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A case study : Time course of long-term PTSD symptoms on youth tsunami survivor

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Summary

The prevalence and the sustainability of Post Traumatic Stress Disorder (PTSD) symptoms in youth have been one of the concerns in the field of Mental Health which emerge on disasters for the last decades. The aim of this case study is to understand and to explain the characteristics of PTSD symptoms in youth survivors experiencing in the 2004 Indian Ocean tsunami. Two young participants (14-15 years) were diagnosed as full PTSD. They were suffering from chronic and delayed onset PTSD symptoms even five years after the tsunami. Distressing dreams, avoidance of place or activities, difficulty of falling sleep, and self-blaming were their persistent symptoms. The prolonged and fluctuated symptoms are strongly influencing psychological adjustment of the youth's with the tsunami experience. Attention should be given to youth with the prolonged PTSD symptoms as they might impair their quality of life. It might be important that family members, teachers, friends, and health professionals can work together to perform a holistic intervention.

Keywords:

PTSD symptoms, time course, the 2004 Indian Ocean tsunami, youth survivors.

Introduction

The largest earthquake in the last 40 years occurred along the West coast of Northern Sumatra Indonesia, on the 26th of December 2004. The Indian Ocean earthquake was evoked the most terrifying the 2004 Indian Ocean tsunami throughout its history. It largely swept Aceh, Indonesia and some places from seven different countries along the coastal of the Indian Ocean. A hundred thousand of people had been reported dead or missing. The adversities of the 2004 Indian Ocean tsunami brought the survivors not only on physical comorbidities but also on psychological consequences such as anxiety, depression, and acute stress disorder following the disaster.

Children's psychological and social state depend on their routines, such as following their family daily routine, going to school and meeting friends. These activities fill up their life. Disaster can change their community life dramatically, once disaster harasses their routines, as youth survivors, they become easily frightened, anxious and confused. The consequences of disaster raise many problems such as losing their families, home, relatives, and close friends along with other issues. They should adapt themselves to the new environment such as living in shelters, attending to their new schools, and meeting new people including neighbors, friends, and teachers. Moreover, the remaining family members may lack time to take care of them¹⁾. These circumstances exacerbate children's condition and lead to the long-term psychological effect, such as Post Traumatic Stress Disorder (PTSD). PTSD symptoms could persist even years

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after a traumatic event. A PTSD study revealed that the general symptoms among adolescent are distressing recollections (re experience), efforts to avoid thoughts and feelings (avoidance/numbing), and efforts to avoid activities that facilitate recollections (avoidance/numbing)²⁾.

Several studies have been focused on the psychological distress of children and adolescence after a disaster^{1,3,4)}. A year after the 2004 Indian Ocean tsunami, a study was performed among youth survivors¹⁾. In 50 children (11-15 years old) involved in the psychosocial activity in Aceh, only 6 children recovered, while the 44 remained children showed aggressive behaviors, loss of interest in peer activities, psychosomatic complaints and increased irritability¹⁾. This means that youth of the 2004 Indian Ocean tsunami survivors in Aceh bear a great psychological burden. In this case study, we investigate how PTSD symptoms on youth survivors could persist and the symptoms could be changed in relevant with ongoing time.

Method

This study was conducted 5 years after the 2004 Indian Ocean tsunami. Permission to conduct the study was granted by the School of Nursing, Faculty of Medicine and Health Sciences, Syarif Hidayatullah State Islamic University, School of Nursing, Faculty of Medicine, Syiah Kuala University and the principal of junior high school.

After receiving the data of student who became the 2004 Indian Ocean tsunami survivors from the principal of Junior High School in Aceh Besar district. We selected participants which have criteria; the range of age is 12-18 years; have lost their parents (either one of them or both of them); and becoming survivors of the 2004 Indian Ocean tsunami. Two of the participants had been chosen to be involved in this study according to the inclusive criteria (Table 1). Since both of them had lost their parents, so the consent was acquired directly from the participants under the teacher’s supervision.

Data had been collected through observations and clinical structured interviews within 10 days among two of the participants. The duration of each interview rated 60-90 minutes for 2 to 3 times each session. They were performed by using Clinician-Administered PTSD Scale for Children and Adolescents (CAPS-CA). The CAPS is a structured interview that assesses the 17 symptoms of PTSD.⁵⁾ Moreover, in this study 2 additional associate features of guilt and trauma-specific fears were included. Symptoms were assessed for frequency of deterioration and intensity in the preceding months, using a 5-point Likert scale where 0 indicates that the symptom does not occur or does not cause distress and 4 indicates that the symptom occurs nearly every day or causes extreme distress. Children and adolescents are asked to respond frequency and intensity for each item by utilizing pictorial scales and cartoon faces. Both of the participants were asked not only their symptoms according to CAPS-CA but also their experiences within the last 5 years including; the story during the 2004 Indian Ocean tsunami was occurred; the change of their behavior before and after the 2004 Indian Ocean tsunami; the way they used to act when the recollection occurred.

Table 1. Characteristic of Participants

Participants	Gender	Age at tsunami	Age at present	Loosing Family Member
M	Male	10 years	15 years	1. Mother 2. Sister 3. Young sister
F	Female	9 years	15 years	1. Father 2. Mother

Case Study 1

M is a 15 year-old boy. He is the third grade student of junior high school (SMP). It was five years ago when he was at home with his family, except his father at home when the earthquake happened. M and his entire family members were at home when they heard some people from Village Syiah Kuala were shouting that the seawater high. He and his family were panic and ran off quickly their house to save themselves. His elder sister and his mother could not run as they both tried to find out his younger sisters. Luckily the younger sisters were helped and carried by his grandmother. Finally, they all met at one place, and then ran together. They run whilst they were holding their hands together. Since M's mother was running and holding M's sisters, they all run behind M. Unfortunately, the sea water then caught them and then pushed them away. It was the last time for him to see his mother and his sisters.

He kept running even though the water almost washed him away. He also had been pushed and hit by a bit of blocks which were floating and pushed by the sea water. Luckily, there was a man who held him thus he could stay. There was a good opportunity for him to climb up on to the roof of someone's house. He climbed it up with a huge effort. In the early evening, he went down and stayed over the night in somebody's home. After that, he moved to his relative's house for 3 days in a Village called Le Kareng, and then he stayed in a shelter for almost a year (2006 - 2007). At this place, he met some of his family who survived from the disaster one by one. First, he met his grandmother and his younger sisters in the shelter. Afterwards, he met his brother and another younger sister. At the end, he met his father after almost one month has been living separately from him. At the day when the 2004 Indian Ocean tsunami hit his village, his father was living in a different area. Eventually they all met at the shelter and attempted to find out his mother, the older sister and the younger sister. They had a look and tried to find them out by searching them at some dead bodies which they found. Unfortunately, they could not find them out. It was very traumatic for him as he had to see some dead bodies without heads or incomplete figure.

After the incident, he makes a confession that he would not ever memorize or discuss in relation with the disaster. He thought that being quiet could erase the fear or anxiety from the traumatic memory. He does not want to talk about it or to think his traumatic about the tsunami anymore. Consequently, he developed PTSD symptoms until now. He has experienced difficulty to start sleep and nightmares almost every night. Initially, he dreamed about the tsunami, and then the content of dream changed. He has been having nightmares frequently since 2006. He admitted intrusive images or thoughts of the tsunami would sometimes occur. That makes him sad, angry and disappointed. That is why he tried to avoid any conversation related to the tsunami. He initially said that he could not remember the tsunami, but finally he able to retell the story during the interview.

He attempted to suppress his memory about the tsunami and avoided going back to his hometown. He fears of walking alone, he would run if someone runs behind him then stopped with his body shaking. He showed low academic achievement dramatically, he confess difficult to concentrate and easily gets distracted. He is also easy to be angry and sometimes fought with his friends. He shows greatest self-blame and anger, wishing that he could have saved his younger sister's life, if only he held her, he would not lose his younger sister. These guilty feelings make him difficult to be happy. He said that there is nothing in his life which can make him happy since his family had became incomplete. He has difficulty in enjoying his favorite activity like karate, became thinks foreshortened and no confident in accomplishing his goals.

Case Study 2

F is a 14 year-old girl. She has lost her parents since she was at 9 years old due to the 2004 Indian Ocean tsunami. On that day the whole family were at home. Then suddenly the Indian Ocean earthquake occurred. They were inside the house until someone yelled out that the sea water went up, so they ran separately to save themselves. She ran leaving her both parents who ran behind her. However, the water reached her and washed her away. She has been drinking the black and dirty water for a moment. She was almost being sunk and being rolled away by the enormous wave. She almost lost her neck due to she has been hit by an iron sheeting. She tried to take breath over and swam in the water for several of times. Until she saw a bed near her, and instantly took a ride on it. Then the power of the wave pushed the bed out of the sea onto the landfall. Later on, there was somebody who saved her and brought her in the shelter center.

A few days later, she met her brother and they were brought to Sabang. One by one her family got united except her parents. His brother forbade her to find her parents. Unfortunately, she found only her father's body but not her mother. F is the youngest in her family of 8 brothers and sisters. She only joined one activity in 2008, to help her reducing her negative thoughts and fear from her traumatic experiences. She confesses that intrusive thoughts occur frequently until now, especially when she is alone, seeing waves or hearing very loud voices, then she will became sad, cry, and say *Istighfar* (ask for God's forgiveness). Her body always trembles when the intrusive thought appears and she cannot do anything. She has insomnia and been experiencing in nightmares persistently. F admitted that since the tsunami occurred she is extremely scared of the sea. She avoids going to the beach or seeing the sea. It was only for 5 times she went to the sea after the tsunami occur. Moreover, when she was at sea, she tried to not seeing the sea water and kept away or made a distance from it. She does not want to share her tsunami experience with anyone. She feels difficult to make a friend and likes to be quiet. She does not have initiative to start any conversation with other people, unless she is asked.

She has forgotten some part of her experiences in the tsunami since 2008. She further explained that she is always sad and has never had some experiences that can make her happy. Her academic records are not as good as before the tsunami occurred. She has started to be dreamy in the class since she was at junior high school. She could not concentrate in her study; she listened what her teacher would explain but she could not understand and could not follow it. She expresses her feelings since she could not save her parents and she always says sorry for them. Re-occurrence also emerges during the interview with F. She was crying madly. She could not continue the interview on that day. Two days later, she revealed her willingness to continue the interview.

Results

The structured clinical interview by using CAPS-CA showed that both M and F met to the B, the C, and the D criteria of PTSD. Both of them were diagnosed as full PTSD (Table 2). In context of time

Table 2. CAPS-CA Diagnosis

Participants	Meet Criteria				Total Score of CAPS-CA	Type of PTSD
	A criterion: Identify trauma	B criterion : Re-experiencing ≥ 1 (B1-B5)	C criterion: Avoidance ≥ 3 (C1-C7)	D criterion: Arousal ≥ 2 (D1-D5)		
M	YES	YES (19)	YES (31)	YES (22)	72	Full
F	YES	YES (23)	YES (36)	YES (26)	85	Full

course of PTSD symptoms, both M and F symptoms were categorized as chronic and delayed onset of PTSD. Each criterion of PTSD symptoms of M and F is varying in line over to its frequency and its intensity; some of symptoms were consistent, whereas the other symptoms increased or conversely decreased (Table 3).

PTSD symptoms of B criterion (re-experiencing) as intrusive recollections of the event (B1), distressing dreams (B2), psychological distress (B4), and physiological reactivity (B5) occurred on both M and F. These symptoms persistent since 2005, but the frequency became less. The PTSD symptoms of C criterion (avoidance) between M and F varied, although both of them tried to avoid all the memory of the tsunami, they have different ways to avoid. M tends to suppress all memory through avoiding thoughts and conversation related to tsunami (C1). On the other side F showed efforts to avoid places that arouse recollections of the trauma (C2). On D criterion (increased arousal) of PTSD symptoms between M and F shows that both of them showed lowered academic achievement with different reasons between them. F confesses that she could not pay attention because of intrusive thought of tsunami come out many times while she was in class, which in turn lead to her to a difficulty to concentrate and easily to distract. M often displays disruptive behaviors such as impulsivity and inattentiveness, which frequently negatively affects his academic achievement. Delayed onset symptom occurred in symptoms of inability to recall an important aspect of the trauma (C3) on M. One of associated features symptom mostly reported is feeling guilty.

Discussion

PTSD divided into three types, according to the onset and duration of symptoms, there are acute type when the duration of symptoms is less than 3 month; chronic type when the symptoms last 3 month or longer; delayed onset type, at least 6 month have passed between the traumatic event and the onset of the symptoms.⁶⁾ M and F were categorized as chronic and delayed onset, which means they are the representative cases reflecting that the memory of very traumatic experiences could not be vanished and ingrained in their life. These findings congruent with previous study such as a follow up study after Armenian 1988 earthquake, study indicating that great disaster could become traumatic experiences and cause the emergence of prolonged and severe traumatic stress.⁷⁾

Table 3. Time course of frequency PTSD Symptoms

No	Symptoms	2005		2006		2007		2008		2009		2010	
		M	F	M	F	M	F	M	F	M	F	M	F
1	Intrusive recollections (B1)	4	2	4	3	0	3	0	3	0	3	0	3
2	Distressing dreams (B2)	3	3	4	3	4	3	4	3	4	3	4	3
3	Acting or feeling as if event were recurring (B3)	0	0	0	0	0	0	0	0	0	0	0	0
4	Psychological distress at exposure to cues (B4)	3	4	3	4	3	3	3	3	3	3	3	3
5	Physiological reactivity on exposure to cues (B5)	3	4	3	3	3	3	3	3	3	3	3	3
6	Avoidance of thoughts, feelings, or conversations (C1)	2	0	3	1	4	1	4	1	4	1	4	1
7	Avoidance of activities, places, or people (C2)	0	4	2	3	2	3	2	3	2	3	2	3
8	Inability to recall important aspect of trauma (C3)	0	0	0	0	3	0	3	2	3	2	3	2
9	Diminished interest or participation (C4)	2	4	2	3	2	3	2	3	2	3	2	3
10	Detachment or estrangement (C5)	0	2	0	3	0	3	0	3	0	3	0	3
11	Restricted range of affect (C6)	4	1	4	4	4	4	4	4	4	4	4	4
12	Sense of a foreshortened future (C7)	2	2	2	2	2	2	2	2	2	2	2	2
13	Difficulty falling or staying asleep (D1)	4	3	4	3	4	3	4	3	4	3	4	3
14	Irritability or outbursts of anger (D2)	3	0	3	2	2	2	2	2	2	2	2	2
15	Difficulty concentrating (D3)	3	0	3	0	3	2	3	2	3	2	3	2
16	Hyper-vigilance (D4)	0	3	0	2	0	2	0	2	0	2	0	2
17	Exaggerated startle response (D5)	4	4	4	3	3	3	3	3	3	3	3	3
18	Self blaming (AF)	3	3	3	3	3	3	3	3	3	3	3	3
19	Trauma specific fears (AF)	3	3	2	3	2	2	2	2	2	2	2	2

Based on the DSM IV, for the young age usually shows repetitive play that representing the events (B1) and distressing dreams without recognizable content (B2). Both of the participants admitted they never did the repetitive play and they could recognize the content of distressing dream even after 5 years ago.

Even though M and F showed similarity of symptoms, still they have some differences in its frequency and its intensity symptoms. M tends to show aggressive behavior, whereas F seems to show depressive behavior. Many factors may influence the fluctuations of their symptom, such as gender, family situation, the severity of trauma, other traumatic experience and coping mechanisms.

Thought suppression is an attempt to avoid or end particular thoughts, but it paradoxically increases the occurrence of intrusions and it prevents emotional processing of the traumatic event.^{8,9,10} However in our study M showed opposite symptoms. He was tried to suppress the memory of the disaster, but he did not show occurrence of intrusions, indeed thought suppression lead the difficulty to remember the traumatic event, distressing dream and difficulty sleep. The C criterion symptoms were definitely seen in our study among both of participants with chronic PTSD. Similar with our study, many previous studies revealed that the effect of avoidance (C criterion) symptoms prevents the adequate emotional processing of traumatic experience and the habituation to traumatic memory.^{9,10,11}

Delayed onset of symptoms occurred on the inability to recall the important aspect. According to the psychoanalytic theory by Sigmund Freud, this phenomenon is called repression which is an inability to recall a memory that nevertheless exists in the mind and was driven by an unconscious need to avoid the painful emotional consequences of remembering. Consequently, the effect of repression leads the difficulties to remember the important aspects of the tsunami.

The study showed that feeling guilty as one of associated features has been last for 5 year after the tsunami among M and F. This finding is congruent with previous study that the severity of guilt is associated with the persistence of posttraumatic stress reactions among children and adolescents.¹²

The first year after the 2004 Indian Ocean tsunami was the peak time of symptoms then some of people would recover naturally. However, there are some people who showed some negative symptoms which could stay for months and even years. Many youth survivors will suffer from the long-term of psychological, in consequence from if we only rely on the natural recovery in youth survivor. Holistic approach in order to overcome psychology adversities after tsunami is needed to offer the effective intervention, without disregarding cultural sensitivity in disaster area.

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