

## To examine delayed PTSD symptomatology over time among trauma survivors in Pakistan

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### Abstract

This study investigates the presence of delayed PTSD symptoms after a period of twenty months in individuals who had an exposure to a traumatic event and to distinguish them from individuals who had no direct exposure but were affected indirectly. A purposive sample of fifty one individuals comprising Group 1 (Female N=30) and Group 2 (Male N=21) examined in this study. Two standardised psychological tests known as Clinician- Administered PTSD Scale (CAPS) and PTSD Checklist – Civilian Version (PCL-C) were used for this purpose. Our results indicated a significant difference ( $P<.001$ ) between Group 1 and Group 2 and distinguished Group 1 (Individuals with direct exposure to trauma) from Group 2 (Individuals with indirect exposure to trauma) on the basis of PTSD symptomatology. This suggests the presence of delayed PTSD symptoms in individuals who were exposed to a traumatic event than the individuals with no direct exposure to a traumatic event after a long period of a recovery phase. Our results were found consistent with the previous studies and add the findings of this study to the scientific literature in the context of developing delayed PTSD symptoms in response to a traumatic event.

**Key words:** Delayed PTSD symptoms, CAPS, PCL-C, Trauma

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Despite numerous technological, infrastructural developments and the so called globalization, war, ethnic violence, crime, massacres, prejudice, discrimination and racism continue to reign in most parts of the world. However, the persistent increase in violence after 9/11 in many parts of the world and particularly in Pakistani society has been putting devastating effects on people lives. Suicide attacks, explosions, and even safety precautions such as long curfew hours have caused damage on an unprecedented scale (Khalily et al, 2010). These circumscribed conditions have eroded peoples' sense of security and safety at both the individual and the community level. Ample evidence has shown that deliberate violence creates longer lasting effects than natural disaster or accidents (Schenlger et al, 2002). However, many researchers agreed that the psychological outcome of the communities as a whole will be resilience, not psychopathology (Galea et al, 2002). Nevertheless, greatest magnitude of exposure to the traumatic event (Galea et al, 2003), and a continuous violence and threat to life has a damaging effect to the psychological health of many people in general and particularly in Pakistani society (Khalily et al, 2010).

As a consequence, psychological trauma “an event outside normal human experience” is on the rise in Pakistani society, prevailing in the whole country (Medicines Sans Frontiers, 2008), which generally leaves people feeling powerless, helpless and paralysed (Herman, 1992; Abdel-hamid et al, 2004). It has been well documented that exposure to severe psychological trauma results in psychological and physical health problems (Boscarino, 1997). As a result, individuals manifest a number of symptoms of psychological distress in a range of psychiatric disorders such as anxiety, depression, eating disorder, obsessive compulsive disorder, post-traumatic disorder (PTSD) and substance abuse disorder, which is currently a serious problem in Pakistan (Khalily 2010), and negatively impacts on all aspects of their lives (Khalily, 2011). Among these disorders, post-traumatic stress disorder (PTSD) is found frequent in Pakistani society particularly in the young population (Khalily, 2011). PTSD, the name given to a cluster of symptoms which is often seen in trauma survivors (AY Shalev, et al, 1996; Pat-Horenczyk, 2004), is resulting from exposure to an extreme traumatic stressor. PTSD has a number of unique defining features and diagnostic criteria including exposure to a traumatic stressor, re-experiencing symptoms, avoidance and numbing symptoms, symptoms of increased arousal, duration at least one month and significant distress or impairment of functioning (DSM-1V, 1994).

The possibility of developing PTSD is a function of many variables, the most important being exposure to a traumatic event particularly in women (Brewin et al., 2002; Norris et al., 2002). PTSD is highly widespread lifetime disorder that frequently continues for

years (Kessler, et al., 1995), with an increasing recognition of deep and long-lasting detrimental effects on health status and quality of life (Holbrooke et al., 2010). Recent studies have suggested that a significant proportion of the population may experience delayed PTSD symptoms, whereby individuals exposed to a traumatic event do not meet criteria at an initial stage, but do meet criteria at a later point (Buckley et al., 2001; Prigerson et al., 2001). Subsequently, PTSD as a result of circumscribed at risk population (McFarlane, 2004) has stimulated research and has been the focus of attention on what constitutes a traumatic event among research investigators (Erbes, et al., 2007).

So, in this study we sought to investigate the presence of PTSD symptoms after twenty months of duration in the survivors of a terrorist attack, where a suicide bomber exploded himself in a public university in the capital city of Pakistan. The explosion took place in the female cafeteria of the International Islamic University Islamabad on October the 10<sup>th</sup> 2009 and had killed 6 individuals on the spot and many got seriously injured, and subsequently created chaos among the students and academic and non-academic staff. The effect of this explosion was not confined only to the individuals present at the time of explosion on the blast site, but has an unprecedented effect on the overall mental health of people around. Therefore in this paper we attempted to explore the presence of delayed PTSD symptoms in individuals who witnessed or were present on the blast site during explosion time and also to investigate the occurrence of PTSD symptoms in the individuals who were not the direct victim or witness of the explosion but were present at the time of explosion and were distant from the blast site.

## **Method**

### **Subjects**

The survivors of the trauma who witnessed or were present at the time of explosion on the blast site were identified in the university register and contacted through their respective departments. The survivors directly exposed to the blast were all female included in Group 1 and individuals who were present at the time of explosion but were distant from the blast site were all male assigned Group 2 who were contacted through a notice put in the main library to participate in this study voluntarily. They are all post-graduate adult students (<18) and are currently enrolled in the university. A purposive sample (N=51) of individuals comprising Group1 (Female N=30) and Group 2 (Male 21) with an age range of female (Mean age= 22.7 SD= 1.9) and male (Mean age= 23.03, SD= 3.47) participated voluntarily. We used two

standardised instruments known as Clinician- Administered PTSD Scale (CAPS) and PTSD Checklist – Civilian Version (PCL-C) to investigate the presence of PTSD symptoms.

### **Instruments**

*Clinician-Administered PTSD Scale (CAPS).* Developed at the National Center for PTSD, the Clinician- Administered PTSD Scale (CAPS) has become the "gold standard" for assessing posttraumatic stress disorder in individuals over age 15. This user-friendly structured interview is ideal for screening, differential diagnosis, confirmation of a PTSD diagnosis, or identifying Acute Stress Disorder. The CAPS appears to have excellent psychometric properties such as internal consistency (Alpha coefficient) for the severity scores for each of the three symptoms clusters ranged from .85 to .87 and internal consistency for all 17 items is .94 (Blake et al ,1995). The CAPS consists of 30 carefully worded interview questions that target DSM-IV criteria for PTSD without leading the respondent. These items assess core PTSD symptoms and related issues such as: Re-experiencing Symptoms, Avoidance and Numbing Symptoms, Hyperarousal Symptoms, Trauma-Related Guilt, Dissociation, Subjective Distress, Functional Impairment, Onset Duration, Symptom Severity, Symptom Improvement In addition, the CAPS includes a protocol for assessing Criterion A, a diagnostic requirement that the patient has experienced at least one traumatic event involving both a life threat or serious injury and an overwhelming emotional response. The CAPS provides several administrations and scoring options suited to various clinical needs and can be administered by a clinician and also be administered by a trained paraprofessional.

*PTSD Checklist – Civilian Version (PCL-C).* The PCL is a standardized self-report rating scale for PTSD comprising 17 items that correspond to the key symptoms of PTSD. Two versions of the PCL exist: 1) PCL-M is specific to PTSD caused by military experiences and 2) PCL-C is applied generally to any traumatic event. We used the later version in this study. It takes approximately 5-10 minutes to complete a PCL-C. The PCL-C has demonstrated strong psychometric properties. Estimates of internal consistency (Cronbach's alpha) range between .94 (Blanchard et al, 1996) to .97 (Weathers et al. 1993). Test-retest reliability has been reported as .96 at 2-3 days and .88 at 1 week (Blanchard et al., 1996; Ruggiero et al., 2003).

### **Procedure**

This collaborative study was conducted by the Department of psychology International Islamic University Islamabad and Department of Psychology Adult Mental Health Services (HSE-west) Ireland. No identifying data relating to the subjects was included

in this study; however, ethical approval was attained from the ethics committee of the psychology department, International Islamic university Islamabad. Each individual's verbal consent was secured. The CAPS was administered individually by a trained faculty member of the psychology department and PCL-C a self-report rating scale was administered by each individual participant. Each individual took an hour for the completion of both instruments. A senior faculty member did the scoring according to the manual. The data was then examined and statistical analysis was performed using Statistical package for social sciences 15.0 for windows (SPSS 15.0 for Windows, SPSS Inc., Chicago, Illinois, USA). The Student t test was applied to find out the difference between the scores of Group 1 and Group 2 on CAPS and PCL-C.

### Results

Table 1 results indicate a significant difference ( $P < .001$ ) between the individuals in Group 1 and Group 2 on re-experiencing symptoms, Avoidance and numbing symptoms, and Hyperarousal symptoms, which suggest the presence of PTSD symptoms in individuals who were present on the blast site at the time of explosion comparatively to the individuals who were not present on the blast site. The presence of these symptoms fulfils the criteria for the diagnosis of PTSD for the individuals in Group 1 and distinguishes them from Group 2 individuals on the basis of PTSD symptomatology. Furthermore, Table 2 results also indicate a significant difference ( $P < .001$ ) between the individuals in Group 1 and Group 2 on duration of disturbance, impairment in functioning, PTSD diagnoses, global rating and associated features. This difference pointed out that Group 1 individuals endure PTSD symptoms for longer than a month and portrayed impairment in social, occupational or other important areas of functioning comparatively to the individuals in Group 2. This difference also distinguishes Group 1 individuals from Group 2 in the context of PTSD diagnosis, global rating and associated features such as feeling of derealisation, depersonalization and reduction in awareness of surroundings. Moreover, table 3 results indicate a significant difference ( $P < .001$ ) between the scores of individuals in Group 1 and Group 2 on PCL-C, which reflect the existence of PTSD symptoms in individuals in Group 1 comparatively to Group 2 and highlighting the presence of PTSD symptoms in clusters such as re-experiencing symptoms, avoidance and numbing symptoms and hyperarousal symptoms, and espouses to fulfil DSM-1V criteria of PTSD for individuals in Group 1. These significant ( $P < .001$ ) differences distinguished individuals in Group 1 from individuals in Group 2 on the basis of PTSD symptomatology and provide sufficient evidence that individuals who witness or present on

the blast site at the time of explosion exhibited delayed or unresolved PTSD symptoms even after the recovery phase as compare to the individuals in Group 2..

Symptoms	Group1 (N=30) Mean (SD)	Group 2 (N=21) Mean (SD)	t	p
Re-experiencing symptoms	21.20 (13.04)	3.00 (6.32)	5.92	.001
Avoidance and numbing symptoms	25.70 (15.37)	5.43 (11.32)	5.14	.001
Hyper arousal symptoms	24.70 (12.33)	1.29 (2.83)	8.52	.001

df: 49

Symptoms	Group1 (N=30) Mean (SD)	Group 2 (N=21) Mean (SD)	t	p
Duration of disturbance	1.00 (0.00)	1.86 (0.36)	13.15	.001
Impairment in functioning	6.00 (4.22)	0.71 (1.42)	5.51	.001
PTSD diagnoses	1.40 (0.50)	2.71 (0.72)	7.73	.001
Global Rating	5.40 (3.35)	0.00 (0.00)	6.99	.001
Associated features	21.10 (12.88)	1.14 (2.87)	6.96	.001

df: 49

Groups	N	Mean	SD	t	p
Group 1	30	55.00	24.59		
Group 2	21	24.86	13.80	5.08	.001

df: 49

### Discussion and Conclusion

In this study we attempted to investigate delayed PTSD symptoms in the survivors of a traumatic event and the difference on the basis of PTSD symptomatology between those who directly experience and were present on the blast site, and those who experienced indirectly and were not present on the blast site but were present on the day nearby. Our

results indicated a significant difference ( $P < .001$ ) between the individuals who directly experience a traumatic event and individuals who indirectly experience the same situation suggesting the presence of PTSD symptoms in the former. This difference indicated that after a recovery phase the survivors who were present at the time of explosion on the blast site reported the occurrence of delayed PTSD symptoms, which distinguishes them from those who were not present on the blast site but were present at the time of explosion nearby and were indirectly affected. However, some common symptoms of PTSD were found in both groups but Group 1 fulfil the DSM-IV criteria A, B and C while the symptoms of Group 2 might be because of general distress. It appears from the evidence that some people will be more affected by a traumatic event for a longer period of time than others, depending on the gender, nature of the event and the nature of the individual who experienced the event such as devastation and destruction that has occurred as well as injuries and lives lost (Smith, et al., 1999).

In our study we found that the individuals who were present on the blast site exhibited PTSD symptoms as a response to the devastating affect of the blast as many people who directly experience or witness encounter behavioural and emotional readjustment problems than the people who indirectly experience (North, 1994). The recovery of the former may take a longer time and needs a prolonged period of adjustment or return to equilibrium. One of the most unbearable effects of a traumatic event is post-traumatic stress disorder (PTSD) which has been reported in our study by the individuals who had direct exposure to a traumatic event were all female suggests that the developing of PTSD is linked to the exposure of traumatic event particularly in women, which has been found consistent with the previous studies (Bromet et al., 1998; Kessler, et al., 1995; Brewin et al., 2000).

However, we also noted that the presence of PTSD symptoms was not taken seriously and left unresolved by the individuals who suffer because of cultural differences in the desirability of reporting psychiatric symptoms (Norris et al., 2001) as well as by the mental health care system non focus policy to provide therapeutic assistance to ameliorate their sufferings. It is very important that emotional needs are met as they may be very significant instead of just relying only on resilience, especially for those who have been severely affected as a result of human inflicted trauma. It is evident that after the necessary activities of the rescue phase it might lead the survivors to elation, but this period may be associated with the honeymoon time and the persistence of unresolved PTSD symptoms which may appear in a later stage as we found in our study. It has been reported that delayed PTSD symptoms may result from classical conditioning for fear and anxiety responses to trauma cues, reinforcing

avoidance and re-experiencing symptoms (Gray et al., 2004). This suggests that the investigation of PTSD symptoms is paramount in order to develop an integrated strategy with the mental health care system to provide professional help to the survivors of trauma particularly those who were identified in our study. Therefore, it is suggested that the psychology Department of International Islamic University Islamabad might initiate a collaborative strategy with the Department of Psychiatry Pakistan Medical Institute Islamabad (PIMS) for the psychological treatment of the survivors.

Furthermore, the findings of this study may be taken as a sample for a national mental health survey to explore the mental health issues countrywide as this country suffers from violence for the last many years (Khalily, 2011). To recap Pakistani society a victim of terrorism demanding the natural need of human beings to see the world as predictable, orderly, and convenient. Failure to get these, many people would feel frustrated and subsequently would lead them to helplessness, anger, and desire for revenge. Therefore, it is the need of the hour to establish a post graduate level programme for mental health emphasising on the profound understanding of psychological trauma (Khalily, Clark, & Jahangir, 2010), addiction (Khalily, 2010) and other mental health issues (Khalily, 2011) and their treatment compatibility to Pakistani norms and culture.

To conclude we found the existence of delayed PTSD symptoms in individuals who had a traumatic experience over a time period of twenty months and we also noticed that the unresolved PTSD symptoms distinguished them from individuals who had an indirect experience with the same traumatic event. This suggests that the release of PTSD symptoms will not be left only on resilience particularly in case of women and the survivors were being the witness of a manmade disaster. This study recommends the investigation of PTSD symptoms at the earlier stage for a timely therapeutic assistance. This study also provides a base to build a case for a national epidemiological survey to investigate the existence of mental health problems particularly PTSD as a consequence of persistence violence and internal displacement in Pakistani society and suggests a post-graduate course for the profound understanding of mental health issues in general and PTSD and addiction in particular as major public health issues.

### References

Abdel-hamid, A., Lawler, J., & El Sarraj, E. (2004). Gender and other predictors of anxiety and depression in a sample of people visiting primary care clinics in an area of political conflict: Gaza Strip. *RAHAT Medical Journal*, 2(1), 81-92.



- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC, American Psychiatric Association.
- Ay Shalev, T. Canetti, P. L., & Schreiber, S. (1996). Predictors of PTSD in injured trauma survivors: a prospective study. *American Journal of Psychiatry, 153*, 219-225.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000) Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal Consulting Clinical Psychology, 68*, 748–766.
- Blanchard, E. B., Jones Alexander, J., Buckley, T. C., & Forneris, C. A. (1996). Psychometric properties of the PTSD Checklist (PCL). *Behaviour Research and Therapy, 34*, 669-673.
- Boscarino, J. A. (1997). Diseases among men 20 years after exposure to severe stress: Implications for clinical research and medical care. *Psychosomatic Medicine, 59*, 605–614.
- Blake, D. D., Weathers, F. W., Nagy, L. M., Kaloupek, D. G., Gusman, F. D., Charney, D. S., Keane, T. M. (1995). Development of a Clinician-Administered PTSD Scale. *Journal of Traumatic Stress, 8*(1), 75-89.
- Buckley, T. C., Blanchard, D. B., & Hickling, E. J. ( 1996). A prospective examination of delayed onset PTSD secondary to motor vehicle accidents. *Journal Abnormal Psychology, 105*, 617–625.
- Bromet, E. J., Sonnega, A., & Kessler, R. C. (1998). Risk factors for DSM-III-R posttraumatic stress disorder: Findings from the National Co morbidity Survey. *American Journal of Epidemiology, 147*, 353–361.
- Erbes, C., Westermeyer, J., Endahl, B., & Johnsen, E.(2007). Post-traumatic stress disorder and service utilization in a sample of service members from Iraq and Afghanistan. *Mil Med, 172*, 359-363.
- Galea, S., Vlahov, D., Resnick, H., Ahern, J., Susser, E., Gold, J., Bucuvalas, M., & Kilpatrick, D. (2003). Trends of probable post-traumatic stress disorder in New York City after the September 11 terrorist attacks. *American Journal of Epidemiology, 158*(6), 514-524.
- Galea, S., Ahern, J., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov, D. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *New England Journal of Medicine, Special Report 346*, 982-987.

- Gray, M. J., Bolton, E. E., & Litz, B.T.(2004) A longitudinal analysis of PTSD symptom course: Delayed-onset PTSD in Somalia Peacekeepers. *Journal of Consulting Clinical Psychology, 72*, 909–913.
- Holbrooke, T. L., Galarneau, M. R. Duye, J. L., Quinn, K., & Dougherty, A. L. (2010). Morphine use after combat injury in Iraq and post-traumatic stress disorder. *The New England Journal of Medicine, 362*(2), 110-117.
- Herman, J. L. (1992). *Trauma and recovery: The aftermath of violence-from domestic abuse to political terror*. New York: Basic Books.
- Kessler, R. C., Sonnega, A., Brmet, E., Hughes, M., & Nelson, C. B.( 1995). Post-traumatic stress disorder in the national co morbidity survey. *Archives of General Psychiatry, 52*, 1048-1060.
- Khalily, T. M., Fooley, S., Hussain, I., & Bano, M. (2010). Violence, psychological trauma and possible acute post- traumatic interventions in Pakistani Society. *Australasian Journal of Disaster and Trauma Studies, 11*(7), 1-7.
- Khalily, T.M (2010). Developing a coordinated response to drug abuse in Pakistan. *Journal of Interprofessional Care, 24*(2), 168–172.
- Khalily T. M., Clark, L. Jahangir, F. (2010). Alpha-theta Neurofeedback therapy a non-invasive treatment for addiction and post-Traumatic Stress disorder. *Journal of Social Sciences 3*(2), 84-92.
- Khalily, T. M. (2011). Mental health problems in Pakistani society as a consequence of violence and trauma; a case for better integration of care. *International Journal of Integrated Care*.
- McFarlane A. (2004). The contribution of epidemiology to the study of traumatic stress. *Social Psychiatry and Psychiatric Epidemiology, 39*, 874–882.
- Medicines Sans Frontiers (2010). Growing violence makes access to health care extremely difficult in northwestern Pakistan (November 2009). <http://www.msf.org/msfinternational/invoke.cfm>
- North, C. S., Smith, E. M., & Spitznagel, E. L. (1994). Posttraumatic stress disorder in survivors of a mass shooting. *American Journal of Psychiatry, 151*, 82-88.
- Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., Kaniasty, K. (2002). 60,000 Disaster victims speak, part I: An empirical review of the empirical literature, 1981–2001. *Psychiatry, 65*, 207–239.

- Pat-Horenczyk, R. (2004). Post-traumatic distress in Israeli adolescents exposed to ongoing terrorism: selected findings from school-based screenings in Jerusalem and nearby settlements. *Journal of Aggression, Maltreatment and Trauma*, 9(3/4), 335-347.
- Prigerson, H. G., Maciejewski, P. K., Rosenheck, R. A. (2001). Combat trauma: Trauma with highest risk of delayed onset and unresolved posttraumatic stress disorder symptoms, unemployment and abuse among men. *Journal of Nervous and Mental Disease*, 189, 99-108.
- Ruggiero, K. J., Del Ben, K., Scotti, J. R., & Rabalais, A. E. (2003). Psychometric Properties of the PTSD Checklist--Civilian Version. *Journal of Traumatic Stress*, 16, 495-502.
- Smith, D. W., Christiansen, E. H., Vincent, R., & Hann, N. E. (1999). Population effects of the bombing of Oklahoma City. *Journal of the Oklahoma State Medical Association*, 92, 193-198.
- Schlenger, W., Caddell, J., Ebert, L., Jordan, B. K., Rourke, K., Wilson, D., Thalji, L., Dennis, J. M., Fairbank, J., & Kulka, R. (2002). Psychological reactions to terrorist attacks: findings from the National Study of Americans' Reactions to September 11. *Journal of the American Medical Association*, 288(5), 581-588.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility*. Paper presented at the 9th Annual Conference of the ISTSS, San Antonio, TX.