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THE EFFECTIVENESS OF EARLY CRISIS INTERVENTION MODEL WITH FAMILIES IN ALLEVIATING THE PSYCHOLOGICAL SYMPTOMS AFTER EXPERIENCING TRAUMATIC EVENT

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Abstract

This study assessed the effectiveness of early intervention model on preventing the development of psychological symptoms among family members experienced a traumatic event. The study included four family members after loss of five children from the family resulted from missile attack during the Israeli escalation during May 2022. The researcher used in vivo early exposure-focused intervention approach within the first week of the trauma event. Severity of symptoms were measured by using Early Intervention Model and PTSD Symptom Scale – Interview (PSS-I). Assessment of clients was conducted on four phases (before intervention, immediately after intervention, at one month after intervention, and at three months after intervention). The results showed significant reduction in PSS-I score at one month (P, 0.002) and at three months (P, 0.010) compared to pre-intervention scores, which indicated significant reduction in psychological symptoms. The study concluded that in vivo early exposure-focused intervention model was effective in reducing the psychological symptoms among family members who witnessed or experienced a traumatizing event.

Keywords: Traumatic event, Cognitive Behavior Therapy, Early intervention, Gaza Strip.

Introduction

Exposure to traumatic events and the impacts on health and well-being can vary greatly depending on socio-economic, environmental, cultural, and historical factors (Do et al., 2019). Most people who have a traumatic event will have reactions that may include shock, anger, nervousness, fear, and even guilt. These reactions are common, and for most people, they go away over time. For a person with PTSD, however, these feelings continue and even increase, becoming so strong that they keep the person from going about their life as expected. People with PTSD have symptoms for longer than one month and can't function as well as before the event that triggered it happened (Bhandari, 2022). PTSD is characterized by profound psychological distress, intrusive symptoms of re-experiencing of the trauma, including thoughts, flashbacks, or nightmares, avoidance of trauma reminders, negative alterations in cognition and mood, and hyperarousal or elevated trauma-related reactivity (American Psychiatric Association - APA, 2013).

The effects of wars on mental health, physical health, economic security, and political stability are long-lasting. A systematic review on long-settled refugees estimated the prevalence of any psychiatric morbidity to be about 20% in a population that has resettled for at least 5 years, and acknowledges risk factors predicting higher rates of psychiatric symptoms such as post-traumatic stress and the adverse socio-economic situation (Bogic et al., 2015). Studies report that the psychological impact of war trauma may affect the whole family, even when only one member has been directly exposed to stressful events (Kiser & Black, 2005). Furthermore, immediate and long-term responses to trauma can either reinforce or mitigate the dysfunctional reactions of one or more members of a family affected by trauma. Strategies of prevention and care for war-affected populations should, therefore, take into account the socio-ecological dimensions of suffering, and specifically target family transactions and processes. In line with strong empirical evidence on the impact of trauma at the family level (Zerach et al., 2013).

Cognitive Behavioral (CBT) intervention in war-affected individuals

Cognitive Behavior Therapy (CBT) is evidence-based psychotherapy, used in the prevention and treatment of psychological as well as physical issues (Schure et al., 2019). CBT includes methods that aim to help a person to identify his stress levels and modify his beliefs and behaviors and such methods include cognitive restructuring, behavioral changes, and social support. It helps a person to eliminate or reduce psychological distress symptoms and helps the individual to return to normal day-to-day life. Many studies had found that after receiving cognitive behavior therapy, there is a significant drop in anxiety, improvement in somatic symptoms and psychological stress, and an increase in quality of life (Hartley et al., 2016). CBT is the most economical and effective psychotherapy in reducing and relieving psychological distress (Tang & Kreindler, 2017). Several studies indicated that CBT was effective in reducing psychological symptoms,

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reduction in nightmares, and reduction in post-traumatic stress symptoms (Germain et al., 2012; Rhudy et al., 2010; Talbot et al., 2014; Walters et al., 2020).

The early psychological interventions after traumatic events were documented during World War I (Greenberg et al., 1999), and eventually described as brief crisis interventions performed within days of the trauma. Increasing efforts have been made to develop psychological and pharmacological interventions that can prevent the onset of disorders or alleviate early symptoms (Kearns et al., 2012; McNally et al., 2033). For a time, psychological debriefing was a widely used form of early intervention. However, it use has been rejected as evidence has emerged questioning its effectiveness (Bastos et al., 2015; Rose et al., 2022). In the last 20 years, a number of other approaches have emerged, mainly based on established CBT (Kearns et al., 2012).

In this study, a unique model of in vivo early exposure-focused intervention approach with all the family members have been used. The model was developed by the researcher. The researcher intended to examine the effectiveness of this model as an approach to be used with all the family members who experienced a traumatizing event, in preventing the development of psychological symptoms as a result of the event.

Goal of the study

The study aimed to examine the effects of early intervention model on preventing the development of PTSD among family members experienced a traumatized event.

Methodology

This study is a case study, in which the researcher used intervention model at early stage within the first week after exposure to a traumatic event. The family (Nijm family) lives in northern area of Gaza Strip. During the Israeli military escalation on 5th of August 2022, five children were killed while they were playing in front of their house as a result of Israeli missile attack. The researcher implemented the intervention with assistance from local specialized volunteers. The intervention was implemented on 4 family members who witnessed the event on the fourth day after the traumatic event.

Instruments of the study

The researcher used two instruments: Early Intervention Model and PTSD Symptom Scale – Interview (PSS-I).

1. Early Intervention Model:

The early intervention model is a psychological interventional model with all the family members who experienced a painful traumatic event that could impose negative effects on many aspects of life. The model was developed by the researcher (Dr. Mahmud Said). The intervention model aims to avoid the development of psychological symptoms and disturbances after witnessing or experiencing a traumatic event. The model focuses on direct exposure of the intended family members. The model was first developed in 2002 after attacking Jenin camp, then the model was further modified and implemented during the Israel Lebanon war in 2006. The implementation of the model pass in 4 stages:

First stage: The stage of acceptance; including meeting the family members to obtain their agreement and willingness to actively participate in the intervention. During the meeting, the researcher explained the intervention phases to the family members, the researcher enquired about the changes that had occurred in the family as a result of the event, including the day-to-day customs and interaction of the family members before and after the event. The symptoms of each individual participant were then recorded via a clinical-diagnostic interview.

Second stage: Psychological preparedness; including psychological education preparing the family members psychologically to participate in the intervention.

Third stage: Exposure stage; including intervention at the site where the traumatic event occurred.

Fourth stage: Closing stage; including summarizing, feedback, advising, expectations, and ending the intervention sessions.

2. PTSD Symptom Scale – Interview (PSS-I)

To evaluate the effectiveness of the intervention model, the researcher used the PSSI-17 to assess the presence of psychological symptoms. The PSSI-17 consists of 17 items focusing on presence of symptoms that may occur after the experience of a traumatic event. The total scores of the scale ranging between (0 - 51). Scoring of the scale as the following:

Score	Interpretation
0	Never, or happened one time only.
1	One time in the week.
2	2-4 times in the week.
3	5 times or more in the week, or all the time.

Evaluation of psychological symptoms:

Based on assessment scores of the client, the evaluation of PTSD symptoms will be as the following:

Total score of PSSI	Severity of symptoms
10	No disturbance
15	Mild disturbance
20	Moderate disturbance
25	Above moderate disturbance

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30	High disturbance		
35	Severe disturbance		
40 - 51	Extreme disturbance		

Results

The researcher used the PSSI-17 to assess the psychological symptoms at four phases:

Phase 1: Before intervention.

Phase 2: Within one week after intervention.

Phase 3: At one month after intervention.

Phase 4: At three months after intervention.

Table (1): Scoring of PSSI (case No. 1)

No.	Item	Phase 1	Phase 2	Phase 3	Phase 4
1	Have memories and views from the traumatic event are coming intrusively?	3	1	2	1
2	Have you been having bad dreams or nightmares related to the trauma?	2		0	0
3	Have you had the experience of feeling as if the trauma were actually happening again?	3	1	0	0
4	Have you been very emotionally upset when reminded of the trauma (awesome, anger, sadness, guilty feeling)?	3			1
5	Have you had physical reactions when reminded of the trauma (e.g., sweating, heart racing)?	3	1	0	0
6	Have you been making efforts to avoid thoughts or feelings related to the trauma?	3	1	2	2
7	Have you been making efforts to avoid activities, situations, or places that remind you of the trauma or that feel more dangerous since the trauma?	3	0	0	0
8	Are there any important parts of the trauma that you cannot remember?.	1	1	2	0
9	Have you lost interest in activities you used to do?	3	2	0	0
10	Have you felt detached or cut off from others?	2	0	0	0
11	Have you experienced emotional blunting such as inability to cry or love.	0	0	0	0
12	Feeling that the future is negative and my goals will not be achieved (job, marriage, sons, long life).	3	0	0	0
13	Difficulty falling or staying asleep.	3	0	0	0
14	Have you had feeling of uneasiness, and episodes of anger.	3	1	1	0
15	Have you had difficulty concentrating?	3	0	1	0
16	Have you been overly suspicious (e.g. bad thing	3	0	0	0

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	will happen).					
17	Have you been overly alert or on-guard (e.g., checking to see who is around you, etc.)?	3	0	0	0	
	Total	44	10	9	4	
Level	Level of symptoms		No disturbance	No disturbance	No disturbance	
Chang	ges in symptoms					
	Onset	Change perce	ent			
	Phase 1 vs. phase 2	77.27				
	Phase 1 vs. phase 3	79.54				
	Phase 1 <i>vs.</i> phase 4 90.90					

Case No. 1 (H.N): The total score of PSSI at phase (1) was 44 indicating extreme disturbance. The total score of PSSI at phase (2) decreased to 10, indicating no disturbance, at phase (3) the total score of PSSI was 9 indicating no disturbance, and at phase (4), the total score of PSSI was 4 indicating no disturbance. The change percent in total score between phase 1 and phase 2 was 77.27%, the change between phase 1 and phase 3 was 79.54%, and the change between phase 1 and phase 4 was 90.9%. These results indicated a considerable reduction in the PSSI scores after the intervention.

No.	Item	Phase 1	Phase 2	Phase 3	Phase 4
		Phase I	Phase 2	Phase 5	Phase 4
1	Have memories and views from the traumatic event are coming intrusively?	3	1	0	0
2	Have you been having bad dreams or nightmares related to the trauma?	2	0	0	0
3	Have you had the experience of feeling as if the trauma were actually happening again?	3	0	1	0
4	Have you been very emotionally upset when reminded of the trauma (awesome, anger, sadness, guilty feeling)?	2	1	1	0
5	Have you had physical reactions when reminded of the trauma (e.g., sweating, heart racing)?	2	0	0	0
6	Have you been making efforts to avoid thoughts or feelings related to the trauma?	3	1	0	0
7	Have you been making efforts to avoid activities, situations, or places that remind you of the trauma or that feel more dangerous since the trauma?	0	1	2	1
8	Are there any important parts of the trauma that you cannot remember?.		1	0	0
9	Have you lost interest in activities you used to do?	3	2	1	1
10	Have you felt detached or cut off from others?	3	1	0	0
11	Have you experienced emotional blunting such as inability to cry or love.	3	1	1	1
12	Feeling that the future is negative and my goals will not be achieved (job, marriage, sons, long life).	3	1	2	1
13	Difficulty falling or staying asleep.	2	0	0	0
14	Have you had feeling of uneasiness, and episodes of anger.	1	0	0	0
15	Have you had difficulty concentrating?	2	3	1	0
16	Have you been overly suspicious (e.g. bad thing will happen).	1	1	1	0
17	Have you been overly alert or on-guard (e.g., checking to see who is around you, etc.)?	3	2	0	0

Table (2): Scoring of PSSI (case No. 2)

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Total	37	16	11	4	
Level of commutering		Moderate	Mild	No	
Level of symptoms	symptoms	disturbance	disturbance	disturbance	
Changes in symptoms					
Onset	Change percent				
Phase 1 vs. phase 2	56.75				
Phase 1 vs. phase 3	70.27				
Phase 1 vs. phase 4	89.18				

Case No. 2 (A.N): The total score of PSSI at phase (1) was 37 indicating severe disturbance. The total score of PSSI at phase (2) decreased to 16, indicating moderate disturbance, at phase (3) the total score of PSSI was 11 indicating mild disturbance. The change percent in total score between phase 1 and phase 2 was 56.75%, and the change between phase 1 and phase 3 was 70.27%. These results indicated a considerable reduction in the PSSI scores after the intervention.

Table (3): Scoring of PSSI (case No. 3)

No.	Item	Phase 1	Phase 2	Phase 3	Phase 4
1	Have memories and views from the traumatic event are coming intrusively?	3	2	2	1
2	Have you been having bad dreams or nightmares related to the trauma?	2	2	1	0
3	Have you had the experience of feeling as if the trauma were actually happening again?	3	2	2	1
4	Have you been very emotionally upset when reminded of the trauma (awesome, anger, sadness, guilty feeling)?	3	2	1	1
5	Have you had physical reactions when reminded of the trauma (e.g., sweating, heart racing)?	3	1	0	0
6	Have you been making efforts to avoid thoughts or feelings related to the trauma?	3	Т	1	2
7	Have you been making efforts to avoid activities, situations, or places that remind you of the trauma or that feel more dangerous since the trauma?	1	1	0	0
8	Are there any important parts of the trauma that you cannot remember?.	1	0	0	2
9	Have you lost interest in activities you used to do?	3	2	1	0
10	Have you felt detached or cut off from others?	3	1	2	0
11	Have you experienced emotional blunting such as inability to cry or love.	1	0	2	3
12	Feeling that the future is negative and my goals will not be achieved (job, marriage, sons, long life).	3	2	0	0
13	Difficulty falling or staying asleep.	3	2	2	1
14	Have you had feeling of uneasiness, and episodes of anger.	3	1	1	0
15	Have you had difficulty concentrating?	3	2	1	1
16	Have you been overly suspicious (e.g. bad thing will happen).	1	0	1	0
17	Have you been overly alert or on-guard (e.g., checking to see who is around you, etc.)?	3	1	0	0
	Total	42	22	17	12
	of symptoms	Extreme disturbance	Moderate to above moderate	Mild to moderate	No disturbance to mild
Chang	tes in symptoms				

Onset	Change percent
Phase 1 vs. phase 2	47.61
Phase 1 vs. phase 3	59.52
Phase 1 vs. phase 4	71.42

Case No. 3 (E.N): The total score of PSSI at phase (1) was 42 indicating extreme disturbance. The total score of PSSI at phase (2) decreased to 22, indicated moderate to above moderate disturbance, at phase (3) the total score of PSSI was 17 indicating mild to moderate disturbance, and at phase (4) the total score of PSSI was 12 indicating no disturbance to mild disturbance. The change percent in total score between phase 1 and phase 2 was 47.61%, and the change between phase 1 and phase 3 was 71.42%. These results indicated a considerable reduction in the PSSI scores after the intervention.

Table (4): Scoring of PSSI (case No. 4)

No.	Item	Phase 1	Phase 2	Phase 3	Phase 4
1	Have memories and views from the traumatic event are coming intrusively?	3	2	2	0
2	Have you been having bad dreams or nightmares related to the trauma?	0	0	0	0
3	Have you had the experience of feeling as if the trauma were actually happening again?	3	2	1	0
4	Have you been very emotionally upset when reminded of the trauma (awesome, anger, sadness, guilty feeling)?	3	1	1	1
5	Have you had physical reactions when reminded of the trauma (e.g., sweating, heart racing)?	3	0	0	0
6	Have you been making efforts to avoid thoughts or feelings related to the trauma?	3	2	1	1
7	Have you been making efforts to avoid activities, situations, or places that remind you of the trauma or that feel more dangerous since the trauma?	3	0	1	0
8	Are there any important parts of the trauma that you cannot remember?.	3	1	0	0
9	Have you lost interest in activities you used to do?	3	0	0	0
10	Have you felt detached or cut off from others?	2	0	0	0
11	Have you experienced emotional blunting such as inability to cry or love.	3	2	0	0
12	Feeling that the future is negative and my goals will not be achieved (job, marriage, sons, long life).	3	0	0	0
13	Difficulty falling or staying asleep.	3	1	0	0
14	Have you had feeling of uneasiness, and episodes of anger.	3	0	2	1
15	Have you had difficulty concentrating?	3	2	2	1
16	Have you been overly suspicious (e.g. bad thing will happen).	2	0	0	0
17	Have you been overly alert or on-guard (e.g., checking to see who is around you, etc.)?	3	0	1	0
	Total	46	13	11	4
Level	of disturbance	Extreme disturbance	No disturbance to mild	No disturbance to mild	No disturbance

Changes in symptoms				
Onset	Change percent			
Phase 1 vs. phase 2	71.73			
Phase 1 vs. phase 3	76.08			
Phase 1 vs. phase 4	91.30			

Case No. 4 (A.J.N): The total score of PSSI at phase (1) was 46 indicating extreme disturbance. The total score of PSSI at phase (2) decreased to 13, indicated no disturbance to mild disturbance, at phase (3) the total score of PSSI was 11 indicating no disturbance to mild disturbance, and at phase (4) the total score of PSSI was 4 indicating no disturbance. The change percent in total score between phase 1 and phase 2 was 71.73%, the change between phase 1 and phase 3 was 76.08%, and the change percent between phase 1 and phase 4 was 91.30%. These results indicated a considerable reduction in the PSSI scores after the intervention.

Case	Total score					
Case	Phase (1)	Phase (2)	Phase (3)	Phase (4)		
Case No. (1)	44	10	9	4		
Case No. (2)	37	16	11	4		
Case No. (3)	42	22	17	12		
Case No. (4)	46	13	11	4		

Table (5): Overall changes in symptoms

Table (5) showed significant reduction in psychological symptoms among all the cases, as initially before intervention (phase 1) there were extreme symptoms, and after early intervention, there were apparent reduction in symptoms as noticed in (phase 4) with minimal symptoms. This result reflected the effectiveness of early intervention model in reducing or preventing the development of psychological symptoms after witnessing or experiencing a traumatic event.

Table (0): Differences in 1 551 at unterent phases					
Phase		Mean	SD	t	P value
Pair 1	Phase 1	42.250	3.862	7.173	0.006 *
	Phase 2	15.250	5.123		
Pair 2	Phase 1	42.250	3.862	11.000	0.002 *
	Phase 3	12.000	3.464		
Pair 3	Phase 1	44.000	2.000	10.058	0.010 *
	Phase 4	6.666	4.618		

Table (6): Differences in PSSI at different phases

*Significant at 0.05

Table (6) indicated statistically significant difference in the PSSI scores between phase one and phase two (P=0.006), significant differences in PSSI between phase one and phase three (P=0.002), and significant differences in the PSSI score between phase one and phase four (P=

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0.010). These results reflected that the early intervention reduced the post-traumatic stress symptoms significantly.

Discussion

This study aimed to examine the effectiveness of early exposure-focused intervention after experiencing traumatic event. The intervention was implemented on four members of (Nijm family). The family lost five children as a result of missile explosion during the Israeli military escalation on May 2022 against Gaza Strip. Assessment of the four family members indicated initial extreme psychological symptoms, and the symptoms reduced significantly after the early exposure-focused intervention. In this study, the researcher used in vivo exposure to reminders of the trauma, and cognitive restructuring. This approach encourage family members to share their individual narratives, so that each can contribute to the co-creation of a family narrative, and to elaboration of the unique meaning of the family's experience and learning. The interaction between the family members re-enacts specific family based survival skills, thus helping the family to draw on the resources naturally available to them in adjusting to trauma (Veronese et al., 2014). Rothbaum et al. (2008) found that the brief exposure-based intervention approach was not only safe and feasible, but also resulted in lower levels of depression and distress. Recent research has shown that people want early outreach help by competent professionals (Dyregrov, 2003). Early intervention may help in forming adequate appraisals and counteracting misunderstandings and misperceptions, whereas not intervening may lead to the consolidation of maladaptive thoughts and behaviors (Dyregrov & Regel, 2012). In addition, Foa et al. (2006) reported that CBT intervention produced lower rates of PTSD and anxiety at a 2-month followup. Another study have examined the efficacy of CBT on PTSD, that CBT which can include either long or brief imaginal exposure, is efficacious in reducing PTSD (Bryant et al., 2019).

Conclusion: The early in vivo early exposure-focused intervention approaches highlighted the potential benefit of CBT in recently traumatized individuals, especially exposure techniques.

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Conflict of interest

There are no conflicts of interest to be declared.

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