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Disaster Management and Preparedness among Students at Tertiary Level: A Case of Mixed Method Research

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Abstract: *This study has been designed to examine the awareness level of youth [students] regarding knowledge, attitude, and practice about disaster management and preparedness. For this purpose, research was conducted in a public sector university, and students of the faculty of arts participated. A mixed research method (MMR), both quantitative and qualitative research designs, was used to ascertain the objective of the study. A sample of 352 male and female students was selected. A well-structured questionnaire was designed, and data was collected by employing a purposive sampling technique. However, a focused group discussion (FGD) was also conducted. The data was analyzed by employing the T-test, and a conclusion was drawn. The study revealed that most of the students lack knowledge of disaster management and preparedness as the awareness level in youth is very low, and they do not even know about the importance and different dimensions of disaster management and preparedness. Moreover, they are found unaware of the disaster phases and basic knowledge about the risks and vulnerabilities.*

Key Words: Disaster, Knowledge, Attitude, Management, Hazard, Vulnerability

Introduction

A phenomenon of disaster is an accident or sudden catastrophe that occurs and causes unpredicted damage to humans and infrastructure by bringing a significant change in the circumstances over a short period (Avadi & Seth, 2020; Cox et al., 2020; Ha, 2020; Rasaki, 2019). Similarly, disasters occur as a result of a combination of hazards, vulnerabilities, and a lack of measures (Kitagawa, 2019; Lee, 2019). Cutter (2003) states that disasters usually cause higher intensity in terms of impacts like deaths, damages, displacement, and outbreaks. However, several scholars have explained the concept of disaster as a condition where the local capacity of the community to resist, manage, and recuperate the occurrence with the help of peripheral support while connecting different stakeholders to mitigate the disastrous outcomes (Ching & Lazaro, 2019; Demiroz & Haase, 2019; Hosseini, Bahadori, Raadabadi, & Ravangard, 2019; Kaur & Sood, 2019). It disrupts the smooth functioning of a society or community, bringing extensive loss to humans, materials, economic and ecological loss that runs over the abilities of society and community to muddle through by utilizing the locally available resources (Botchie, Damoah, & Tingbani, 2019).

It is estimated that almost 90 percent of deaths from all-natural disasters occur in the developing world (Howard, Agllias, Bevis, & Blakemore, 2018; Kim & Zakour, 2018). Globally, more than one million people die out, and millions become homeless in each passing decade. Disaster management and preparedness allude to measures carried out to prepare and reduce the hazards of disaster (Bulan & Eturma, 2018; Dwivedi, Shareef, Mukerji, Rana, & Kapoor, 2018). This is to predict, prevent, and mitigate the impacts on the vulnerable population and respond to the consequences accordingly. Moreover, special measures for planning, coordinating and utilizing appropriate resources that minimize the adverse impact of disasters (Brown, 2018). Disaster preparedness is a continuous and integrated process entailing a large number of activities and resources rather than designing a distinct activity (Bulan & Eturma, 2018; Dwivedi et al., 2018). It comprised multidimensional aspects that contribute to a complex whole ranging from

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training, logistics, and healthcare activities. Besides, natural disasters cause large-scale devastation to structures and infrastructure, resulting in losses and damages (Alfieri, Dottori, Betts, Salamon, & Feyen, 2018; Ashida, Zhu, Robinson, & Schroer, 2018). Furthermore, the activation of a hazard that flows through the system as a series of events in a logical sequence produces a loss of life, property, and livelihood by negatively influencing the emergency systems. Although, disasters bring misery to the masses, i.e., individuals, families, communities, governments, and nations. Thus, it produces new knowledge that affects the policymakers to bring changes in the structure, economy, politics, and the development and growth of the nation or country in a different way.

Review of Literature and Study Context

In third-world countries like Pakistan, natural disasters have great impacts on the fluctuating economy, and disasters bring destruction on a large scale (Aziz, 2016). In the world ranking of disaster-prone countries, natural disasters, almost five countries are found from Asia because of the fluctuating economic growth rate and less resilient disaster management system (Farley, Suraweera, Perera, Hess, & Ebi, 2017; Sadiq & Tyler, 2016; Tsukasaki et al., 2016). Among those, Pakistan is ranked as the 4th most vulnerable population in the world against natural disasters. Although disasters cannot be eliminated by making proper arrangements, assessing the hazards, and minimizing the vulnerabilities, the impact of the disasters can be minimized (Aziz, 2016). Consequently, there is a need to strengthen the disaster management authorities by introducing different effective policies to combat disasters in the future. It has been observed that despite being a disaster-prone country, there is a lack of knowledge among the people about disasters, their phases, hazards, preparedness, and mitigation (Aziz, 2016; Kitagawa, 2016; Marcelin, Cela, & Shultz, 2016). Though change has been witnessed since the earthquake in 2005, institutions were structured to combat the disasters, but no significant hallmark has been achieved so far (Aziz, 2016).

In 2005, Pakistan-administered Kashmir (PaK) was hit by a natural disaster, 'an earthquake', bringing thousands of deaths. It brought misery to the people by destroying the homes, infrastructure, and mainly the high death toll recorded (Aziz, 2016; Habib, Uddin, Ur Rahman, Jahan, & Akter, 2013; Sadiq & Tyler, 2016; Zake & Hauser, 2014). Historically, it has been the most devastating natural disaster that has stricken the main districts badly, i.e., Muzaffarabad, Neelum, Bagh, and Rawalakot. There has not been any preparedness response available to deal with such a disaster in Pakistan (Aziz, 2016). The government of PaK is on the verge of the Government of Pakistan dealing with disasters, while they also do not have any such infrastructure to deal with. Soon after the disaster, the institutions were structured to cope with the disasters in the future, i.e., ERRA, SERRA and SDMA. Despite structuring such institutions, PaK lacks even the basic structure of dealing with disasters. Besides, almost everyone is affected by the series of natural disasters in PAK, i.e., landslides, earthquakes, and floods. There is a lack of awareness found even among the literate people. The youth does not know about the nature and occurrence of disasters. However, the concerned institutions have even taken up the responsibility to create awareness among the common people. If a literate person who makes use of social media, including other modern tools, lacks knowledge about the disaster, then how 83 percent of the population living in rural areas can be educated? The structure of the institutions has raised many questions about their existence. Moreover, the dissemination of knowledge of disasters must be part of the policies and planning in the larger context of society. Thus, this study is focused on assessing the awareness level of the students regarding the knowledge, attitude, and practice of disaster management and preparedness.

The Data and Methods

The study was conducted at the University of Azad Jammu and Kashmir (UAJK), Muzaffarabad. The purpose of the research was to assess knowledge, attitude, and practice on disaster management and preparedness among the students living in Muzaffarabad. The mixed research method was applied, where both quantitative and qualitative designs were used. In a qualitative research design, the explanatory research method was employed. The target population for the study was selected from the UAJK Faculty of Arts. The faculty of Arts consisted of 2440 regular students in different departments. However, a sample size of 352 students was determined through the Yamane (1967). Furthermore, a non-probability purposive sampling technique was applied to collect the data from the students. A well-structured questionnaire was designed, and data was collected. The collected data was further processed through SPSS. A T-test was employed to



test the hypothesis. In qualitative design, focused group discussion (FGD) was conducted. An FGD was conducted among the ten students. The students were selected through a purposive sampling technique. Quantitative and qualitative results were analyzed, and robust results were derived.

Results

For the present study, Table 1 shows the distribution of responses according to gender, education level, profession, and district. In this study, 62 percent of males and 38 percent of females participated. The education level of youth was found as 71 percent were in the BS program, 28 percent from the master program, and 1 percent from the MS/MPhil program. Similarly, 98 percent of the regular students mostly belong to undergraduate and master programs while 2 percent were found part-time competing for their education along with jobs. The distribution of students according to the district was found as 65 percent from district Muzaffarabad, 19 percent from Bagh, and only 5 percent from Neelum.

Table 1
Socio-demographic Characteristics of the Respondents

Variables	Frequency	Percent
Gender		
Male	219	62
Female	133	38
Education		
BS	249	71
Masters	100	28
M.Phil.	3	1
Total	352	100.0
Profession of Respondents		
Full-time student	346	98
Part-time Student	6	2
Total	352	100.0
District		
Muzaffarabad	230	65
Bagh	67	19
Rawlakot	39	11
Neelum	16	5
Total	352	100.0

Hypotheses Testing

Table 2 shows that knowledge about disaster management and preparedness is more likely associated with different factors that have undergone statistical measures. All the independent variables showed the most significant value of 0.000. The significant value denoted that there are potential hazards of disaster for which the respondents are not familiar. However, the awareness is directly linked with the disaster management cycle, i.e., pre-, during, and post. Awareness raises the level of knowledge of the people as they become aware of the potential hazards of disasters in the area. Similar percussions are found for the other variables as a youth has been unaware of the disaster management cycle as well as the mitigation phases of mitigation and prevention and relief and rescue.

For instance, the youth were found unaware of the early warnings and information and communication system, including the official warnings and evacuation plans to implement at the onset of disasters. Moreover, youth were less likely interested in training on the phenomenon or showed no signs of getting training from any institution or nongerminal organization. They were also found unaware of any induction of training programs in the community. Besides, post-disaster phases of rehabilitation and reconstruction were also unknown. Besides, the youth did not have any knowledge of building codes and disaster risk reduction (DRR). Similarly, they do not have any knowledge about national disaster management (NDMA) and state disaster management (SDMA), which deal with disasters in the country and state. It is thus found

that youth are less likely to be interested in knowing about disaster management and preparedness, while considerable measures are needed to realize the significance of disaster management and its preparedness. Hence, a higher awareness level will more likely increase the knowledge about disaster management and preparedness among the youth.

Table 2

Variables	t	df	Sig. (2-tailed)
Potential hazards	36.721	351	0.000
Pre-, during, and post-disaster activities	62.682	351	0.000
Disaster management cycle	56.860	351	0.000
Phases of the disaster	43.535	351	0.000
Mitigation	61.741	351	0.000
Prevention and preparedness	57.362	351	0.000
Rescue and relief operation	52.373	351	0.000
Official warnings	54.358	351	0.000
Evacuation plan	55.599	351	0.000
Early warning systems	59.010	351	0.000
Communications and information	61.334	351	0.000
The training program at the university level	61.895	351	0.000
Community-level knowledge	52.544	351	0.000
Reconstruction and rehabilitation	54.470	351	0.000
Information about DRR	44.135	351	0.000
State disaster management and policy	56.533	351	0.000
Building codes	58.570	351	0.000
National disaster management plans	55.695	351	0.000

Revealed Dispositions of Respondents on Knowledge of Disaster Management and Preparedness

Focused Group Discussion

Knowledge

The knowledge revealed by the youth about disaster management and preparedness during the focused group discussion (FGD) undertaken. The youth was asked to share information about disasters either they experienced or frequently found around. As the respondents reflected on the potential hazards in the area, most of the students agreed that a similar nature of hazards is prevailing in every part of the PAK. A few know in detail about the disasters, as one of the respondents said, "Landslides, floods, and earthquakes are most frequently occurring disasters in Pak." Another student said, "We face the impacts of these natural disasters as roads are blocked, and farms are destroyed by floods." They were mainly unaware of the knowledge of disaster management and preparedness as most of the students said, "We only know about the disaster but do not know how to respond and counter the hazards on our own." However, few students know about the disaster management cycle and its phases. When asked about the disaster cycle, they responded, "They have never experienced any organized effort from government and other stakeholders to make the masses, and especially in university, it is only about the studies and routine work and outlines provided." The students had very little knowledge about the disaster phases, i.e., mitigation, response, preparedness, and rehabilitation. Although respondents have little knowledge about the activities undertaken by different stakeholders, youth conceived it as a waste of resources where sustainability has never been focused. One of the respondents said, "I think it is useless to spend in such ways where sustainable results are not achieved." All the respondents agreed that national institutions were formulated and worked for a long time while sustainable development was never focused on contributing to the development of policy. Although NDMA and later SDMA were structured, they still did not have the capacity to cope with disasters of mild nature like accidents and fire. A respondent added, "We have framed the institutions but without any capacity building how these can perform to cope with the disaster like an earthquake." Another respondent said, "The government has failed to develop a mechanism for disaster management in the state as this state is vulnerable to natural disasters." The foundation of the Earthquake Reconstruction and Rehabilitation Authority (EERA) and State



Reconstruction and Rehabilitation Authority (SERRA) proved to be a resource-consuming activity because there are no sustainable results of structuring such institutions except adding a burden to the economy.

Attitude

The attitude of the youth toward disaster management has been found discouraging because of the scant information available in the public and private spheres and especially the negligence of the authorities. The respondents were found vulnerable regarding the monitoring and evaluating of the potential hazards on their own and replicating the whole responsibility to the govt authorities and vice versa. One of the respondents said, *"I think the government did not take seriously to disseminate the information to the masses to know and adopt the measures that they can on their own."* Most of the respondents were of the view that familiarity with the concept of disaster management cycle and preparedness and subsequent phases is mainly scarce because they have been taught and brought up in the tradition of their designed syllabus and lack the awareness even though they do not bother the phenomenon. When asked about the warning system, most of them responded, *"There lacks the system of warning in most of the cases, and it is implemented only in floods while the trends are quite scarce in our society."* The evacuation plans are supposed to be part of the simulation exercises necessarily practiced in disaster-prone societies, but the tradition is quite reciprocal and susceptible to such hallmarks so far. One of the respondents added, *"I think there should be mock drills and seminars to raise awareness among the masses and particularly students."* Interestingly, the respondents were not even found anxious to know about the national disaster management plans and procedures along with the training strategies. At the same time, they were instituted to their studies and were not troubled with any disaster-related activity, i.e., any published material about the roles of different stakeholders, their relationship, and coordination to make efforts to combat the disaster-related strategies and the solutions. As a result, respondents were found quite unaware of the information from any official resources about the potential hazards and vulnerabilities. One of the respondents said, *"I never came across any training conducted by the SDMA or any govt institution on disaster management and preparedness."* Besides, they were not familiar with modern building codes and guidelines developed by the authorities and the institutions working outside the realm of the government.

Practice

Worldwide, disaster-prone countries and nations have been found to be very proactive in combating disaster-related hazards and vulnerabilities to protect people, develop a sustainable strategy, and motivate people to make effective use of the training and skills provided. In Pak, the majority of the respondents were unconcerned about the practices of disaster management and preparedness-related activities. They do not even have the basic knowledge about the practice of knowledge as either they did not attend even a single training workshop or they were not provided knowledge on disaster management and preparedness. One of the respondents said, *"I know it's a very dangerous zone for disaster management, but I never heard anybody or any institution or NGO raising awareness or imparting training on the phenomenon."* Moreover, institutional negligence from the government has been identified. All the respondents agreed that no such institute would impart training on the phenomenon being explored. Therefore, training programs were not found at the university and community level. As mentioned earlier, there is a lack of institutions that could be helpful in imparting knowledge to the masses. One of the participants added, *"We lack the institutions to impart training to the common people while they should reorganize the concerned institutions to impart training as well as the skills to people to combat the hazards."* According to the respondents' level of awareness in the community, the level is also very low, while the communication system is ineffective. Thus, ineffective disaster management and preparedness need to be sustained through collaborative measures taken by the government and other stakeholders collectively.

Discussions

Research across the globe shows that disaster-prone countries took measures to protect the people by actively assessing the situation and designing long-term policies (Atighechian, Maleki, Aryankhesal, & Jahangiri, 2016; Kitagawa, 2015; Visser, Petersen, & Ligtvoet, 2014; Zake & Hauser, 2014). The knowledge of disaster management and preparedness needs to be generated and disseminated by the concerned authorities (Holguín-Veras, Jaller, Van Wassenhove, Pérez, & Wachtendorf, 2014) even though we found

that the information about the phenomenon has not been delivered effectively among the people. In most of the countries where disasters recurrently occur, people are aware of the knowledge and its implications (Habib et al., 2013; Hany Abulnour, 2014; Lindell, 2013; Teeuw, Leidig, Saunders, & Morris, 2013). In Pak, despite large-scale disasters of earthquakes, landslides, and floods of mild to high intensity, measures of preparedness lack significantly (Aziz, 2016). Generally, disaster-related information is disseminated and absorbed by the people. In the case of this research, excessive information has been found missing. The vulnerable communities are normally imparted training to be prepared and cope with the situation. We found that training workshops are not imparted to the masses generally and particularly to university youth. Similarly, the awareness is raised in easy and understandable language i.e., regional, and local languages to keep in mind the level of people (Cutter, 2003; Ibrahim, Fakharu'l-razi, & Aini, 2003; Wilson & Oyola-Yemaiel, 2001). In Pak, most of the information is published in English which is the international language and used only to deal with official affairs, while regional and local languages are ignored. In developed nations, national disaster management authorities were formulated consisting of regional and local authorities (Chen, Wu, & Lai, 2006; Grove, 2013; Kitagawa, 2016). The capacity building of the institutions is focused on strengthening the institutions to cope with any hazard of disasters (Coppola, 2006; Cutter, 2003; Ibrahim et al., 2003). Even though in PaK, SDMA is formulated, it cannot cope with natural disasters. Similarly, governments take the initiative to design the policy according to the subject and coordinate with all the stakeholders to deal with the phenomenon, as governments have a responsibility to protect the people and take effective measures by using the state apparatus. Here, we found that the government, although formulated as an institution, has a low capacity not even to deal with natural disasters. Youth is considered important for the development of any country (Baker & Refsgaard, 2007; Bayrak, 2009; Chen et al., 2006; Iyer & Mastorakis, 2006; Price & Vojinovic, 2008). Countries invest in the youth by building their capacity to contribute to mainstream development (Ahenkorah-Marfo & Borteye, 2010; Gruman, Chhinzer, & Smith, 2011; Wang & Yuan, 2010). We found that the government does not have any vision or capacity to involve youth in the process but rather uses it for political purposes. Normally, people become a source of disseminating information if provided appropriately (Biswas & Choudhuri, 2012; Prabhakar et al., 2012). In our case, the information is either provided in a foreign language or partially. Disaster management has been included in the syllabus and taught at secondary to higher levels, while bachelor and master programs are taught at university and college levels. Similarly, the certification of diplomas and skills in dealing with disasters is also included. We found a lack of academic and professional education on the phenomenon.

Conclusion

The study revealed that most of the students lack knowledge of disaster management and preparedness. Informally, it has been a hot topic for discussion among the people, but neither the government nor any other stakeholder is involved in disaster risk reduction-related activities. Moreover, lack of knowledge, skills, and training have not been provided by the concerned authorities. It is, thus, concluded that the awareness level among youth is very low, and they do not even know about most of the disaster phenomena. They are found unaware of the disaster phases and basic knowledge about the risks and vulnerabilities. The concerned institutions lack capacity building either to strengthen the capacities of youth to combat the disasters and related phenomena or disseminate the knowledge. Moreover, disaster management should be taken as a subject of great concern, especially among the youth, where awareness is needed, and it is alarming for the youth to be unaware of the knowledge of potential disasters in the area. Awareness programs should be initiated for the youth and general masses to make them aware of the disasters and the topography of the area through training programs to utilize the university youth to take their active part to mitigate the effects of the disaster.

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