the campus (Table III). The age groups 31-40 years old and 41-50 years old (100.0%) have the greatest prevalence of being knowledgeable of campus facilities, male (91.2%), student (90.8%), students from faculty of Chinese Traditional Medicine (100%), Safety and Health (100%) and Business Management (100%), level of education PhD (100%), Malaysian (100%), Chinese (94.1%) and Christian (93.3%) (Table IV).

To determine the prevalence of staff and student's preparedness level in the event of another sudden fire outbreak in the campus

From data collected, it shows that prevalence among staff and student in preparedness level for sudden fire outbreak is they are highly aware of shelter areas or evacuation centres (80.7%), aware of regular emergency drills conducted (64.0%), aware about which government office needs to be coordinated with after the disaster (72.7%), informed about disaster prone areas (70.0%), have knowledge about evacuation areas during a disaster (70.0%), know the importance of community activities for disaster risk reduction (85.3%) and fully aware and informed about the evacuation system and plan (69.3%) (Table V).

To assess staff and student's awareness level towards damaged resources in print and in digital media

The percentage of staff and students who are conscious of degraded services in print and digital media is 62.7%, while 37.3% are not (Table VI).

Table I : Level of awareness and preparedness of disaster relief among staff and students of University of Cyberjaya

Level of Awareness and Preparedness of Disaster Relief	Frequency (n)	Percentage (%)
Aware	107	71.3
Unaware	43	28.7
Total	150	100.0

Table II : Relation of level of awareness and preparedness of disaster relief among staff and students of University of Cyberjaya with sociodemographic variables

Socio-demographic variables		Level of Awareness and Preparedness of Disaster Relief (%)		Total, n (%)	Chi value (df)	P value
		Aware	Unaware			
Age group	**Less than 20 years**	4(80.0)	1(20.0)	5(100.0)	30.111(24)	0.181
	20 - 30 years	102(72.1)	28(27.9)	130(100.0)		
	31- 40 years	54(3.9)	0.0(1.1)	5(100.0)		
	41 - 50 years	2(2.3)	1(0.6)	3(100.0)		
	More than 50 years	4(4.7)	2(1.3)	6(100.0)		
Gender	**Male**	24(92.7)	10(7.3)	34(100.0)	12.236(6)	0.057
	Female	93(75.3)	22(24.7)	115(100.0)		
Occupation	**Staff**	12(12.6)	4(3.4)	16(100.0)	35.812(12)	0.000
	Student	102(72.1)	28(27.9)	130(100.0)		
Faculty	**Centre of Foundation**	8(9.4)	4(2.6)	12(100.0)	62.316(42)	0.622
	Faculty of Medicine	56(84.3)	17(15.7)	73(100.0)		
	Faculty of Traditional Chinese Medicine	3(2.3)	0(0.0)	3(100.0)		
	Faculty of Allied Health Sciences	15(96.1)	3(3.9)	18(100.0)		
	Faculty of Safety and Health	14(12.6)	2(3.4)	16(100.0)		
	Faculty of Pharmacy	14(12.6)	3(3.7)	17(100.0)		
	Faculty of Business Management	1(2.3)	2(0.6)	3(100.0)		
Level of Education	**Foundation**	9(9.4)	3(2.6)	12(10.0)	59.564(24)	0.000
	Diploma	4(4.7)	2(1.3)	6(100.0)		
	Degree	99(73.8)	23(26.2)	122(100.0)		
	Masters	5(6.3)	3(1.7)	8(100.0)		
	PhD	0(0.7)	1(0.2)	1(100.0)		
Ethnicity	**Malay**	81(77.2)	25(22.8)	106(100)	31.996(18)	0.022
	Chinese	15(96.3)	2(3.7)	17(100.0)		
	Indian	19(18.0)	4(4.9)	23(100.0)		
	Others	2(2.3)	1(0.6)	3(100.0)		
Religion	**Islam**	83(76.8)	25(23.2)	108(100.0)	29.074(18)	0.047
	Hindu	12(12.6)	4(3.4)	16(100.0)		
	Buddhist	9(97.9)	1(2.1)	10(100.0)		
	Christian	13(11.7)	2(3.2)	15(100.0)		
	Others	0(0.0)	0(0.0)	0(0.0)		

Table III : Prevalence of awareness level about the equipment in the campus among staff and students of University of Cyberjaya

Awareness level about equipment in campus	Frequency (n)	Percentage (%)
Aware	136	90.7
Unaware	14	9.3
Total	150	100.0

DISCUSSION

Due to the increasing number of fatalities during a disaster, disaster preparedness and awareness has become important to be instilled among every individual for any future disasters. Efforts have been done to implement this disaster preparedness and awareness in individuals by carrying out drills, campaigns and social media awareness. Most of these initiatives have been successful regarding emergency preparedness and understanding.

The current study in 2020 to determine the level of disaster preparedness and awareness among the staff and students of the University of Cyberjaya was done and. The total data obtained was 107 out of 150 (71.3%) which contributes that majority are aware and prepared for disaster relief. While the results of a recent study done in Ekiti State University, Ado- Ekiti, Nigeria in 2019 stated that disaster education, response and preparedness (57.2%) were very poor (15) due to the fact that provisions were not made in the school curriculum. The findings of this study do not align with our study in University of Cyberjaya where many staff and students are aware and prepared of disaster relief.

Coherently, another aspect that was asked in the survey was the prevalence of the awareness level about the equipment in campus which is (90.7%). In comparison, the majority of staff and students in research conducted by Kolawole et al. in 2015 (16) on disaster response activities in five public libraries in south/west Nigeria showed that they are well aware of disaster preparedness programs and have expertise of how to use the available disaster equipment.

On the other hand, the incidence of personnel and student preparedness in the event of another unexpected fire occurrence was 80.7%. According to a survey conducted in Southwest Ethiopia in 2014 (17), people were considered to have satisfactory (29.4%), average (32.4%), and low (38.2%) information about disaster preparedness and response. The majority felt that they have moderate preparedness (51.2%) and response (50.9%) to a fire disaster (17). A study done in Saudi Arabia in 2014, 47% had experience of a fire disaster which suggests that they are prepared and aware for a sudden fire outbreak (18). These results are consistent with our research at the University of Cyberjaya, where the vast majority of students are aware of all of the things mentioned under disaster adaptation for level of preparedness in the event of another sudden fire outbreak.

The prevalence of staff and student preparedness in the event of another unexpected fire outbreak was determined, and 80.7% were conscious about it. In Southwest Ethiopia, 31.3% have performed disaster drills or workshops in their facility or city (17), in Saudi Arabia almost half (52.8%) have read the emergency plan (18) while in University of Cyberjaya, most are aware of regular emergency drills conducted (64.0%).

The prevalence of assessing staff and student knowledge of degraded resources in print and digital media was documented. According to a survey conducted at the University of Jos library on emergency recovery and preparedness, the number of respondents are underprepared to save partially damaged paper materials 67 (64.42%), partially damaged print periodicals 73 (70.19%), and partially damaged digital media 78. (75%). The weighted average is 1.40 (35%), indicating that on average, workers are not able to save partially destroyed library materials in print and digital media (19).

While in University of Cyberjaya, most of the students and staff are aware towards damaged resources in print and in digital media, which is 62.7%.

CONCLUSION

The present study found that staff and students at the University of Cyberjaya are generally aware of and prepared in terms of disaster assistance, campus equipment, the case of another unexpected

Table IV : Prevalence of awareness level about the equipment in the campus among staff and students of University of Cyberjaya

Sociodemographic variables		Frequency (n)		Percentage (%)		Total (n/%)
		Aware	Unaware	Aware	Unaware	
Age group	**Less than 20 years**	2	3	40.0	60.0	5(100.0)
	20 - 30 years	119	12	90.8	9.2	131(100.0)
	31- 40 years	5	0	100.0	0.0	5(100.0)
	41 - 50 years	3	0	100.0	0.0	3(100.0)
	More than 50 years	6	0	0.0	100.0	6(100.0)
Gender	**Male**	31	3	91.2	8.8	34(100.0)
	Female	105	11	90.5	9.5	116(100.0)
Occupation	**Staff**	14	2	87.5	12.5	16(100.0)
	Student	119	12	90.8	9.2	131(100.0)
Faculty	**Centre of Foundation**	8	4	66.7	33.3	12(100.0)
	Faculty of Medicine	70	4	94.6	5.4	74(100.0)
	Faculty of Traditional Chinese Medicine	3	0	100.0	0.0	3(100.0)
	Faculty of Allied Health Sciences	16	2	88.9	11.1	18(100.0)
	Faculty of Safety and Health	16	0	100.0	0.0	16(100.0)
	Faculty of Pharmacy	15	2	88.2	11.8	17(100.0)
	Faculty of Business Management	3	0	100.0	0.0	3(100.0)
Level of education	**Foundation**	8	4	66.7	33.3	12(100.0)
	Diploma	5	1	83.3	16.7	6(100.0)
	Degree	116	7	94.3	5.7	123(100.0)
	Masters	6	2	75.0	25.0	8(100.0)
	PhD	1	0	100.0	0.0	1(100.0)
	Doctor	0	0	0.0	0.0	0(0.0)
Nationality	**Malaysian**	136	14	90.7	9.3	150(100.0)
Ethnicity	**Malay**	97	10	90.7	9.3	107(100.0)
	Chinese	16	1	94.1	5.9	17(100.0)
	Indian	21	2	91.3	8.7	23(100.0)
	Others	2	1	66.7	33.3	3(100.0)
Religion	**Islam**	99	10	90.8	9.2	109(100.0)
	Hindu	14	2	87.5	12.5	16(100.0)
	Buddhist	9	1	90.0	10.0	10(100.0)
	Christian	14	1	93.3	6.7	15(100.0)
	Others	0	0	0.0	0.0	0(0.0)

Table V : The prevalence of staff and students preparedness level in the event of another sudden fire outbreak in the campus

Prevalence of staff and students preparedness level in the event of another sudden fire outbreak in the campus		Frequency (n)	Percentage (%)
Aware of the shelter areas or evacuation centers and open spaces in case of a disaster.	**Aware**	121	80.7
	Unaware	29	19.3
There are regular emergency drills conducted.	**Aware**	96	64.0
	Unaware	54	36.0
Aware about which government office needs to be coordinated with after the disaster.	**Aware**	109	72.7
	Unaware	41	27.3
Informed about disaster prone areas.	**Aware**	105	70.0
	Unaware	45	30.0
Have knowledge about evacuation areas during a disaster	**Aware**	105	70.0
	Unaware	45	30.0
Know the importance of community activities for disaster risk reduction and the presence of disaster committee	**Aware**	128	85.3
	Unaware	22	14.7
Fully aware and informed about the evacuation system and plan.	**Aware**	46	69.3
	Unaware	104	30.7
Total		150	100.00

Table VI : To assess staff and student's awareness level towards damaged resources in print and in digital media

Actively participate in disaster awareness campaigns	Frequency (n)	Percentage (%)
Aware	94	62.7
Unaware	56	37.3
Total	150	100

fire breakout, and damaged print and digital media resources. However, due to a lack of knowledge or training, some people are still unaware of what they need to do in an emergency. As a result, it is believed that this research will throw some light on how to better integrate disaster preparation management into the university's curriculum for everyone's benefit.

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REFERENCES

1. Pan American Health Organization. Emergency Preparedness, Disaster Relief Coordination Program. Principles of Disaster Mitigation in Health Facilities. Washington, D.C.: Regional Office of the World Health OrganizationPan American Health Org; 2000.
2. International Strategy for Disaster Reduction. Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters. World Conference on Disaster Reduction; 2005.
3. Kapucu N. Culture of preparedness: Household disaster preparedness. Disaster Prev Manag An Int J. 2008;17(4):526–35.
4. Khalid M, Shafiai S. Flood Disaster Management in Malaysia: An Evaluation of the Effectiveness Flood Delivery System. International Journal of Social

Science and Humanity. 2015;5(4):398-402.
5. Dorasamy M, Raman M, Kaliannan M. Integrated community emergency management and awareness system: A knowledge management system for disaster support. Technological Forecasting and Social Change. 2017;121:139-167.
6. Singh H, Subramaniam S. Health emergency and disaster preparedness in Malaysia. Southeast Asian journal of tropical medicine and public health. 2009;40:11.
7. Jaradat A, Mziu H, Ibrahim J. Disaster preparedness in universities. Int J Comput Trends Tech. 2015;19(1):1-4.
8. Baker E. Household preparedness for the Aftermath of Hurricanes in Florida. Applied Geography. 2011;31(1):46-52.
9. National Research Council. Facing hazards and disasters: Understanding human dimensions. National Academies Press; 2006.
10. Thomas D, Strauss J, Henriques M. How Does Mother's Education Affect Child Height?. The Journal of Human Resources. 1991;26(2):183.
11. Faupel C, Styles S. Disaster Education, Household Preparedness, and Stress Responses Following Hurricane Hugo. Environment and Behavior. 1993;25(2):228-249.
12. Jamison D, Moock P. Farmer education and farm efficiency in Nepal: The role of schooling, extension services, and cognitive skills. World Development. 1984;12(1):67-86.
13. Kiongo J. Disaster preparedness among members of staff at Kenyatta national hospital. Nairobi County, Kenya. 2015.
14. Columna A, Dannug C, Fallarcuna J, Raquel M, Chriatian S. Survey Questionnaire – Disaster Awareness and Preparedness -Sti. 2019.
15. Ogunleye OI, Olusola JA. Evaluating Disaster Preparedness among University Learners: A Study of Ekiti State University, Ado-Ekiti, Nigeria. 2019;6(2):83-88.
16. Kolawole I, Udoaku S, Daniel C, Chima D. Disaster Management Practices Infive Public Libraries In South- West, Nigeria. IOSR J Humanit Soc Sci [Internet]. 2015;20(11):78–83.
17. Berhanu N, Abrha H, Ejigu Y, Woldemichael K. Knowledge, Experiences and Training Needs of Health Professionals about Disaster Preparedness and Response in Southwest Ethiopia: a cross sectional study. Ethiop J Health Sci. 2016;26(5):415–426.
18. Alzahrani F, Kyratsis Y. Emergency nurse disaster preparedness during mass gatherings: A cross-sectional survey of emergency nurses' perceptions in hospitals in Mecca, Saudi Arabia. BMJ Open. 2017;7(4).
19. Nwokedi GI, Panle PP, Samuel N. Disaster management and preparedness: a case study of University of Jos Library. Library Philosophy and Practice. 2017;8(8):1-23.