

A Recreational Games Program for Decreasing Post-Traumatic Stress Disorder in Mothers of Autistic Children

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Introduction and Research Problem:

Psychological trauma has clear beginnings as it results not only from the seriousness of the catastrophe and the resulting psychological stress, but also how individuals live with the catastrophe as this may make it either temporary or permanent psychological trauma. Therefore, trauma results in chronic disorder that may lead to psychological disorder that threatens the individual's life and puts him/her under severe stress (10: 10-11).

Post-traumatic stress is very serious as it hinders the individual's life, or stops it partially or completely, even if this is temporary, on all levels. It may continue for long periods of time making the individual unable to fulfill his/her daily life activities (21: 1200).

According to the 10th ICD, WHO indicated that post-traumatic stress disorder is an extended response to a stressful event or situation that may continue for a long or short time. It is characterized by its threatening or catastrophic nature. It may lead to severe sadness or sorrow that usually affects individuals (9: 49).

Post-traumatic stress disorder often comes with depression, aggression or anxiety. Its symptoms range from mild to severe. Those who are affected suffer from poor compatibility in work and social relations. In some cases, symptoms last for short time and disappear quickly but in other cases it may last for months or even years (41: 581).

This is clear in the works of Heim, C. & Nemeroff, C. B.,(2001) (18), Pine, D.S. & Chohen, J. A.,(2002) (33), McDermott, B. et al.,(2005) (27), Rubin, D. C., et al., (2008) (36), Damian, S. I., et al., (2011) (13), Gerson, R., & Rappaport, N., (2013) (15) and Calitz, F. J. W., et al., (2014) (11) who indicated that post-traumatic disorder includes several other psychological disorders that may appear individually or as a set. These include anxiety, depression, poor expression of emotions and thoughts and emotional disorder. It may induce some behavioral symptoms like aggression, smoking and drug addiction.

The current study is concerned with a traumatic event that induces the above-mentioned disorders. This event affects mothers who are shocked with the diagnosis of one of their children with autism spectrum

disorder (ASD) especially in an early stage of growth. The mother may suffer the shock of rejection, denial or even guilt and blaming herself or her husband. She may also feel angry. This leads the mother to adopt some socially unacceptable responses that appear in a try to relief the shock effect.

Under normal conditions, women share responsibilities of their families with increased stress due to home duties, rising children, providing family with comfort and work conditions. Under crisis conditions, women play even a more effective role in preserving family strength and integrity in the face of economic, social, educational and health stressors. Diagnosing one child with ASD is a shocking event that the mother tries to reject and deny. She may even feel guilty and blame herself or her husband for that. She starts to suffer anger, sorrow, anxiety, depression, pessimism, breakdown, lack of confidence and psychological stress (5: 88) (26: 39-41) (35: 2) (32: 43).

The stress the family suffers due to diagnosing one of its children with ASD is not easy as it affects all social, economic, behavioral and psychological aspects of the family. The child affects his/her family just as the family affects its child. The consequences of this diagnosis are not limited to the child. Instead, it extends to the whole family. Of course, the mother is the most affected person with this traumatic event and this may lead to post-traumatic disorder (4: 407-408).

As the mother is affected with this traumatic event, she loses her balance and the event affects her ability to achieve psychological and social compatibility. She tries hard to regain balance but she may succeed or fail. If she fails, she gets post-traumatic disorder with clear symptoms of depression, guilt, anxiety, sorrow and despair. Therefore, the autistic child's mother should be helped to get rid of post-traumatic stress disorder symptoms (30: 42) (17: 869-871).

Autism is a functional neurodevelopmental disorder that affects the child's social skills and ability to harmonize with the society. This problem is even more serious as the international rates of autism are increasing making it the third developmental disorder on the internal level (19: 22).

This disorder differs from one child to another but a set of general characteristics can be identified on the behavioral, cognitive, emotional and social aspects. These include qualitative limitation in social relations as autistic children find it difficult to realize the others' emotional status. Therefore, they face major problems in emotional expression with clear limitations in communication, language and persistence in oneness as they express compulsory behavior to maintain oneness. They even face difficulties when routine is changed and they may express anger fits in

response to that, in addition to self-harm behavior, ritual, unusual, repetitive and stereotyped behaviors. They also suffer from poor symbolic play as they face major problems in expressing symbolic play skills and imitating other children (29: 284-287).

Post-traumatic stress disorder is a reaction to a traumatic event that affects mothers due to the diagnosis of one child with ASD. The mother feels living in a traumatic experience to the point that she is isolated from the world around. Her stress and reactions to the event increase. This leads her to feel distressed, anxious and sorrowful in addition to losing the feeling of familiarity with increased fear (4: 417).

The researcher noticed that this reaction differs from one mother to another as some mothers accept the diagnosis while others reject it showing post-traumatic stress symptoms. As this disorder leads to other serious complicated problems, the current study tries to establish an early Program through practicing recreational games to overcome and decrease the negative effects of the trauma.

Recreational games fulfill the integrated human needs (physical – psych-emotional – social). In addition, it provides the individual with the opportunity to improve his/her abilities and potentials in addition to strengthening his/her will and sense of responsibility. It represents an educational tool that improves all health, physical, cultural, mental, psychological, emotional, social and ethical aspects of human character (31: 20-26).

Recreational games protect the individual from anxiety, stress, depression and psychological distress. Through these activities the individual can express himself and forms new friendships through interaction with others in addition to feel happy, satisfied, comfortable and confident. It also improves the quality of life and mental, physical, social and psychological well-being (37: 17-26) (39: 44-46) (34: 1-4, 51, 74, 82, 88, 155, 156).

The researcher also noticed that post-traumatic stress disorder should be prevented among mothers of autistic children with all its negative symptoms like guilt, sorrow, anger, fear, anxiety, stress, depression and pessimism that affect the whole family negatively. It is very important to help those mothers to decrease these symptoms. This led the researcher to try to design an Program using recreational games to decrease the symptoms of post-traumatic stress disorder among mothers of autistic children. According to the researcher's knowledge, no previous study tried to do so.

Aim:

The current research aims to decrease post-traumatic Stress disorder in a sample of mothers of autistic children through a recreational games' Program.

Hypothesis:

There are statistically significant differences between the pre- and post-measurements of the experimental group on decreasing symptoms of post-traumatic stress disorder among mothers of autistic children in favor of post-measurements through the recreational games' Program.

Methods:

Approach:

The researcher used the experimental approach (one-group design) with pre- and post-measurements.

Participants:

Research community (n=27) included all mothers of autistic children in Al-Hayah Center for care and rehabilitation of individuals with special needs – Al-Santa – Gharbia in 2019. The researcher applied the Post-Traumatic Disorder Scale on all of them and chose to recruit (8) mothers who got the highest degrees as a main sample. All mothers were (25-35 years) with stable socio-economic conditions and live in Al-Santa. Both parents had university degrees with percentage of (29.629%) of the research community. The researcher verified data normality as seen in table (1).

Table (1): Data Normality of Participants on Growth Factors and Post-Traumatic Stress Disorder (n=8).

μ	Variables	Mean	Median	SD	Kurtosis	Squewness	
1	Age	30.875	31.500	3.907	-1.693	-0.335	
2	Number of family members	4.375	4.00	0.51755	-2.240	0.644	
3	Post-Traumatic Disorder Scale	Recall	45.125	45.500	1.959	-1.294	-0.534
4		Avoidance	43.250	43.500	1.281	-0.021	-0.611
5		Hyperstimulation	42.875	42.500	2.031	-0.886	0.224
6		Total	131.250	131.00	4.200	-2.203	0.013

Table (1) indicated that squewness values were between (± 3). This means that data is free of radical distribution and verifies data normality for all participants.

Data Collection Tool:

1- Post-Traumatic Stress Disorder Scale for Mothers of Autistic Children by: Salah Abd Al-Hakeem Ahmed Adam (2019) (4).

The scale contains three dimensions with (16) items for each dimension and total of (48) items.

First dimension: Recall

This dimension represents painful memories the mother recalls. It includes all painful thoughts, images, perceptions and repeated nightmares related to the traumatic event in addition to psychological stress and physiological pain. This dimension includes (16) items (1-16).

Second dimension: Avoidance

This dimension represents avoiding talks, thoughts and feelings related to the traumatic event in addition to avoiding persons, activities and places that remind the mother with the trauma. It also includes alienation, avoiding others, unwillingness to establish relations, inability to feel others, anxiety and fear of the future. The dimension includes (16) items (17-32).

Third dimension: Hyperstimulation

This dimension represents the difficulty to sleep or continue sleeping, trauma-induced rage, lack of focus, fears and arousal. It includes (16) items (33-48).

The researcher used three-point Likert Scale to respond to the scale as: Yes = 3 – Somehow = 2 – No = 1. When the mean of an item or a dimension is from 1 to > 1.67, this shows low level. When the mean of an item or a dimension is from 1.67 to > 2.35, this shows moderate level. When the mean of an item or a dimension is from 2.35 to 3, this shows high level. The total degree of the scale is from 48 to 144. High degrees show higher levels of post-traumatic stress disorder among mothers of autistic children.

To verify the validity and reliability of the scale, the researcher performed the first pilot study on a pilot sample (n=10) from the same research community and outside the main sample from 16-11-2019 to 23-11-2019. The researcher verified internal consistency through calculating correlation coefficients between each item and its dimension, each item and total score and each dimension and total score as seen in tables (2) and (3). The researcher verified the scale reliability using test/retest procedure and calculated Cronbach Alpha as seen in tables (4) and (5).

Table (2): Internal Consistency of the Post-Traumatic Stress Disorder Scale for each item and its dimension and each item and total score (n=10)

Correlation Coefficient (R)								
First dimension			Second dimension			Third dimension		
S	Item with dimension	Item with total	S	Item with dimension	Item with total	S	Item with dimension	Item with total
1	0.861**	0.873**	17	0.836**	0.834**	33	0.903**	0.900**
2	0.904**	0.899**	18	0.889**	0.899**	34	0.875**	0.869**
3	0.833**	0.830**	19	0.930**	0.917**	35	0.834**	0.841**
4	0.868**	0.869**	20	0.841**	0.847**	36	0.943**	0.939**
5	0.851**	0.841**	21	0.821**	0.830**	37	0.898**	0.893**
6	0.883**	0.873**	22	0.818**	0.840**	38	0.862**	0.869**
7	0.858**	0.844**	23	0.908**	0.894**	39	0.898**	0.899**
8	0.914**	0.900**	24	0.861**	0.869**	40	0.903**	0.900**
9	0.894**	0.893**	25	0.893**	0.885**	41	0.910**	0.917**
10	0.874**	0.871**	26	0.906**	0.893**	42	0.851**	0.847**
11	0.930**	0.927**	27	0.857**	0.841**	43	0.831**	0.830**
12	0.913**	0.909**	28	0.889**	0.899**	44	0.870**	0.873**
13	0.873**	0.893**	29	0.863**	0.871**	45	0.899**	0.894**
14	0.829**	0.841**	30	0.927**	0.927**	46	0.898**	0.893**
15	0.904**	0.899**	31	0.908**	0.909**	47	0.898**	0.893**
16	0.874**	0.871**	32	0.871**	0.869**	48	0.874**	0.871**

* R table Value on $P \leq 0.05 = 0.602$

** R table Value on $P \leq 0.01 = 0.735$

Table (2) indicated that correlation coefficient values between each item and its dimension ranged from 0.818 to 0.943, while the same values between each item and total score ranged from 0.820 to 0.939. this clearly shows that the scale is internally consistent and valid.

Table (3): Internal Consistency of the Post-Traumatic Stress Disorder Scale for each dimension and total score (n=10)

S	Dimension	R
1	Recall	0.998**
2	Avoidance	0.998**
3	Hyperstimulation	0.999**

* R table Value on $P \leq 0.05 = 0.602$

** R table Value on $P \leq 0.01 = 0.735$

Table (3) indicated statistically significant correlations between each dimension and total score of the scale.

Table (4): Correlation Coefficients Between Test and Retest to verify the Reliability of the Post-Traumatic Stress Disorder Scale (n=10)

S	Dimension	Test		Retest		R
		Mean	SD±	Mean	SD±	
1	Recall	44.00	1.699	44.100	1.595	0.984**
2	Avoidance	43.600	2.118	43.800	1.988	0.981**
3	Hyperstimulation	43.100	2.330	43.300	2.162	0.985**
4	Total	130.700	4.217	131.200	4.022	0.993**

* R table Value on $P \leq 0.05 = 0.602$

**** R table Value on $P \leq 0.01 = 0.735$**

Table (3) indicated statistically significant correlations between test and retest. This indicates the reliability of the scale.

Table (5): Cronbach's Alpha for Reliability of the Post-Traumatic Stress Disorder Scale (n=10)

Cronbach's Alpha		
0.866		
S	Dimensions	Cronbach's Alpha if Item Deleted
1	Recall	0.841
2	Avoidance	0.842
3	Hyperstimulation	0.842

Table (5) indicated that Cronbach's Alpha for all dimensions were statistically significant showing the scale's reliability.

2- The Recreational Games Program (by the researcher):

The researcher chose a group of recreational activities and games to increase happiness, joy and comfort, help forming relations, and to decrease anxiety, stress, depression, fear, distress and all symptoms of post-traumatic stress disorder among mothers of autistic children. Experts of recreation, psychology and mental health (n=9) indicated the importance of these activities as their agreement percentages ranged from 88.88% to 100%. The activities and games were distributed to the Program units.

Aim:

The Program aims to decrease symptoms of post-traumatic stress disorder among mothers of autistic children.

Principles:

- Considering all psychological, mental, physical and socio-economic aspects of mothers of autistic children (25-35 years).
- Considering progression, variation and individual differences.
- Considering rest intervals.
- Considering safety procedures.
- Considering excitement, joy and enjoyment when applying the activities and games using attractive and colorful tools.
- Encouraging participants continually
- Applying the Program with music and songs.

Content:

The Program includes three parts:

- **Start-up:** This part aims to prepare mothers physically and mentally through joy and enthusiasm to actively participate in the unit to decrease symptoms of post-traumatic stress disorder among mothers

of autistic children. This part includes some recreational games for (10) minutes.

- **Main part:** This part includes the main games and activities that work on reducing symptoms of post-traumatic stress disorder among mothers of autistic children according to the unit and Program objectives. It lasts for (30) minutes.
- **Conclusion:** This part aims to cool-down the body and return it to normal conditions. It includes some recreational games for (5) minutes.

The researcher prepared the preliminary version of the Program and presented it to (9) experts of recreation, psychology and mental health who eliminated a minor number of games.

Recreational Games:

Most games depend on team relay format and the team wins when finishing the game first. All games and activities are applied with music and songs. Mothers are encouraged verbally to participate and are given gifts and prizes.

The researcher performed the second pilot study from 25-11-2019 to 30-11-2019 to test the suitability of the Program.

The Program includes (36) units and lasts for almost (3) months (3 units per week for 12 weeks) as seen in tables (6) and (7). The researcher applied the Program directly with instructions for participants according to their abilities.

Table (6): Timeframe of the Recreational Games Program

Total Duration	3 months
Units per week	3 units
Total units	36 units – 12 weeks
Unit duration	45 min
Startup duration	10 min
Main part duration	30 min
Conclusion duration	5 min
Total duration per week	45 x 3 = 135 min
Total duration per month	135 x 4 = 540 min
Total duration in (3) months	540 x 3 = 1620 min

Table (7): Relative Distribution of the Recreational Games Program Units

Unit parts	Per day (min)	Per week (min)	Per month (min)	In 3 months (min)	Percentage
Start up	10	30	120	360	22.22%
Main part	30	90	360	1080	66.66%
Conclusion	5	15	60	180	11.11%
Total	45	135	540	1620	100%

Main Study:

After verifying the validity and reliability of the scale and the recommended Program, and fulfilling all administrative requirements, the researcher initiated the following:

- **Pre-measurement:** The researcher applied the Post-Traumatic Stress Disorder Scale to the main sample (n=8) on 2-12-2019 as a pre-measurement.
- **Main application of the Program:** The researcher applied the recreational games Program to the main sample from 7-12-2019 to 26-2-2020. The Program lasted for (3) months (12 weeks with 3 units per week). Total number of units was (36).
- **Post-measurement:** The researcher applied the Post-Traumatic Stress Disorder Scale to the main sample (n=8) on 29-2-2020 as a post-measurement.

Table (8): Timeframe of the Program and measurements

Week	Days		
First pilot study	Saturday 16-11-2019 Saturday 23-11-2019		
Second pilot study	Monday 25-11-2019	Wednesday 27-11-2019	Saturday 30-11-2019
Pre-measurement	Monday 2-12-2019		
Main application			
	Saturday	Monday	Wednesday
1	7-12-2019	9-12-2019	11-12-2019
2	14-12-2019	16-12-2019	18-12-2019
3	21-12-2019	23-12-2019	25-12-2019
4	28-12-2019	30-12-2019	1-1-2020
5	4-1-2020	6-1-2020	8-1-2020
6	11-1-2020	13-1-2020	15-1-2020
7	18-1-2020	20-1-2020	22-1-2020
8	25-1-2020	27-1-2020	29-1-2020
9	1-2-2020	3-2-2020	5-2-2020
10	8-2-2020	10-2-2020	12-2-2020

11	15-2-2020	17-2-2020	19-2-2020
12	22-2-2020	24-2-2020	26-2-2020
Post-measurement			Saturday 29-2-2020

Statistical Treatment:

The researcher used SPSS Software to calculate: Mean – SD – Median – Kurtosis – Skewness – Correlation Coefficient (R)– Cronbach's Alpha – Wilcoxon test (Z) – improvement percentage.

Results:

Table (9): Difference Significance Between Pre- and Post-Measurements of Participants on the Post-Traumatic Stress Disorder Scale (n=8)

S	Measurement	Mean of Ranks		Sum of Ranks		Z	P	
		Negative	Positive	Negative	Positive			
1	Post-Traumatic Stress Disorder Scale	Recall	4.500	0.00	36.00	0.00	-2.527	0.012
2		Avoidance	4.500	0.00	36.00	0.00	-2.555	0.011
3		Hyperstimulation	4.500	0.00	36.00	0.00	-2.536	0.011
4		Total	4.500	0.00	36.00	0.00	-2.524	0.012

Table (9) showed (Z) values (Wilcoxon Test) for differences between two related samples. P values were less than 0.05 indicating statistically significant differences between the pre- and post-measurements of participants on Post-Traumatic Stress Disorder Scale, in favor of post-measurements.

Table (10): Improvement Percentages Between Pre- and Post-Measurements of Participants on the Post-Traumatic Stress Disorder Scale (n=8)

S	Measurement	Pre-		Post-		Means differences	Improvement percentages	
		Mean	SD±	Mean	SD±			
1	Post-Traumatic Stress Disorder Scale	Recall	45.125	1.959	21.875	1.457	23.250	51.523
2		Avoidance	43.250	1.281	20.750	0.886	22.500	52.023
3		Hyperstimulation	42.875	2.031	19.500	0.925	23.375	54.518
4		Total	131.250	4.200	62.125	1.552	69.125	52.666

Table (10) indicated that improvement percentages between the pre- and post-measurements of participants on Post-Traumatic Stress Disorder Scale ranged from 51.523% to 54.518%.

Discussion:

Table (9) presented results of Wilcoxon test. Significance levels were (0.012 – 0.011 – 0.011 – 0.012) for recall, avoidance, hyperstimulation and total score respectively and they are all less than (0.05). (Z) calculated values were (-2.527), (-2.555), (-2.536) and (-2.524) for recall, avoidance, hyperstimulation and total score respectively. This indicates statistically significant differences between pre- and post-measurements of participants on Post-Traumatic Stress Disorder Scale in favor of post-measurements due to the recreational games' Program.

Table (10) indicated that improvement percentages in decreasing post-traumatic stress symptoms were (51.523%), (52.023%), (54.518%) and (52.666%) for recall, avoidance, hyperstimulation and total score respectively.

The researcher thinks that these improvements in decreasing post-traumatic stress disorder symptoms among mothers of autistic children are due to the recreational games' Program with all its activities that made mothers feel happy and joyful in addition to improving feelings of security, and comfort. The activities improved mental and psychological comfort, focus, mental strength, will, courage in addition to improving decision making, interaction, communication with others, cooperation, team participation and forming social relations. The activities also improved team work, hope, optimism, overcoming obstacles and feeling free of stress, fears, terror, danger, anger distress and depression. This decreases all symptoms of post-traumatic stress disorder among mothers of autistic children.

These results are consistent with Kubany et al (2003) (24), Cohen & Hien (2006) (12) and Johnson & Zlotnick (2006) (20) who indicated that behavioral cognitive Programs had positive effects on decreasing guilt and depression in addition to increasing self-esteem and decreasing post-traumatic stress disorder among abused women. Kirlin, M. (2010) (22) indicated that yoga was effective in decreasing post-traumatic stress and traumatic effects among women suffering from domestic violence. Gebril, M. & Mohamed A. (2013) (14) indicated that their therapeutic Program had positive effects on decreasing post-traumatic disorder among abused women. Ibrahim, A. (2015) (6) indicated that the recreational Program had positive effects on preventing daily distress among women. Al-Bulity, Z. (2015) (7) indicated that recreational activities decreased psychological stress (social status stress – co-workers relations stress – professional development stress – family relations stress) among women. Al-Feky, A. (2016) (8) indicated that acceptance and commitment therapy had positive effects on improving psychological resilience among mothers of autistic children. Abd Al-Hameed, A. (2016) (1) indicated that the guidance

Program had positive effects on improving psychological resilience and decreasing stress among mothers of autistic children. Koaima, S. (2018) (23) indicated that the guidance Program with play had positive effects on decreasing post-traumatic stress disorder and depression among children. Mohamed, S. (2018) (28) indicated that behavioral cognitive guidance had positive effects on decreasing stress among mothers of autistic children. Younes, I. (2019) (40) indicated that guidance Program had positive effects on improving positive thinking skills and post-traumatic growth among mothers of autistic children. Abu Al-Maaty, O. (2019) (3) indicated that the recreational Program had positive effects on improving mental well-being, positive thinking, problem-solving, self-efficacy, achievement motivation, challenge, persistence, bearing responsibility, forming relations, emotional control and decreasing conflicts (psychological immunity) among women. Adam, S. (2019) (4) indicated that the professional Program had positive effects on decreasing post-traumatic stress disorder among mothers of autistic children. Hannour et al (2019) (16) indicated that the training Program had positive effects on improving resilience among mothers of autistic children. Abd Al-Kareem, M. (2019) (2) indicated that the guidance Program had positive effects on decreasing stress and improving positive attitudes among mothers of autistic children.

Recreational games and activities improve quality of life through improving happiness and comfort among participants. It improves physical, mental, social and psychological well-being in addition to the achievement motivation, forming friendships, cooperation, interaction with others, self-assertiveness, comfort and self-confidence. It protects individuals from fear, anxiety, depression stress and psychological distress (37: 17-26) (25: 205-261) (39: 44-46) (38: 485-490) (34: 1-156).

The researcher thinks that the recreational games' Program decreased post-traumatic stress disorder symptoms among mothers of autistic children. Recreational games and activities are successful means for helping mothers of autistic children to achieve balanced growth in all physical, mental, social and psychological aspects. It is a major need for daily life to achieve advance of individuals and societies. This proves the study hypothesis.

Conclusion:

According to this research aim, hypothesis, methods and results, the researcher concluded that the recreational games' Program had positive effects on decreasing post-traumatic stress disorder symptoms among mothers of autistic children.

Recommendations:

The researcher recommends the following:

- Generalizing the application of the recommended recreational games' Program for all mothers of autistic children in all centers and institutes.
- Performing more studies to design more recreational Programs for decreasing anxiety, depression and stress in addition to improving positive thinking skills, self-confidence, mental resilience and psychological immunity to improve the quality of life among parents of autistic children.
- Performing more studies to design specialized recreational Programs in physical, health, mental, social and psychological aspects of parents of autistic children and children with special needs to decrease and solve problems and achieve advance.

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