PCTSS (Post Covid-19 Traumatic Stress Syndrome)
Addressing the trauma accrued by the Covid-19 Crisis and preparing for reintegration into the workplace and society when the pandemic comes to an end.

By Robert L. Perkins Ph.D. C.P. B.C.E.T.S.

Dr. Robert L. Perkins is a Psychophysiologist, Researcher and Professor of Applied Psychophysiology at the College of Certified Psychophysiologists in Anaheim California. He is a Lead Course Facilitator of Critical Incident Stress Debriefing with the Ontario Critical Incident Stress Foundation and is also a member of their Board of Directors. For further information contact the O.C.I.S.F. at 1-888-291-6324 or info@ocisf.org

As the world at large scrambles to identify, contain and control the COVID-19 virus, once the medical community has won the battle against the virus and the hope of a more normal way of life is in the near future, we need to prepare to deal with newest enemy of reestablishing a normal life and that is Post Covid-19 Traumatic Stress Syndrome (PCTSS). It may not affect every person of the population, but much like Post Traumatic Stress Disorder (PTSD) it will appear in a large percentage of the population.

PTSD prior to the Covid-19 outbreak has an effect on approximately 6.1 to 9.2 percent of the population of North America[1] in contrast to other countries like Australia that lists their national PTSD average at approximately 1.0 percent[2]. Of these studies, the profile of individuals suffering from PTSD revealed that exposure to natural disasters, toxic chemicals or other perceived life threatening events made up for twelve percent of those identified with PTSD representing the third large percentile of the group[3]. Individual's exposed to large scale Community Critical Incidents will most logically have a higher risk factor of manifesting traumatic symptoms. In the case of COVID-19, this has affected the entire world.

The trauma accrued by individuals will be inherently different depending on the nature of their PCTSS group. There are essentially 4 main groups identified within the scope of PCTSS :

Group1-Primary Populace	Group 2-Essential Services Workers
Group 3-Students & Teachers	Group 4-Confirmed COVID-19 Victims

[1] Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters Arch Gen Psychiatry. 2005;62(6):593.

[2] Post-traumatic stress disorder: findings from the Australian National Survey of Mental Health and Well-being. Creamer M, Burgess P, McFarlane Psychol Med. 2001 Oct;31(7):1237-47.

[3] How well can post-traumatic stress disorder be predicted from pre-trauma risk factors? An exploratory study in the WHO World Mental Health Surveys. Kessler RC, Rose S, Koenen KC, Karam EG, Stang PE, Stein DJ, Heeringa SG, Hill ED, Liberzon I, McLaughlin KA, McLean SA, Pennell BE, Petukhova M, Rosellini AJ, Ruscio AM, Shahly V, Shalev AY, Silove D, Zaslavsky AM, Angermeyer MC, Bromet EJ, de Almeida JM, de Girolamo G, de Jonge P, Demyttenaere K, Florescu SE, Gureje O, Haro JM, Hinkov H, Kawakami N, Kovess-Masfety V, Lee S, Medina-Mora ME, Murphy SD, Navarro-Mateu F, Piazza M, Posada-Villa J, Scott K, Torres Y, Carmen Viana M World Psychiatry. 2014 Oct;13(3):265-74.

The Pathology of PCTSS will be as follows:

The Event – *Outbreak of Covid-19*

The Group Distinction –*General Populace, Essential Workers, Teachers & Students, Covid-19 Victims*

Sustained Self Isolation or Continuing Work In A High Risk Environment

Physiological & Psychological Symptoms or Homeostatic Inertia

Inability To Resume Normal Activities – *In work or personal environments.*

Each group will manifest common trauma symptoms but some groups will be affected by specific trauma that is only found in their particular group, and then compounded by the trauma that has affected all the groups. The distinct difference in PCTSS in contrast to typical PTSD is that there are multiple trauma variables compounding the stress and reactions of the others in a perpetual continuum. This is similar in nature to many findings in persons suffering from Complex Post Traumatic Stress Disorder (CPTSD)[4]. Each identified group will have their own set of multiple traumatic variables.

CPTSD when first proposed was described as precipitating traumatic events, prolonged in time and usually taking place during early developmental stages of life (i.e. childhood)[5]. These events will have accumulated into the pool of trauma including entrapping events experienced during adulthood[6]. When the collective traumas are compounded with additional single traumatic events they can be so astringent in nature it can lead to profound personal effects, such as personality modification even after the conclusion of developmental stages[7], in addition to the normal associated symptoms of PTSD.

CPTSD is described as an enhanced version of the current definition of PTSD, with clinical features of PTSD but having three additional clusters of symptoms specifically emotional dysregulation, negative self-cognitions and interpersonal hardship, thus resembling the clinical features commonly found in borderline personality disorder (BPD)[8]. It sets itself apart from PTSD as there are multiple corresponding traumas contributing to the apex trauma that begins to produce the physiological and non-physiological symptoms.

Although PCTSS shares the commonality of CPTSD in having multiple traumas at different periods of time, PCTSS is distinctly different because the multiple traumas all spiral and are directly related to the initial traumatic event, in this case being COVID-19. The primary symptoms will manifest in the all of the different PCTSS groups and at different time periods but each group will have a dominating symptom, as well as share common symptoms with the other groups. Criteria for meeting diagnosis of PCTSS will have a criteria similar to the Diagnostic Criteria of DSM-IV-TR

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[4] Herman JL. Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. J Trauma Stress. 1992;5:377–391.

[5] Herman JL. Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. J Trauma Stress. 1992;5:377–391.

[6] McDonnell M, Robjant K, Katona C. Complex posttraumatic stress disorder and survivors of human rights violations. Curr Opin Psychiatry. 2013;26:1–6.

[7] Courtois CA. Complex trauma, complex reactions: Assessment and treatment. Psychol Trauma. 2008;S:86–100

[8] Complex posttraumatic stress disorder: The need to consolidate a distinct clinical syndrome or to reevaluate features of psychiatric disorders following interpersonal trauma. Evangelia Giourou, Maria Skokou, Stuart P Andrew, Konstantina Alexopoulou, Philippos Gourzis, Eleni Jelastopulu World J Psychiatry. 2018 Mar 22; 8(1): 12–19. Published online 2018 Mar 22. doi: 10.5498/wjp.v8.i1.12

for PTSD but changes in Criterion A: Trauma, will be specific to specific Covid-19 associated traumas, will be only subsequent to the date of 2020-01-21, and will have a change in Criterion E: Duration after 10 days.

Studies regarding victims of the 2003 SARS outbreak showed that 10 to 35 percent of SARS survivors reported having features of anxiety, depression or both at 1 month after they had been discharged[9]. The SARS outbreak compared to COVID-19 is a much smaller scale pandemic and thus we can expect to have a greater percentage of people exhibiting traumatic symptoms being that the physical health risk not only has reached the entire global population, but also the associated trauma created while dealing with the health risk will compound into a trauma level that most civilian individuals will not have experienced in their lifetime or understand nor have the capacity to effectively process that trauma. The COVID-19 situation will need to be addressed from a mental health perspective as the impact specifically of workers returning to the workplace, subsequent to mandatory shutdowns and self-isolation requirements coming to an end.

The desire to resume a normal life again will initially create such euphoria in people that the onset of people returning to the workplace will appear to be a seamless process. Individuals previously contained to their homes in self-isolation now have a purpose and place to function and an opportunity to interact with other human beings both of which opportunities had been denied of them as a result of the safety measures of containing the COVID-19 virus. At some point however, as the initial feelings of excitement dissipate, the ugly reality of the traumatic experiences they have endured will begin to rear its ugly head, and many employees and employers will be ill prepared to deal with it. Addressing the issue as early as possible will be the key factor in adjusting the resilience of employees as well as mitigating the cost factors involved.

The likelihood of success of a trauma intervention can have a much higher success in the early stages of a trauma based intervention. Victims of trauma can put up emotional "walls" around them as the "Trauma Membrane Theory" describes. It suggests that survivors of traumatic events surround themselves with a protective "membrane" which insulates them from the demands of their environment. The more time that passes, this figurative "membrane", grows maladaptively thicker and less permeable. When this occurs, the survivor becomes virtually isolated from all external relationships including friends, family or work associates. When early trauma interventions are deployed, it may provide a means of providing support and security without the necessity of the victim constructing an impermeable barrier[10]

There are significant costs to be considered if proper interventions are not utilized in addressing PCTSS upon return to the workplace. Lower productivity of employees, can have a direct effect on the business as targets and deadlines are stalled due to toxic work environments resulting from the inability of employees to regulate emotions with other employees. When this happens, decreases in morale, and declines in group and team cohesion can contribute the lack of synergy an organization requires to accomplish the tasks at hand. Workplaces with traumatized employees can also be subject to, increased sick time, increased short term disability claims, and increased long term disability claims that lead to be very costly. As well employee attrition can represent a significant expense of time and money associated with having to replace traumatized employees, who either resigned or had to be terminated due to poor

[9] Au A, Chan I, Li P, Chan J, Chan YH, Ng F Correlates of psychological distress in discharged patients recovering from acute respiratory syndrome in Hong Kong. The International Journal of Psychosocial Rehabilitation. 2004;8:41–51

[10] Lindy, J. 1985). The trauma membrane and other clinical concepts derived from psychotherapeutic work with survivors of natural disasters. Psychiatric Annals, 15, 153-160

job performance . It is universally recognized that prevention and early intervention are preferable to having to pursue traditional treatment strategies[11 12 13 14].

A Canadian study in 1996 revealed that integrating a trauma intervention program dramatically reduced the number of sick days taken by staff and reduced their attrition level of employees. A benefit to cost ratio of 700% on each dollar invested into trauma intervention programs was recognized. This was partly as a direct result of keeping staff from leaving the organization. Prior to implementing the program, 24 percent of their staff contemplated leaving their job after being exposed to trauma[15].

Early intervention is crucial. When a trauma intervention is implemented early, it leads to lower costs, and lower time periods to recover from the trauma. A study in Los Angeles area by Friedman, Framer, and Shearer (1988) found when victims of trauma were addressed and treated within 6 months, the recovery period was on average approximately twelve weeks and the associated costs were $ 8,300 USD. In contrast to victims who did not have trauma intervention until after 6 months, that showed the average recovery period to be forty six weeks and the associated costs were $ 46,000 USD[16] Cost and recovery time are key factors that employers will need to take into consideration to address the mental wellbeing of their employees who will be returning to the workplace after the Covid-19 pandemic subsides.

Essential services workers, although not subject to self-isolation trauma or the same type of financial impact trauma that other large percentage of the population would have had to endure, will also require PCTSS intervention. Many will have engaged their "*autopilot function*" for so long, in order to suppress both physiological and psychological signals of distress, and they may fall into a state of *Homeostatic Inertia.*

Homeostatic Inertia occurs in primarily Emergency Services Personnel, who are constantly working in environments where accumulated or constant trauma stimulus is great, or when the occupational duties become increased for an extended period of time. Normally, individuals working under these types of conditions would begin to feel the effects both physically and psychologically, as the body sends warning signs to target organs, indicating these conditions are not optimal for the required equilibrium of the body. The normal utilitarian function of these signals is to indicate that homeostasis is not present and change is needed. When a person is in a state of Homeostatic Inertia, these signals of the body will not be acknowledged or felt by the individual. The lack of signals of distress, can give the individual a false sense of security that the body and mind are performing optimally, creating a very dangerous pattern of behavior that may accumulate in a much more serious trauma related injury in the future. The increase of costs, resources, and time for individuals to be treated and recover will be significantly greater if interventions are not put in place at the earliest possible point in time.

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[11] Yandrick, R. (1990). Critical Incidents. EAPA Exchange, January, pp.18-23.
[12] Duffy, J. (1979). The role of CMHCs in airport disasters. Technical Assistance Center Report, 2(1), 1;7-9
[13] Kentsmith, D. (1980). Minimizing the psychological effects of a wartime disaster on an individual. Aviation, Space, and Environmental Medicine. 49, 1004-1008
[14] Butcher, J. (1980). The role of crisis intervention in an airport disaster plan. Aviation, Space and Environmental Medicine, 51, 1260-1262
[15] Western Management Consultants. (1996). The Medical Services Branch CISDM Evaluation Report. Edmonton Alberta:WMC
[16] Friedman, R., Framer, M., & Shearer, D. (1988). Early response to post-traumatic stress. EAP Digest, September-October. Pp. 45-49

Trauma interventions can begin for all groups when the individual is able to begin their normal activities which had been altered by the Trauma of Origin, being the Covid-19 virus. For the General Populace Group, the intervention must be able to address not only the issues of physiological and psychological symptoms and signals of distress that were experienced during this period of time, but also the issues of social isolation will create the need to take steps to re-establish previously dormant social interaction skills. Many individuals tend to withdraw when under the pressure of trauma[17]. After a period of social isolation, being thrown back into an atmosphere of large or even small groups of people can overwhelm an individual.

Employers who choose to ignore this issue, or deploy pseudo-interventions not designed to deal with the complex and compounded trauma of Covid-19, will not recognize the same success and will encounter less productivity, disruption and larger costs to deal with the problem in the future. Employers need to realize, what will be needed to re-integrate their employees back into a productive and cohesive workplace will be an integrative strategy of intervention, which is in place prior to bringing their employees back. Those employers who choose to take action in putting a comprehensive trauma intervention program into place, as employees begin to return to the workplace, will thrive, not just survive during this difficult transition. The potential of impact PCTSS is unprecedented in modern history and requires new modalities for a broader base to re-establish equipoise in the workplace.

[17] APA, (2000). Diagnostic and Statistical Manual of Mental Disorders, 4th Edn. Washington, DC: American Psychiatric Press

TABLE 1.0

PATHOLOGOY OF PCTSS (Post Covid-19 Traumatic Stress Syndrome)

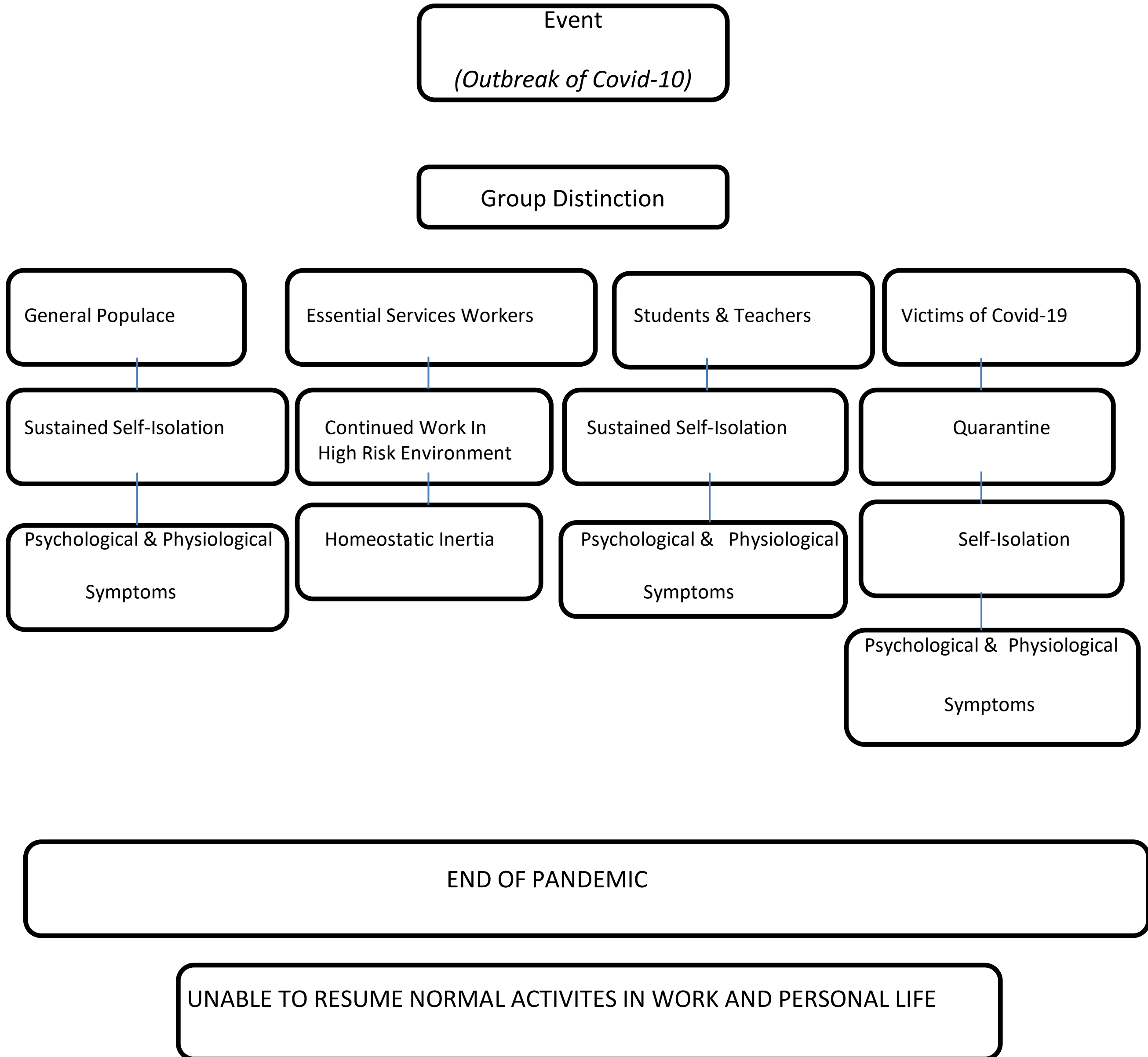

TABLE 1.2

PCTSS GROUP BASED TRAUMAS

GENERAL POPULACE	ESSENTIAL WORKERS	TEACHERS & STUDENTS	COVID-19 VICTIMS
Covid-19 Trauma	Covid-19 Trauma	Covid-19 Trauma	Accelerated Covid-19 Trauma
Self-Isolation Trauma	High Risk/Additional Workload Trauma	Self-Isolation Trauma	Medical Quarantine Trauma
Work Stoppage Trauma	Isolation From Family And Friends Trauma	Work or Studies Stoppage Trauma	Self-Isolation Trauma
Financial Impact Trauma	Physical & Psychological Exhaustion Trauma	Financial Impact Trauma *(Teachers)* Academic Impact Trauma (Students)	Work Stoppage Trauma Financial Impact Trauma

TABLE 1.3

Diagnostic Criteria For Post Covid-19 Traumatic Stress Syndrome

GROUP	Criteria	Symptom Or Description
GENERAL POPULACE	**Trauma Primary** *(one or more)*	*-Occurred subsequent to 2020-01-21* *-Subject to self-isolation* *-Loss of Employment (laid off/terminated)* *-Loss of Income* *-Change In Financial Situation*
	Re-experiencing symptoms *(one or more)*	*-Intrusive recollections of events* *-Recurrent distressing dreams of events* *-Acting or feeling worst case scenario of event* *-Distress at internal or external triggers of the trauma* *-Physiological reaction to internal/external triggers of the trauma*
	Persistent Avoidance *(three or more)*	*-Avoidance of thoughts, feelings, or conversations associated with the traumas* *-Avoidance of activities, places, or people that arouse recollections of the traumas* *-Failure to recall an important aspect of traumas* *-Loss of interest or participation in significant activities* *-Detachment from others* *-Restricted range of affect* *-Lost sense of future*
	Hyperarousal *(two or more)*	*-Difficulty falling or staying asleep* *-Irritability or outburst of anger* *-Difficulty concentrating* *-Hypervigilance* *-Exaggerated startle response*
	Duration Of Disturbance	*-Duration of disturbance symptoms more than 10 days*
	Clinically Significant Distress Or Impairment	*-Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of function*

TABLE 1.4

Diagnostic Criteria For Post Covid-19 Traumatic Stress Syndrome

GROUP	Criteria	Symptom Or Description
ESSENTIAL WORKERS	**Trauma Primary** *(three or more)*	*-Occurred subsequent to 2020-01-21* *-Subject to higher levels of risk of Covid-19* *-Self-isolation from family/friends only* *-Subject to increased workload* *-Subject to increased hours of employment* *-Loss of Employment (laid off/terminated)* *-Loss of Income* *-Change In Financial Situation*
	Re-experiencing symptoms *(one or more)*	*-Intrusive recollections of events* *-Recurrent distressing dreams of events* *-Acting or feeling worst case scenario of event* *-Distress at internal or external triggers of the trauma* *-Physiological reaction to internal/external triggers of the trauma*
	Persistent Avoidance *(three or more)*	*-Avoidance of thoughts, feelings, or conversations associated with the traumas* *-Avoidance of activities, places, or people that arouse recollections of the traumas* *-Failure to recall an important aspect of traumas* *-Loss of interest or participation in significant activities* *-Detachment from others* *-Restricted range of affect* *-Lost sense of future*
	Hyperarousal *(two or more)*	*-Difficulty falling or staying asleep* *-Irritability or outburst of anger* *-Difficulty concentrating* *-Hypervigilance* *-Exaggerated startle response*
	Duration Of Disturbance	*-Duration of disturbance symptoms more than 14 days*
	Clinically Significant Distress Or Impairment	*-Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of function*

TABLE 1.5

Diagnostic Criteria For Post Covid-19 Traumatic Stress Syndrome

GROUP	Criteria	Symptom Or Description
STUDENTS & TEACHERS	**Trauma Primary** *(one or more)*	*-Occurred subsequent to 2020-01-21* *-Subject to self-isolation* *-Loss of Employment (laid off/terminated)* *-Forced to cease academic studies* *-Delay in ability to graduate of complete program* *-Change In Financial Situation*
	Re-experiencing symptoms *(one or more)*	*-Intrusive recollections of events* *-Recurrent distressing dreams of events* *-Acting or feeling worst case scenario of event* *-Distress at internal or external triggers of the trauma* *-Physiological reaction to internal/external triggers of the trauma*
	Persistent Avoidance *(three or more)*	*-Avoidance of thoughts, feelings, or conversations associated with the traumas* *-Avoidance of activities, places, or people that arouse recollections of the traumas* *-Failure to recall an important aspect of traumas* *-Loss of interest or participation in significant activities* *-Detachment from others* *-Restricted range of affect* *-Lost sense of future*
	Hyperarousal *(two or more)*	*-Difficulty falling or staying asleep* *-Irritability or outburst of anger* *-Difficulty concentrating* *-Hypervigilance* *-Exaggerated startle response*
	Duration Of Disturbance	*-Duration of disturbance symptoms more than 10 days*
	Clinically Significant Distress Or Impairment	*-Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of function*

TABLE 1.6

Diagnostic Criteria For Post Covid-19 Traumatic Stress Syndrome

GROUP		Criteria	Symptom Or Description
COVID-19 V	**Victims**	**Trauma Primary** *(three or more)*	*-Occurred subsequent to 2020-01-21* *-Subject to self-isolation* *-Diagnosed Positive For Covid-19 virus* *-Subject to post recovery self-isolation* *-Loss of Employment (laid off/terminated)* *-Loss of Income* *-Change In Financial Situation*
		Re-experiencing symptoms *(one or more)*	*-Intrusive recollections of events* *-Recurrent distressing dreams of events* *-Acting or feeling worst case scenario of event* *-Distress at internal or external triggers of the trauma* *-Physiological reaction to internal/external triggers of the trauma*
		Persistent Avoidance *(three or more)*	*-Avoidance of thoughts, feelings, or conversations associated with the traumas* *-Avoidance of activities, places, or people that arouse recollections of the traumas* *-Failure to recall an important aspect of traumas* *-Loss of interest or participation in significant activities* *-Detachment from others* *-Restricted range of affect* *-Lost sense of future*
		Hyperarousal *(two or more)*	*-Difficulty falling or staying asleep* *-Irritability or outburst of anger* *-Difficulty concentrating* *-Hypervigilance* *-Exaggerated startle response*
		Duration Of Disturbance	*-Duration of disturbance symptoms more than 10 days*
		Clinically Significant Distress Or Impairment	*-Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of function*