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Effectiveness of a Stress Inoculation Training Program on Post-Traumatic Growth among Mothers of Children with Disabilities

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Abstract

Stress inoculation training (SIT) refers to techniques that enhance the capability to cope with psychological stressors, such as mental exercises, imagination, and developing social skills. Post-traumatic growth (PTG) occurs when an individual develops a deeper understanding of life and his/her capabilities after the traumatic experience, including enhancing relationships, life appreciation, and increasing psychological strength. SIT and PTG are two concepts that can be fostered through psychological support and learning from experiences. Both concepts are correlated to the individual's psychological resilience and ability to cope with stress and difficult experiences. The SIT could help in reducing the negative impact of traumatic experiences, leading to preparing the individual for PTG. Both concepts depend on psychological resilience and developing coping skills, enhancing the individual's ability to overcome crises and build a meaningful life. This study aimed to investigate the effectiveness of a SIT program on PTG among mothers of disabled children. The study sample included (60) mothers of disabled children selected from (7) disability centers in Irbid governorate. The study participants were selected intentionally from those who had achieved low scores on the PTG scale. The participants were divided equally into two groups (n=30 for each group): the experimental and control groups. The experimental group members were exposed to the SIT program over six weeks, with 13 overall counseling sessions for (90) minutes per session and two sessions per week. The control group receive no intervention. The experimental method and design were adopted, and the study tool was the PTG scale, which consists of five dimensions: new possibilities, relationships with others, personal strength, spiritual change, and life appreciation. The results revealed the effectiveness of the SIT program in improving the PTG levels among the experimental group mothers compared to the control group members. The results also revealed that the effectiveness of the SIT program continued among the experimental group even for an estimated period of one month after the end of the program, which proves the SIT program's effectiveness and its long-term impact among the study participants, whereby PTG levels were evaluated among the study participants one month after the end of the therapeutic program.

Keywords: Stress Inoculation Training, Post-Traumatic Growth, People with Disabilities, Therapeutic Intervention, Mothers of Disabled Children.

Introduction

The household is considered the basic unit and central pillar in societies' formation, and it is the most stable throughout human history. Children are the product of these households and contribute to preserving humankind. Allah has destined for some households to have children

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who differ from others in their capabilities, potential, and mental formation, and they are called people with disabilities. Having such children within the household, parents encounter various constraints and challenges, increasing the psychological pressure on them. Parents of a disabled child experience more significant life stress compared to the parents of a healthy child, and they pass through cognitive experiences similar to the people who have experienced trauma (Tsioka *et al.*, 2024). Since mothers are in constant contact with their children more than fathers, mothers are more aware of their children's physical and psychological state, which can expose them to stress and poor mental health. They may experience high pressure and stress as a result of their child's health condition (Tavakolizadeh *et al.*, 2017).

Individuals' reactions to traumatic events are incredibly varied. Some individuals might respond negatively, including developing "post-traumatic stress disorder (PTSD)", and may develop psychological disorders. In contrast, others may respond positively, leading to positive changes known as "Post-traumatic growth (PTG)" (i.e., the experience of positive psychological change that occurs after trauma), such as feeling a growth in personal power and strengthening relationships with others (Henson *et al.*, 2021). Having a disabled child within the household has had positive effects on the parent's lives, whereby they have become focused on success rather than going deep in worthless sadness and despair. Mothers have also become more appreciative of little things in life, and their priorities have changed dramatically, whereby the concentration has turned to fundamental changes such as spending more time with the household and friends (Cokluk, 2022).

Stress Inoculation Training (SIT)

The SIT refers to a type of cognitive behavioral therapy that Meichenbaum developed in the US to help individuals deal with various kinds of stress and pressure and enhance their ability to cope with them (Meichenbaum, 1985). This approach is characterized by flexibility and versatility in cognitive behavioral therapy, whereby it offers several main principles and clinical orientations for healing individuals who encounter life difficulties or those who suffer from chronic stress (Meichenbaum, 1977). This approach is considered a proven approach to stress management (Serino *et al.*, 2014). Stress inoculation has been successfully applied on a variety of individuals, including patients who are exposed to surgical operations, patients who are facing the stress of medical examinations, dialysis patients, people with high blood pressure, patients with ulcers, AIDS, and burns injuries, as well as soldiers, firefighters, and police officers, in addition to international students who are facing coping stress, people PTSD and anxiety disorders, and parents of children with cancer (Oktafianti *et al.*, 2023).

The basic concept of the SIT approach is the same as the concept of "immunization" used in the medical and Socio-psychological research on attitude change (Askari *et al.*, 2021). The SIT is a comprehensive type of cognitive-behavioral therapy that fosters immunity against stress in advance by helping individuals develop and acquire the confronting techniques to solve immediate problems and deal with future challenges (Jones & Turner, 2023). Oktafianti (2022) defined SIT as a short, semi-structured, and practical approach to managing psychological stress. Bahramfar and Ashori (2021) asserted that SIT also aims to provide individuals with physical and cognitive coping skills to confront stressful situations instead of collapsing while facing difficulties and life crises by equipping and training these individuals on adaptive skills. Besides, the SIT's general goals are to modify the individuals' response to stress by acquiring active coping strategies, enhancing self-regulation activity, and exploring the cognitive misappraisal

associated with stressful situations and modifying it (Fatemi *et al.*, 2023). Modern theories on stress emphasize having at least two main elements that influence how individuals respond to stress: (A) the appraisal process and (B) self-regulation systems (Tavakkoli *et al.*, 2021). The appraisal process includes the individual's evaluations for the situations that might be stressful, in addition to the resources needed to deal effectively with these situations, whereby the individual conducts an initial evaluation the existence of a threat, and then execute a secondary evaluation for finding the options of dealing with that threat (Oktafianti, 2022). Furthermore, up to date theories on stress revealed the methods that individuals use for emotions control, behavior, and thoughts when encountering potentially threatening circumstances (Thomas Tobin *et al.*, 2021).

One of the SIT therapy goals aim to train the participants on observing their maladaptive images, feelings, thoughts, and behaviors for enabling adaptive appraisals. It also includes training on problem-solving by defining the problem, outcomes, expectations, decision-making, and feedback evaluation. This includes modeling direct action skills, emotional regulation, and coping with self-control. Also, clients learn the method of utilizing maladaptive responses as signs for applying coping strategies, provide stimuli application in imaginary environments, and perform behavioral experiments to enhance their self-confidence and benefit from their confronting strategies. This also helps clients gain sufficient knowledge, self-understanding, and coping skills, which facilitates them in better dealing with stressful and unexpected situations (Dari *et al.*, 2023).

Bersamin (2023) revealed that the key hypothesis behind the SIT effectiveness is the pre-exposer or information availabiity, which decreases stressful situations and tasks novelty, fosters positive prediction likelihood, and fosters the control and predictability sense in the individual; thus, reduction of physiological and emotional interaction.

Any of the disability types is considered a critical factor that has significant effects on the household, and the key to these effects is the stress on parents. Mothers have an essential role in childcare; thus, they experience more stress than other household members (). Tavakolizadeh *et al.* (2017) showed that SIT increased problem-oriented coping styles and reduced the emotional and affective coping styles among mothers of children with mental retardation. The results revealed that SIT was effective in dealing with stress and improving the psychological well-being among the mental retardation children's mothers. Besides, SIT has a positive impact on various components, such as personal growth, environmental control, positive correlations with others, and purposeful life among the mental retardation children's mothers. Bahramfar and Ashori (2021) conducted a study in Isfahan (Iran), and it showed that SIT had a significant impact on the cognitive emotion regulation adaptive strategies among the mothers of blind children and on depression; however, no effect was found on the coping strategies and anxiety. Similarly, Bahramfar and Ashori (2024) investigated the effectiveness of SIT on the general health of mothers of blind children. The study revealed that SIT has a crucial role in the general health of mothers of blind children. In the same vein, Khanzadeh et al. (2013) asserted that stress management using cognitive behavioral therapy decreases depression and anxiety levels among the parents of disabled children.

Post-Traumatic Growth (PTG)

Individuals' psychological reactions are varied, as the usual trauma and traumatic events that people experience lead to adverse effects, such as PTSD. In contrast, some individuals may show

what is known as PTG, which is correlated to a set of positive changes and outcomes due to the individual's exposure to trauma (Bonazza *et al.*, 2022). It is worth mentioning that most people will experience one traumatic event at least in their lives and that many of them will suffer from PTSD, while a few will have complete disorder. However, most people will be able to recover over time and treatment; thus, it is important to consider the negative and positive impacts of the crises and trauma (Reksoprodjo, 2023). Various studies and theories have turned to PTG, which highlights the positive changes that individuals experience after being exposed to crises and traumatic events. Viola (2023) asserted that PTG concepts existed a long time ago. Blevins and Tedeschi (2022) confirmed that the literature had recognized the positive psychological changes that occur among individuals after crises and adversity, and these changes have been recognized in various cultures and religions, as well as in stories and philosophical writings.

Richard Tedeschi and Lawrence Calhoun are two psychologists from the "University of North Carolina" were the first to coin the PTG term in 1995. Other related terms include Benefit-finding, Adversarial growth, and Stress-related growth (Blevins & Tedeschi, 2022; Manger *et al.*, 2021).

The term "*Post-Traumatic Growth*" (PTG) refers to a set of psychological changes due to an individual's struggle with a crisis, whereby the individual survives the traumatic event and then shows improvement in important aspects of his/her life. Farhadi et al. (2022) confirmed that these positive changes do not mean the absence of struggle with the crisis. Yousefi Afrashteh *et al.* (2024) defined PTG as the gains that may arise as a result of confronting tragedy, trauma, or loss. In the same vein, Kashdan and Kane (2011) revealed that PTG levels differed according to demographic variables, such as educational level, age, gender, and income level, whereby women showed higher growth levels compared to men, while younger people showed a better growth level compared to older people.

Dimensions of Post-Traumatic Growth (PTG):

According to Rafiee *et al.* (2024), the PTG dimensions include several distinct aspects, as follows: ***(A) Life Appreciation***: as the individual develops a new method of life awareness as a result of cognitive reconstruction after confronting the psychological trauma, which increases the awareness of time value, prioritization, and striving towards new goals. ***(B) Relationships with others***: When an individual experiences a trauma, he/she seeks support from friends and relatives, which may lead to forming deeper relationships, while some relationships might be weakened and end. ***(C) Personal strength:*** Comparing oneself before and after the traumatic event shows increased skills and strength. Despite this sense of strength, the individual becomes aware of his/her personal weakness and understands the adverse effects of the trauma. ***(D) New possibilities.*** Surviving from the trauma, the individual discovers new life options that did not exist before and begins to change his/her goals and build a new life path. Furthermore, Younis (2018) added a new dimension, which is ***spiritual changes,*** whereby he considers that religious faith would increase as a coping mechanism and a method to search for an interpretation when facing trauma. The individual finds a spiritual interpretation in turning and directing towards Allah during crises, and this faith remains with him/her. A religious commitment to the duties and rules of the religion may accompany it.

In this regard, Tedeschi and Blevins (2015) emphasize that an individual should not expect growth in all domains or a specific time frame. The results pointed out that trauma severity plays a crucial role in the growth outcomes, whereby positive changes that result from the trauma can

vary depending on how much and how strongly the trauma affected the individual.

Crisis Theory is one of the approaches that attempted to explain PTG. Gerald Caplan developed this theory while working at "Massachusetts General Hospital" in the 1940s and 1950s with severe and intense experiences patients such as illness and death (Manyss *et al.*, 2021). Caplan noted that when people experience a given crisis, they enter a temporary disorder accompanied by confusion and dissonance. If the problem persists and is not resolved within 4-6 weeks, people often overcome this problem after that time frame. Furthermore, Caplan asserted that there are three stages of crisis reactions: (1) an increase in the individual's emotional stress level; (2) an increase in the daily level stress level characterizes the second. In this stage, the individual tries to find a solution for the problem but fails, which leads to increased stress even more, and the individual might enter a state of depression. (3) In the final stage, a partial solution for the problem is found through new coping strategies. Crisis resolution aims to overcome the individual's weaknesses and enhance his/her coping skills to shield against disorders when confronting other problems (Green *et al.*, 2021). Kaplan focused on control, prevention, and the importance of social, cultural, and material factors to avoid crises. These factors are used to understand, explain, and develop crisis resolution (Idol, 2018). On the other hand, cognitive theory fosters cognitive processing that reinterprets the meaning of traumatic events (Updegraff & Taylor, 2021; Patel *et al.*, 2024). Besides, natural cognitive processing also leads to positive changes (Patel *et al.*, 2024).

Farhadi *et al.* (2022) asserted that it is necessary to plan for developing socio-psychological support for mothers of disabled children, implement rehabilitation programs, and support the households of these children due to the role of feeling coherence and treatment methods in predicting PTG among mother of disabled children. Besides, Ibrahim and Alothman (2021) confirmed that the most essential factors in predicting PTG among mothers of autism spectrum disorder children in KSA were personal competence and friends' social support. Tsioka *et al.* (2024) revealed that mothers of autism spectrum disorder children had a moderate PTG level. The results showed that engagement, cognitive reframing, personal control, and depressive symptoms were important predictors of the growth level. Cokluk (2022) recommended that it is necessary to develop programs and family counseling services to increase psychological resilience and achieve positive growth among mothers of disabled children.

In all ages and under all circumstances, giving birth is a source of pressure and stress for the parents. In particular, giving birth to a disabled child would significantly affect the household, whereby the social, economic, and psychological stressors caused by having this type of child are much more significant than having a healthy child (Zhao *et al.*, 2021). Raising disabled children encounters various challenges, as parents have a care for a long-term and further medical expenses, in addition to feelings of shame, and suffer from psychological and physical struggles as a result of the private care given to these children (Ng *et al.*, 2021). Furthermore, this problem might negatively affect household cohesion and structure, which causes changes and adjustments to the household functioning method. In most societies, mothers are usually the leading players in taking care of their sick children more than any other household members, as she is the first who interacts directly with her child. Dealing with her disabled child, the mother would have various feelings, such as guilt and frustration due to not achieving her goals in life. Sometimes, in response to this psychological pressure, the mother greatly supports her children (Farhadi *et al.*, 2022).

According to Negri-Schwartz et al. (2024), PTG is not a direct result of the trauma itself; however, the coping strategy used to encounter the trauma determines the extent of growth that occurs after the trauma. When the mother deliver a disabled child, she tends to deal with this stressful event. The individual's capability to confront the stressors can be assessed based on two factors. ***The first*** is problem-focused coping strategies, such as confronting the problem actively, planning, avoiding competitive activities and impulsive actions, and seeking social support to encounter stressful situations. ***The second*** is emotion-focused coping strategies, which include mental disengagement from the problem, rejection, disengagement to problem solving, and focusing on feelings. Also, the individuals adopt different coping styles to encounter the most stressful events, and due to the limited available studies that addressed SIT and PTG among the mothers of disabled children, this study sought to explore the SIT impact on PTG among the mothers of disabled children, by testing the following two hypotheses:

H_1: There are no statistically significant differences (a=0.05) between the mean scores of the experimental group and the control group on the PTG scale among the mothers of disabled children attributed to the training program.

H_2: There are no statistically significant differences (a=0.05) between the mean scores of the experimental group in the post-application and follow-up application on the PTG scale attributed to the continuity of the training program impact.

Specifically, this study sought to explore the SIT impact in achieving positive changes among mothers of disabled children. Data analysis was done by using appropriate statistical tests to define if there were statistically significant differences in the PTG levels among trainees prior to and post-training program application.

This study can provide insights for consultants on the effectiveness of training on stress inclusion skills to overcome the trauma of having a disabled child and to transform this trauma into growth in various life aspects, which in turn mitigates the adverse effects of trauma.

Methodology

The study adopted the experimental approach with an experimental design that included two groups: (a) an experimental group that participated in the SIT intervention program as a therapeutic method and (b) a control group received no intervention program. Tedeschi and Calhoun (1996) developed the PTG scale and it was used in this study to evaluate the PTG levels among the participants. This scale consists of five dimensions: new possibilities, relationships with others, personal strength, spiritual change, and life appreciation. This scale was developed to target the psychological, social, personal, and spiritual dimensions of growth and to evaluate the positive changes that occurred among the mothers due to the struggle with trauma.

Members of the experimental group were engaged in structured therapeutic SIT sessions (relaxation, modeling, cognitive and behavioral adaptive skills, soothing skills, and thought exchange). This intervention aims to help mothers to conceive life positively and to increase their confidence in their abilities to use therapeutic techniques and methods in effective adaptation. In contrast, members of the control group received traditional counseling sessions without exposure to any treatment method. Pre and post-evaluations were made using the scale to measure the intervention effect.

Study participants

A sample of (164) mothers of disabled children was selected using the purposive sample method from several centers for people with disabilities in the Irbid governorate. The PTG scale was administered to the participants (164 mothers). The mothers who received low scores were selected, whereby their number reached (70 mothers), while (60 mothers) showed their desire to participate. Participants were randomly selected and divided into two groups equally: experimental and control groups (i.e., 30 for each group). This approach ensures that the study focuses on mothers with low PTG scores, which allows adequate evaluation of the intervention's success. Accurate randomization increased the reliability of the comparison between the study groups.

Ethical considerations:

The ethical considerations for this study include ensuring informing the participants fully on the study goals, procedures, and potential risks. Moreover, enrollment was entirely voluntary, and the study members provided informed consent previously before participating. Participations were kept confidential and anonymous throughout the intervention, and no identifying information was shared.

Moreover, the researchers informed the participants that they have the right to withdraw from the study at any time without any negative consequences. The intervention was designed to minimize potential harm and ensure a safe and supportive environment for all participants. The collected data was used only for research purposes, and the study ensured respecting the participants' rights and maintaining ethical standards.

Data Collection and Analysis

Data collection was done through administrating the PTG scale on study participants. Independent sample t-test and ANCOVA were extracted to analyze the data collected.

Study Tools

To assess the PTG level among the participants, the PTG scale developed by Tedeschi and Calhoun (1996) was used. This tool was selected due to its suitability to the current study objectives and sample.

The scale consists of (21) items distributed over five dimensions: new possibilities, relationships with others, personal strength, spiritual change, and life appreciation.

Original scale validity and reliability implications:

The scale has acceptable psychometric properties, as Tedeschi and Calhoun (1996) revealed the scale reliability implications, whereby the scale internal consistency as a whole reached (0.90%), and the scale test-retest reliability after two months reached (0.70%).

The scale reliability implications were represented by:

1. Factor analysis revealed five factors that explained 55% of the variance.
2. Pearson correlation coefficients ranged between 0.35 - 0.63.

Scale validity and reliability in the current study

The scale initial form included (25) items. It was presented to a jury of 10 arbitrators at Jordanian universities specializing in special education, psychological counseling, measurement, and

evaluation to verify the scale content validity. In light of the arbitrators' recommendations, items that received an approval rate of (80%) or more were kept, as the final items number reached (22) paragraphs. Five degree Likert scale was used to estimate the participants' responses, and the points were (5) always, (4) often, (3) sometimes, (2) rarely, and (1) never.

Construct Validity

To verify the scale construction validity, it was administered to a pilot sample (n= 30) of mothers who have a disabled child from outside the study participants. Item-total scale Pearson correlation coefficients were computed, and the values ranged between (0.43) and (0.76), and they are high and statistically significant values.

Reliability:

It was applied to a pilot sample (n=30) mothers to verify the scale reliability, and Cronbach's alpha was computed and reached (0.79).

Training program:

Developing the SIT-based therapeutic program was based on reviewing the related theoretical literature, and guidance programs focused on applying SITs were reviewed. According to the aforementioned, the researchers were able to create and develop a treatment program using the SIT method to foster the PTG level among mothers of disabled children in its final form. The guidance program included (13) guidance sessions distributed throughout (90) minutes per session, and the training program lasted for six weeks, with two sessions held weekly.

Each session included presenting the justifications and logical bases for the content and objectives of the session. Then, it included an educational presentation of the stress prevention method in line with the session objectives, participants' discussion, demonstration of the personal gains to each participant from achieving these objectives, feedback, and practicing interactive activities within the session.

After that, the researchers encouraged the participants to apply the stress prevention strategies that were discussed in the session and to transfer what had been learned outside the sessions to help reduce the stress and tension among the participants even more.

Intervention Program Foundations

The researchers developed the training program based on the following foundations:

- Reviewing the related literature;
- Determining the program's objectives and consistently formulating them;
- Identify some procedures and stress-prevention techniques to be administrated to the experimental group members during the intervention program, as well as the skills that increase their PTG.
- Developing the program's content to be presented during a set of sessions. The developed content contains the most important information and skills that should be provided to the experimental group members and the techniques used in these sessions.
- The researchers considered the logical sequence of the program's sessions, as they took into account that sessions shall be consecutive and correlated. The following is a

summary of the sessions:

Session No.	**Topic**	**Goals**	**Used Strategies**	**Duration**
First	Introduction and building the counseling relationship	Introduction and building the counseling relationship between the counselor and mothers, demonstrating the program's nature and goals, and discussing the mothers' expectations of the program.	Dialogue and discussion. Ice-breaking activities. .	90 Minutes
Second	PTG	Understanding the PTG concept. Discussing the effects of trauma. Identifying mothers' reactions to the trauma of having a disabled child. Understanding the relationship between thinking and feeling styles.	Brainstorming. Dialogue and discussion. Feedback Asking questions Small groups	90 Minutes
Third	Stress Inoculation Training	Introducing the mothers to the SIT method, its purpose, and the cases in which it is used.	Dialogue and discussion. Homework. Feedback Video presentation	90 Minutes
Fourth	Acquiring cognitive coping skills	Demonstrating the cognitive coping skills, describing the coping strategies, and modeling these strategies with mothers.	Dialogue and discussion. Asking questions Activities	90 Minutes
Fifth	Acquiring, teaching, and modeling the direct action adaptive skills	Identifying, training, and enabling the mothers to apply direct adaptive skills in situations that weaken mothers to achieve positive changes among them.	Feedback Activity Brainstorming. Homework Rephrasing	90 Minutes
Sixth	Soothing Skills	Understanding the soothing strategies and their purpose and practicing them within the session.	Publication Dialogue and discussion. Rephrasing Modelling Homework	90 Minutes
Seventh	Mental relaxation	Understanding the theoretical aspects of relaxation strategy and	Dialogue and discussion.	90 Minutes

		mental relaxation, learning about the impact of this strategy in reducing the trauma effect, the impact of positive thinking, and training the mothers to apply mental relaxation within the session.	Modelling Video presentation	
8th	Physical relaxation	Introducing mothers to physical relaxation, identifying the difference between physical and mental relaxation, and defining the correlation between physical relaxation and achieving growth in various aspects among the mothers.	Modelling Feedback Feeling reflection Activity Homework	90 Minutes
9th	Thoughts determination	Identifying the thinking patterns among mothers, defining the role of these thoughts on PTG reduction, and understanding the nature of these thoughts.	Self-talk Giving examples Homework Modelling	90 Minutes
10th	Converting irrational thoughts into rational ones	Teaching the mothers the skills of replacing irrational thoughts (negative) with rational thoughts (positive).	Dialogue and discussion. Cognitive reconstruction. Self-understanding. Homework.	90 Minutes
11th	Applying the cognitive adaptive skills	The goal is to demonstrate the cognitive adaptive skills among mothers and train them on these skills to achieve a positive change in the cognitive construct among them.	Modelling Dialogue and discussion. Activities.	90 Minutes
12th	Applying all cognitive and behavioral coping skills	Discussing the cognitive and behavioral coping strategies with mothers and using imagination for modeling these strategies. Preparing the mothers to finish the counseling program.	Giving questions. Imaginations. Role play. Dialogue. Discussion.	90 Minutes
13th	Closing session	Discussing the acquired pros from the program and the program cons	Dialogue and discussion. Giving questions.	90 Minutes

Discussion

First hypothesis results: "**H_1:** There are no statistically significant differences (a=0.05) between the mean scores of the experimental group and the control group on the PTG scale among the mothers of disabled children attributed to the training program."

To answer this hypothesis, the study scale was administrated as a pre-application to the study groups, and the mean scores and standard deviations for both groups were extracted before the

training program was implemented to assure the study groups equivalence. Then, t-test results were extracted to indicate the differences significance between the means. Table (1) shows these results.

Variable	Group	N	Mean	S.D.	t value	Significance level
PTG scale	Experimental	30	2.54	0.32	0.765	0.447
	Control	30	2.47	0.37		

Table (1): T-test results for the significance of differences between the means on the PTG scale pre-performance

Table (1) shows no statistically significant differences between the mean performance of the experimental and control groups on the study scale, which indicates the equivalence of the groups before implementing the study.

Also, the means and standard deviations for the two groups on the PTG scale were extracted, as shown in Table (2)**.**

Group	N	Mean	S.D.
Experimental	30	3.55	0.24
Control	30	2.55	0.32

Table (2): Means and S.D. on the post-application of the PTG scale

Table (2) demonstrates that there are apparent differences in the means and S.D. between the study groups on the PTG scale. To determine the significance of these differences, the Analysis of covariance (ANCOVA) test was operated, and Table (3) shows the results.

Variance source	Sum of squares	Degree of freedom	Mean squares	F value	P value	Eta squared (η^2)
Pre (mutual)	1310.	1	1310.	2.425	4120.	340.
Group	13.973	1	13.973	256.905	0.000	810.
Error	3.100	57	0.054			
Adjusted total	19.812	59				

Table (3): Analysis of covariance (ANCOVA)

Table (3) shows that there are statistically significant differences at the significance level (α = 0.05) between the means of the control and experimental groups, as the F value reached (256.905) with a statistical significance of (0.000).

To define the attributions of these differences, the adjusted means for the experimental and control groups were extracted, and Table (4) shows the results.

Group	Adjusted mean	Standard error

Experimental	3.537	0.043
Control	2.567	0.043

Table (4): Adjusted Means

Table (4) demonstrates that the adjusted mean was in favor of the experimental group, with a higher adjusted mean compared to the control group. Eta square (η2) was computed and reached (0.81) to determine the effect level. Thus, 81% of the explained variance in the total score of the PTG scale between the experimental and control groups is attributed to using the training program.

Second hypothesis results: "H_2: There are no statistically significant differences (a=0.05) between the mean scores of the experimental group in the post-application and follow-up application on the PTG scale attributed to the continuity of the training program impact."

The means and S.D. of the experimental group scores in the post-test and follow-up application were extracted to answer this hypothesis. The t-test results for the correlated samples were extracted to demonstrate the statistical differences between the means, as shown in Table (5).

Application	N	Mean	S.D.	T value	Significance
Post-test	30	3.55	0.24	14.1	410.
Follow up	30	3.46	0.23		

Table (5): Means, S.D., and t-test between the post-test and follow-up applications for the experimental group on the PTG scale.

Table (5) demonstrates no statistically significant differences at (α= 0.05) between the post-test and follow-up applications for the experimental group on the PTG scale attributed to the continuity of the training program.

Findings Discussion

Results of the first hypothesis indicated statistically significant differences at the significance level (α = 0.05) between the means of the control and experimental groups, as the adjusted mean was in favor of the experimental group with a higher adjusted mean.

This result is attributed to the fact that SIT has equipped the mothers of disabled children with techniques that helped them to confront the stresses resulting from having a disabled child and also to adapt, adjust, and coexist with these stresses, as SIT helps the individuals to acquire the cognitive and physical coping skills necessary to deal with stressful events and their consequences.

These results could also be attributed to the fact that training mothers on mental and physical relaxation skills helped reduce pessimism and negative feelings among the mothers and developed hope among them. Acquiring the optimism skill might help to confront stress and setbacks, overcome failure in some circumstances, and develop self-efficiency and flexibility, which leads to fostering a general sense of well-being.

The participants also became capable of dealing with the trauma effects resulting from having a disabled child. By learning relaxation techniques and stress management, these mothers'

psychological and physical state can be improved. This interpretation is consistent with Barrows and Jacobs (2002), who stated that relaxation techniques are one of the most widely used methods in managing stress worldwide, whether as an independent treatment or as joint to other treatments. The researcher believes that during the therapeutic sessions, the situations that caused stress among these mothers were defined, and these mothers were trained to control and manage these situations, which helped to reduce their future stress. Also, Stetz (2007) confirmed that the basic hypothesis behind the SIT method's effectiveness is that the information availability on stress or previous exposure experiences would reduce the stressful tasks novelty, increase positive prediction likelihood, and maximize the sense of predictability and control, which leads to decrease the physiological and emotional interaction.

This result can be attributed to the SIT program, which includes techniques and strategies that have led to changing mothers' views about various situations and issues, such as changing and replacing negative talk with positive ones. Training the mothers to replace negative thoughts has helped in getting rid of their stress and anxiety. Also, SIT includes cognitive restructuring techniques that modify thoughts and replace them.

The SIT focuses extensively on modifying thoughts and modifying the individuals' perceptions, as when the mothers' negative thoughts in the situations decreased, positive changes occurred to them.

Replacing the irrational thoughts technique also helped the mothers gain insight and awareness that the thoughts that control them are negative. The thinking method has a significant influence on their lives. Reaching this awareness of the negative thoughts and after being trained to limit these thoughts and replace them, the stress level was reduced among the mothers. This interpretation is consistent with Sanders *et al.* (1996), who stated that defining the negative thoughts and restructuring them would help the patients realize the thoughts that cause stress and express emotions that lead to distorted responses among them.

The SIT helped participants develop skills to deal with the daily life challenges associated with caring for disabled children. Also, the training enhances the skills of controlling thoughts and dealing with negative situations, which reduces feelings of stress and depression. Practical communication skills and positive thinking strengthen the relationship between the mother and household members, including the disabled child. Promoting positive thinking and learning time management and organization skills, positive changes were achieved in the daily lives of the mothers of disabled children.

These results are consistent with Tavakolizadeh *et al.* (2017), who revealed the effectiveness of SIT with mothers of mentally retarded children and align with Bahramfar and Ashori (2021), who indicated the effectiveness of SIT method with mothers of blind children.

Second hypothesis: The results of the second hypothesis indicated that there are no statistically significant differences (a=0.05) between the mean scores of the experimental group in the post-application and follow-up application on the PTG scale attributed to the continuity of the training program impact.

This result could be attributed to the fact that SIT during the 3rd and final stages (follow-up stage) allows the participants to practice the coping techniques in real environment stimuli situations; thus, mothers acquired self-efficacy to confront anxiety and stress that control them due to having a disabled child and to focus on their aspects even after the end of the program. The SIT final

application and follow-up stage allows the participants to apply various coping skills and techniques increasingly gradually. This stage aims to foster self-efficacy by helping the individual use the acquired coping skills in authentic contexts. Among the typical techniques and methods used in this stage are: (1) imaginative training, as the individual must imagine stressful scenarios and think about coping strategies; (2) behavioral rehearsals (role play) (Bandura, 1998). Acquiring the needed skills to operate under pressure successfully, individuals start training under real environment stimuli conditions, as training on these stimuli allows them to practice and enhance their acquired skills in the second stage.

During the second stage, it is essential to identify the entire pressure domain that participants might encounter during the task. These stressors, such as overload information, ambiguity, and time pressure might be general, while the other factors might be task-specific, including equipment failure, weather conditions, and translating the unfamiliar foreign dialects and language to the trainees. Despite that trainees shall encounter complete stressor domains during the training, the first exposure to multiple stressors at the same time might interfere their acquiring of skills.

The researchers continued to give mothers homework to apply what they learned in the sessions outside the treatment environment. Also, the researchers emphasize the need to transfer and generalize what they have learned in the sessions to outside similar situations that cause stress and pressure among the participants. The aforementioned two procedures played a role in maintaining the result on the follow-up scale.

This result can be attributed to the fact that SIT helps prevent and protect individuals before, during, and after stressful events. Also, SIT helps maintain its effectiveness over a long period through the training that mothers receive during the sessions by exposing them to real-life stimulus situations that could happen outside of the therapy sessions. This result is in line with Meichenbaum (1987), who stated that SIT focuses on developing inclusion against stress in advance by helping individuals develop and acquire coping techniques to solve immediate problems and deal with future constraints. Heath (2014) confirmed this claim and indicated that SIT is a preventive and therapeutic approach that uses cognitive behavioral therapy to enhance the individual's coping skills to confront current and future life stressors. Tarif and Al-Shawashra (2021) agreed with these results as they asserted that there were no statistically significant differences between the performance of women who were late in childbearing in the experimental group (who were exposed to SIT intervention) in the post-application and follow-up application.

Conclusion and Recommendations

The results of this study emphasize the effectiveness of the Stress inclusion training (SIT) program in enhancing and increasing the Post-traumatic growth (PTG) level among mothers of disabled children who were in the experimental group. Also, the effectiveness of this training program continued among the experimental group even for an estimated period of one month after the program's end, proving the SIT program's effectiveness and its long-term impact on the mothers of disabled children. This result indicates the importance of using techniques that could modify negative and irrational thoughts among the study participants, such as (refusing the thoughts, stopping thoughts, and cognitive restructuring). Also, the results indicate the importance of training on strategies that would reduce the stress and pressure resulting from having disabled children in the household, explicitly using mental and physical relaxation techniques. Stress inclusion training refers to the techniques that enhance the capability to cope

with psychological stressors, such as mental activities, imagination, and developing social skills.

It is worth mentioning that PTG occurs when an individual develops a deeper understanding of life and his/her capabilities after the traumatic experience, including enhancing relationships, life appreciation, and increasing psychological strength. SIT and PTG are two concepts correlated to the individual's psychological resilience and ability to cope with stress and difficult experiences. The SIT could help in reducing the negative impact of traumatic experiences, leading to preparing the individual for PTG. Both concepts depend on psychological resilience and developing coping skills, enhancing the individual's ability to overcome crises and build a meaningful life.

Based on these results, the researchers made the following recommendations:

Holding therapeutic programs for mothers of disabled children to eliminate the adverse effects of having a disabled child within the household and foster hope among these mothers. Also, the researchers recommend designing guidance groups to support the mothers of disabled children by creating fixed and permanent support centers in the hospitals. Furthermore, it is recommended to conduct qualitative studies to investigate in depth the suffering of mothers of disabled and to identify their needs accurately.

Study Limitations

Despite the importance of the study's findings, several limitations should be acknowledged:

- **Sample size and demographics:** The study was administered to a limited sample of mothers of disabled children in Jordan, which may limit the generalization of the study findings.
- **The short duration of the program:** The duration of the training program may have affected the extent of the observed changes. Long-term follow-up is necessary to determine whether the PTG increase is sustained over time.
- **Focus on quantitative measures:** The study relied on quantitative data to evaluate the PTG. Qualitative approaches, such as interviews or open-ended surveys, can provide a deeper understanding of the personal experiences and emotional factors that might contribute to PTG.

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References

Younes, I. (2018). *Post-traumatic growth.* Egypt: Yasturoon Publishing.

Tarif, S. & Al-Shawashreh, O. (2021). The Influence of a counseling program based on stress inoculation training to improve the level of psychological immunity in a sample of delayed childbearing in Jordan. Islamic University of Gaza (IUG) Journal of Educational and Psychology Sciences, 29(2), 386–405.doi: 10.33976/IUGJEPS.29.2/2021/15

Askari, A., Tajeri, B., Sobhi-Gharamaleki, N., & Hatami, M. (2021). A Comparative Study on the Effects of Positive Psychology and Stress Inoculation on Depression among Pregnant Women with Mitral Valve Prolapse. *International Journal of Body, Mind & Culture*, *8*(3), 2345-5802. Doi: 10.22122/ijbmc.v8i3.302

Bahramfar, E., & Ashori, M. (2021). The impact of stress inoculation training on cognitive emotion regulation and psychological problems of the mothers of blind children. *Quarterly Journal of Child Mental Health, 8*(1), 27-42. doi: 10.52547/jcmh.8.1.4

Bahramfar, E., & Ashori, M. (2024). Efficacy of Stress Inoculation Training on General Health of the Mothers of Blind Children. *International Journal of Disability, Development and Education, 71*(6), 955-967. doi.org/10.1080/1034912X.2023.2211026

Bersamin, R. A. (2023). Stress inoculation training (sit) on state-trait anxiety of high-stress senior college students. *Journal of Higher Education Theory and Practice, 23*(7)., 219-220. https://articlearchives.co/index.php/JHETP/article/view/5577/5529

Blevins, C. L., & Tedeschi, R. G. (2022). Posttraumatic growth & wisdom: Processes and clinical applications. In Post-Traumatic Growth to Psychological Well-Being: Coping Wisely With Adversity. *Cham: Springer International Publishing, 30*(1), 11-26. doi.org/10.1007/978-3-031-15290-0_2

Bonazza, F., Luridiana Battistini, C., Fior, G., Bergamelli, E., Wiedenmann, F., D'Agostino, A., ... & Lamiani, G. (2022). Recovering from COVID-19: psychological sequelae and post-traumatic growth six months after discharge. *European journal of psychotraumatology, 13*(1), 2095133. doi.org/10.1080/20008198.2022.2095133

Çokluk, G. F. (2022). Post Traumatic Growth in Mothers and Fathers of Children with Special Needs. *Cyprus Turkish Journal of Psychiatry & Psychology (CTJPP), 4*(4), 378-386. Doi:10.35365/ctjpp.22.4.09

Dari, A. F. W., Razzaq, A., & Noviza, N. (2023). Penerapan Teknik Stress Inoculation Training (SIT) untuk Mereduksi Post Traumatic Stress Disorder (PTSD) pada Remaja Korban Kekerasaan Seksual (Studi Kasus Klien "R"). *Journal of Society Counseling, 1*(3), 260-270. doi.org/10.59388/josc.v1i3.277

Ebrahim, M. T., & Alothman, A. A. (2021). Resilience and social support as predictors of post-traumatic growth in mothers of children with autism spectrum disorder in Saudi Arabia. *Research in Developmental Disabilities, 113*(36), 103943-103951. doi.org/10.1016/j.ridd.2021.103943

Farhadi, A., Bahreini, M., Moradi, A., Mirzaei, K., & Nemati, R. (2022). The predictive role of coping styles and sense of coherence in the post-traumatic growth of mothers with disabled children: a cross-sectional study. *BMC psychiatry, 22*(1), 708-718. doi.org/10.1186/s12888-022-04357-5

Fatemi, A., Nasiri-Amiri, F., Faramarzi, M., Chehrazi, M., Rad, H. A., & Pahlavan, Z. (2023). Comparing the effectiveness of virtual and semi-attendance stress inoculation training [SIT] techniques in improving the symptoms of anxiety, depression, and stress of pregnant women with psychological distress: a multicenter randomized controlled trial. *BMC Pregnancy and Childbirth, 23*(1), 346-355. doi.org/10.1186/s12884-023-05650-1

Green, D. A., Williams, B. A., & Park, K. (2021). Crisis counseling for black lives matter protests. *Journal of Mental Health Counseling, 43*(3), 198-211. doi.org/10.17744/mehc.43.3.03

Henson, C., Truchot, D., & Canevello, A. (2021). What promotes post traumatic growth? A systematic review. *European Journal of Trauma & Dissociation, 5*(4), 100195. doi.org/10.1016/j.ejtd.2020.100195

Hosseinkhanzadeh, A. A., Yeganeh, T., Rashidi, N., Zareimanesh, G., & Fayeghi, N. (2013). Effects of stress management training by using Cognitive-Behavioral method on reducing anxiety and depression among parents of children with mental retardation. *Sociology Mind,*

3(01), 62-66. doi.org/10.4236/sm.2013.31011

Jones, M. V., & Turner, M. J. (2023). Stress Inoculation Training (SIT). In Applying Cognitive Behavioural Therapeutic Approaches in Sport (pp. 107-121). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003162513-8/stress-inoculation-training-sit-marc-jones-martin-turner

Maniss, S., Castillo, Y. A., Cartwright, J., & Yznaga, S. D. (2021). Crisis counseling self-efficacy: Personal abilities and situational influences. *Journal of Human Services: Training, Research, and Practice.*, *7*(2), 1-15. https://scholarworks.sfasu.edu/jhstrp/vol7/iss2/4

Menger, F., Mohammed Halim, N. A., Rimmer, B., & Sharp, L. (2021). Post-traumatic growth after cancer: a scoping review of qualitative research. *Supportive Care in Cancer, 29*(11), 7013-7027. doi.org/10.1007/s00520-021-06253-2

Negri-Schwartz, O., Lavidor, M., Shilton, T., Gothelf, D., & Hasson-Ohayon, I. (2024). Post-traumatic growth correlates among parents of children with chronic illnesses: A systematic review and meta-analysis. Clinical Psychology Review, 102409. doi.org/10.1016/j.cpr.2024.102409

Ng, C. S. M., Fang, Y., Wang, Z., & Zhang, M. (2021). Potential factors of parenting stress in Chinese parents of children with autism spectrum disorder: A systematic review. *Focus on Autism and Other Developmental Disabilities*, *36*(4), 237-248. doi.org/10.1177/10883576211012599

Oktafianti, S. (2022). *Efektivitas Stress Inoculation Training (SIT) untuk Menurunkan Stres Akademik pada Mahasiswa PGSD Universitas Muhammadiyah Gresik* (Doctoral dissertation, Universitas Muhammadiyah Gresik). http://eprints.umg.ac.id/id/eprint/11402

Oktafianti, S., Hasanah, M., & Sholichah, I. F. (2023). The Effectiveness of Stress Inoculation Training to Reduce Academic Stress in PGSD Students. *International Journal of Applied Guidance and Counseling, 4*(1), 1-7. doi.org/10.26486/ijagc.v4i1.3176

Patel, Z. S., Casline, E. P., Vera, C., Ramirez, V., & Jensen-Doss, A. (2024). Unaccompanied migrant children in the United States: Implementation and effectiveness of trauma-focused cognitive behavioral therapy. *Psychological Trauma: Theory, Research, Practice, and Policy, 16*(2), 389-399. https://psycnet.apa.org/buy/2023-01506-001

Rafiee, M., Masoudi, S., & Khakpour, M. (2024). The effectiveness of schema therapy on cognitive flexibility, marital frustration and post-traumatic growth in women with cancer in Mashhad. *medical journal of mashhad university of medical sciences, 67*(2), 522-533.doi: 10.22038/mjms.2024.24591

Reksoprodjo, M. R. (2023). Post traumatic growth inventory: measuring the positive legacy of trauma on adolescences. *Journal of Advanced Education and Sciences*, *3*(1), 97-101. https://www.dzarc.com/education/article/view/265/261

Tavakkoli, R., Nazer, M., & Zeinaddiny Meymand, Z. (2021). Effects of stress inoculation training on general health and occupational adjustment strategies in patients with multiple sclerosis. *Journal of Occupational Health and Epidemiology*, *10*(2), 86-92.doi: 10.52547/johe.10.2.86

Tavakolizadeh, J., Mohammadi, Z., & Safarzade, S. (2017). Effect of stress inoculation training on coping styles and psychological well-being status of mothers with mental retard children. *Journal of Research and Health*, *7*(5), 1055-1064.doi: 10.18869/acadpu. Jrh7.5.1055.

Thomas Tobin, C. S., Erving, C. L., & Barve, A. (2021). Race and SES differences in psychosocial resources: Implications for social stress theory. *Social Psychology Quarterly,*

84(1), 1-25. doi.org/10.1177/0190272520961379

Tsioka, E., Zacharia, D., Soulis, S., Mantas, C., Petrikis, P., Koullourou, I., ... & Kotsis, K. (2024). Posttraumatic growth: the role of perceptions, coping and depressive symptoms among mothers of children with Autism Spectrum Disorder in Greece. *International Journal of Developmental Disabilities*, *70*(5), 925-934. doi.org/10.1080/20473869.2022.2151693

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*(3), 455-471. doi.org/10.1007/BF02103658

Updegraff, J. A., & Taylor, S. E. (2021). From vulnerability to growth: Positive and negative effects of stressful life events. In Loss and trauma (pp. 3-28). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315783345-2/vulnerability-growth-positive-negative-effects-stressful-life-events-john-updegraff-shelley-taylor

Viola, J. (2023). A Brief Introduction to Post Traumatic Growth. *Global Journal of Community Psychology Practice, 14*(2), 1-7. https://www.gjcpp.org/pdfs/Viola-Final.pdf

Yousefi Afrashteh, M., Moradi, M., & Rahmandel, L. (2024). How do some nurses achieve post-traumatic growth in stressful situations? Analysis of the role of hope, meaning of life, and resilience with the mediating role of coping self-efficacy. *Heliyon, 10*(23), e40038. https://www.cell.com/action/showPdf?pii=S2405-8440%2824%2916069-0

Zhao, M., Fu, W., & Ai, J. (2021). The mediating role of social support in the relationship between parenting stress and resilience among Chinese parents of children with disability. *Journal of autism and developmental disorders*, *51*(10), 3412-3422. doi.org/10.1007/s10803-020-04806-8