



# PTSD and Its Influencing Factors among the Government School Teachers after Nepal Earthquake 2015

Ganesh Amgain<sup>\*1</sup>, Kapil Amgain<sup>2</sup> and Sujana Neupane<sup>3</sup>

<sup>1</sup>Tribhuvan University, Department of Psychology, Kirtipur, Kathmandu, Nepal

<sup>2</sup>Tribhuvan University, Manmohan Memorial Institute of Health Sciences, Soaltee Mode, Kathmandu, Nepal

<sup>3</sup>Tribhuvan University, Institute of Medicine, Manmohan Cardiothoracic Vascular and Transplant Centre, Maharajgunj

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## ABSTRACT

Earthquake is one of the frequent non-human natural disasters that would expose an individual to the risk of potentially traumatic events. Traumatic events like earthquake leads the survivors to different resilient responses, short-term and long-term clinical and sub-clinical symptoms or consequences that fall outside of diagnostic criteria. Post Traumatic Stress Disorder (PTSD) represents one of the most frequently occurring psychiatric disorder to earthquake exposure. Research evidences suggest variation in the prevalence and factors effecting PTSD including age, sex, exposure to other traumatic situations and so on. The present study aims at exploring the prevalence of PTSD and its influencing factors. 169 school teachers of 19 different government schools of Kavre district who experienced the earthquake of April 25<sup>th</sup>, 2015 (Richter Magnitude 7.8) were assessed by using the PTSD checklist. The result showed significantly higher rates of PTSD among the school teachers effecting females more than males. There was statistically significant association between sex and PTSD. Besides sex, other factors influencing PTSD included their situation after earthquake, beliefs about the huge aftershock and life after earthquake. There was strong association between their belief about the huge aftershock, life and status after earthquake and PTSD where as the situation of the subjects during earthquake had marginal association with the PTSD.

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## Introduction

The non-human disasters like earthquake leading to immense destruction, severe physical and human loss, has been found to have brought change in the social economic development of the society. Among those disasters, earthquakes are one of the most frequent natural disasters occurring across the world and, among exposed individuals; Post-Traumatic Stress Disorder (PTSD) represents the most frequently occurring psychiatric sequelae<sup>(1)</sup>. Survivors who experienced uncommon disasters will have stress responses such as being at loss, anxiety and depression. Most people will gradually recover after adjusting for several weeks or months. However, some people will not recover due to excessive psychological trauma, therefore repeatedly having symptoms of numbness, increased alertness, and problems of memory and cognition, which is typical of post-traumatic stress disorder<sup>(2)</sup>.

People who have survived a catastrophe such as an earthquake may develop psychological trauma and psychiatric disease, including post-traumatic stress disorder (PTSD). PTSD is a mental health problem that can occur following the direct experience or witnessing of life-threatening events such as natural disasters, terrorist incidents, serious accidents, or physical or sexual assault in adult or childhood. It is a medically recognized anxiety disorder that occurs in normal individuals under extremely stressful conditions. People who suffer from PTSD often experience symptoms including difficult sleeping, nightmares and uncontrollable thoughts, feeling estranged from others

and depression. The symptoms can be severe enough and last long enough to significantly impair the person's ability to function in social or family life<sup>(3)</sup>.

The prevalence of PTSD reported in victims of earthquake trauma ranges from 10.3 % - 66.7%<sup>(4)</sup>. Younger age acts as a stronger predictive factor for PTSD. The risk of developing PTSD was found to be greater than the risk of major depression after traumatic events at age 13 or older<sup>(5)</sup>. As a special group of young adults, college students are at an important period of physical and mental development, their PTSD symptoms and the factors affecting individual susceptibility to PTSD are not well illustrated.

School teachers are in the important position of normalizing the students and other people of the community after the disaster. They have to play significant roles in helping the student continuing education aftermath of earthquake. Despite the different literature on post traumatic reactions among the earthquake survivors, teachers for having been in position of giving care, are so involved in taking care of others to handle their post traumatic effects rather than taking care of their own symptoms. They are equally vulnerable to PTSD symptoms, however. This study was conducted to investigate the prevalence of PTSD and other influencing factors of PTSD among the government school teacher of Kavre district.

## Objectives

### General Objectives

❖ To study the prevalence of PTSD and its influencing

factors among the government school teachers after Nepal Earthquake 2015.

#### Specific objectives

- ❖ To study PTSD of the government school teachers of Kavre district.
- ❖ To study the sex differences in PTSD of government school teachers of Kavre district.
- ❖ To study the influencing factors of PTSD aftermath of Nepal Earthquake 2015.

#### METHOD

Kavre, one of the most affected districts by Nepal earthquake 2015, was the area of the study. Complete enumeration of teachers teaching in 19 different government schools devastated by the earthquake were taken as the samples for this exploratory research that represents the complete enumeration of the sample. The schools were selected by using random sampling method. Out of those 179 school teachers, 169 (94 males and 75 females) took part in the research, which accounted the response rate of 94%. The study was done after the two months of Nepal Earthquake 2015.

#### Investigation tools

##### PTSD Checklist

PTSD checklist developed on the basis of DSM-IV PTSD diagnostic criteria was the major investigation tools for the research. The PTSD checklist (PCL: Weathers, Litz,

Huska & Keane, 1994) is a 17 items self-report rating scale instrument that parallels diagnostic criteria A,B,C and D for PTSD, as delineated in the fourth edition of the Diagnostic and statistical manual of mental disorder (DSM-IV), American psychiatric association 1994). It queries directly about the symptoms included in DSM-IV PTSD criteria, A = exposed in the event, B = Re-experiencing, Criteria C = Avoidance / Numbing, Criteria D = Hyper arousal. The frequency and intensity of the 17 symptoms of PTSD are rated on a 5 point scale, where 0 indicates that the symptom has not occurred and 4 indicates that the symptom occurs nearly every day.

##### Self report questionnaire

The self report questionnaire including the in-depth information about the situation during and after the earthquake, their beliefs about another huge earthquake. More than that, it included the information about with whom and where were they during the time of earthquake.

#### RESULTS

Majority of the teachers were found to have moderate PTSD. Having the look at the sex differences greater number of females (M = 3.546, SD= 0.85704) were found to experience PTSD symptoms in comparison to the males (M = 2.8613, SD = 0.77188). The chi-square test shows the significant association between the sex and PTSD of an individual.

**Table No 1. Prevalence of PTSD.**

Sex	PTSD				Total	Mean	S. D	Chi-square test P value
	No PTSD	Mild PTSD	Moderate PTSD	Severe PTSD				
Male	24	21	29	20	94	2.8613	.77188	0.01
	14.2%	12.4%	17.2%	11.8%				
Female	3	13	28	31	75	3.5460	.85704	
	1.8%	7.7%	16.6%	18.3%				
Total	27	34	57	51	169	3.1652	.98124	
	16%	20.1%	33.7%	30.2%				

**Table no 2. Status after Earthquake \* PTSD.**

Status After Earthquake	PTSD				Total	Chi-square test P value
	No PTSD	Mild PTSD	Moderate PTSD	Severe PTSD		
Safe	1	6	2	--	9	0.01
	0.6%	3.6%	1.2%	--		
Unsafe	11	17	39	35	102	
	6.5%	10.1%	23.1%	20.7%		
Home completely destroyed	11	11	14	16	52	
	6.5%	6.5%	8.3%	9.5%		
Not at all affected	4	--	2	--	6	
	2.4%	--	1.2%	--		
Total	27	34	57	51	169	
	16%	20.1%	33.7%	30.2%		

**Table No 3. Life after Earthquake \* PTSD.**

Life After Earthquake	PTSD				Total	Chi-square test P value
	No PTSD	Mild PTSD	Moderate PTSD	Severe PTSD		
Tent	17	24	42	45	128	0.05
	10.1%	14.2%	24.9%	26.6%		
Cottage	1	1	1	6	9	
	0.6%	0.6%	0.6%	3.6%		
In relatives' home	--	--	1	--	1	
	--	--	0.6%	--		
Rent	4	1	5	--	10	
	2.4%	0.6%	3.0%	--		
Home	5	8	8	--	21	
	3.0%	4.7%	4.7%	--		
Total	27	34	57	51	169	
	16%	20.1%	33.7%	30.2%		

Table no 4. State during Earthquake \* PTSD.

During Earthquake	PTSD				Total	Chi-Square test P value
	No PTSD	Mild PTSD	Moderate PTSD	Severe PTSD		
Alone in Home	1	3	8	2	14	0.42
	0.6%	1.8%	4.7%	1.2%	8.3%	
With Family in Home	11	14	20	19	64	
	6.5%	8.3%	11.8%	11.2%	37.9%	
Alone outside the home	5	7	9	6	27	
	3%	4.1%	5.3%	3.6%	16%	
With group outside the home	10	10	20	18	58	
	5.9%	5.9%	11.8%	10.7%	34.3%	
With group in Office	--	--	--	6	6	
	--	--	--	3.6%	3.6%	
Total	27	34	57	51	169	
	16%	20.1%	33.7%	30.2%	100%	

Table no 5. Belief Regarding Huge Aftershock \* PTSD

Belief Regarding Huge After shock	PTSD				Total	Chi-Square test P value
	No PTSD	Mild PTSD	Moderate PTSD	Severe PTSD		
Yes	10	25	44	45	124	0.01
	5.9%	14.8%	26.0%	26.6%	73.4%	
No	17	9	13	6	45	
	10.1%	5.3%	7.7%	3.6%	26.6%	
Total	27	34	57	51	169	
	16%	20.1%	33.7%	30.2%	100%	

Another influencing factor of PTSD was thought to be the status of the earthquake survivors. Majority of the subjects were unsafe and home completely destroyed during the earthquake and very nominal subjects were safe and their houses were not at all affected. Significant association was found in between status after earthquake and PTSD. Subjects who were found safe with their home not being affected at all developed no significant PTSD symptoms whereas greater percentage of people (20.7%) who were found unsafe during the earthquake showed severe PTSD symptoms. Life after earthquake obviously would bring a lot of situations that would be traumatic for the survivors. The result showed the significant association between life after earthquake of the subjects and PTSD. Subjects who are compelled to stay in tent aftermath of earthquake (26.6%) suffered from severe PTSD symptoms. On the contrary, very few of them who are living in cottage had PTSD and subjects staying in relatives' home, rented home and their own home had just the traces of PTSD and none of them who fell in this category developed PTSD.

The above table 4 shows the association between state of the subjects during the earthquake and PTSD. The result depicted the marginally significant association ( $p=0.42 > 0.05$ ) of state of the subject during the earthquake experience and PTSD. But the subjects who were in the groups during the earthquake experienced PTSD.

The belief of having to survive another huge aftershock after the disaster has taken place would change the way an individual normalizes. The present research showed the statistically strong association ( $p=0.01 < 0.05$ ) between belief of huge aftershock and PTSD. The significant number of subjects (26%) believing in chances of having another huge aftershock experienced PTSD than those who don't believe in it.

#### Discussion and Conclusion

The result showed that majority of the school teachers understudy had PTSD.

There was significant difference in the PTSD of male and female teachers. Greater percentage of Female teachers were found to have suffered from PTSD symptoms than males that corresponds to the fact that women are approximately twice as likely as are men to meet criteria for PTSD<sup>(6)</sup>, and are over four times as likely to have chronic PTSD<sup>(7)</sup>. Different factors are found to be associated with the risk factors of PTSD in women than in men. Among these factors Tolin and Foa<sup>(8)</sup> considered that women might be more likely to be traumatized than men, and thus the elevated risk of PTSD in women might be due to an overall higher risk of trauma. Yet some other studies find very contrasting result has suggested that men and boys are more likely than women and girls to experience potentially traumatic events<sup>(9)</sup>.

More than the sex differences, other influencing factors of PTSD included the state of the subjects during the earthquake i.e. where and with whom were they during the event, situation after earthquake, beliefs about the huge aftershock and life after earthquake. It is found that the status of the subjects after earthquake and PTSD has strong positive association. Majority of people who were found unsafe during the earthquake showed severe PTSD symptoms than the subjects whose homes are safe. Similarly, significant association between life of the subjects after earthquake and PTSD is observed. Subjects being compelled to stay in the tent aftermath of earthquake suffered from severe PTSD symptoms.

The result showed marginally significant relationship between the state of the subjects during the earthquake and PTSD. Yet, the subjects who were in the groups during the earthquake whether or not they are in home or office or outside which may be due to fact that the reactions of their beloved ones is even more overwhelming and traumatic for the subjects than the earthquake, this is what they stated in the self report questionnaire. In addition, the subjects' belief of experiencing another huge aftershock is contributing a lot to

their PTSD and the present research uncovered the statistically strong association between them.

### Conclusion

To conclude it is observed that majority of the school teachers have PTSD. Among them female teachers are more affected by PTSD than male teachers and there is significant association between sex and PTSD. Besides sex, other factors influencing PTSD includes their situation after earthquake, beliefs about the huge aftershock and life after earthquake. There is strong association between their belief about the huge aftershock, life and status after earthquake and PTSD where as the situation of the subjects during earthquake including where and with whom where they were have marginal association with the PTSD that an individual may face.

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