Women. Health. Bull. 2022; 9(1)

Published online 2022 January.

Original Article

Comparing the Effectiveness of Positive Psychotherapy and Pivotal Response Treatment in Family Satisfaction in Mothers of Children with Autism

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Received October 16, 2021; **Revised** November 10, 2021; **Accepted** December 01, 2021

Abstract

Background: The mothers of children with autism spectrum disorder (ASD) experience extreme stress due to the limited social, communicational, and emotional competencies of their children along with inefficient cognitive development and maladjustment. This study aimed to investigate the effectiveness of positive psychotherapy and pivotal response treatment (PRT) in family satisfaction in mothers of children with ASD.

Methods: The research method was a quasi-experimental study with a pretest-posttest control group design. The study population comprised all mothers of children with autism in Ahvaz, Iran in 2021. Forty-five mothers were selected through convenience sampling and were randomly divided into two experimental groups and one control group (each with 15 members). The experimental group underwent positive psychotherapy (fourteen 90-minute sessions) and PRT (twelve 90-minute sessions). However, the control group received no intervention. The data were analyzed using the analysis of covariance.

Results: The mean±standard deviation of the post-test scores of family satisfaction in the positive psychotherapy and PRT groups was 33.66±6.98 and 36.26±6.57, which was significantly different from the control group (18.53±4.05). The results suggested that both positive psychotherapy and PRT were effective in increasing family satisfaction in mothers of children with autism ($P<0.001$). There were no significant differences between the effectiveness of positive psychotherapy and PRT in increasing family satisfaction in mothers of children with autism.

Conclusion: It can be concluded that positive psychotherapy and PRT can be adopted to increase the family satisfaction of mothers.

Keywords: Autistic disorder, Family, Psychotherapy, Women

How to Cite: Khoshakhlagh MM, Marashian FS, Jayervand H. Comparing the Effectiveness of Positive Psychotherapy and Pivotal Response Treatment in Family Satisfaction in Mothers of Children with Autism. Women. Health. Bull. 2022;9(1):1-8. doi: 10.30476/WHB.2022.93640.1155.

1. Introduction

Autism, or autism spectrum disorder (ASD), is a group of neurodevelopmental disorders with clinical symptoms, including persistent deficits in social communication and interaction and restricted, repetitive patterns of behavior, interests, or activities, according to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5). Unusual interests in sensory aspects of the environment are added to the related behaviors and they are not included as a part of the main definition (1). The main emergence of social impairments in autism constitutes diminished eye contact, lack of social conflicts and emotions, deficit in using non-linguistic behaviors, and lack of age-appropriate communication (2).

Causing social-cognitive defects, ASD results in various social challenges and dysfunctions among autistic individuals (3). However, not only does this disorder involve patients, but it also leads to a chain of familial and social difficulties (4). The parents of children with autism face many challenges and pains in addition to tolerating different problems caused by ASD. Usually, mothers experience serious mental pressure due to the presence of their children with autism in society. Since mothers spend more time than fathers taking care of their children, they are seriously exposed to a variety of mental harms and tensions (5). Due to its 10% to 17% growth per year, autism is on the verge of becoming an incremental developmental disease (6). The presence of children with special needs would be a source of stress for the family members, particularly the mothers who spend more time than others dealing with children, due to the necessity of specific care. Therefore, mothers can easily experience too much stress because of children's requests and care (7). The resultant stress can cause psychological changes, such as increased anxiety, tension, irritability, anger, and failure to assume the maternal role. These factors will also have

direct effects on family satisfaction (8). Like any other type of satisfaction, family satisfaction is considered to be an attitudinal construct consisting of an emotional component (pleasant feelings), a cognitive component (positive evaluations), and a behavioral component (behavioral attempts caused by emotional states and positive cognitions). Generally, satisfaction with family indicates the levels of positive emotions and cognitive evaluations that can be aggregated totally in the form of satisfaction experienced by an individual as a result of living in a family (9).

According to the studies, women and men satisfied with their family life, think less about separation and in their endeavor to achieve family goals, display a deep and more stable attachment to the family as a whole (10). A person who is satisfied with his/her family life usually spends further mental or physical force for the family and values familial goals more than those who have low levels of family satisfaction (11). This positive value, importance, or attitude towards the family can naturally decrease the levels of conflicts and problems in the familial life, thereby making relationships pleasant and fruitful in such an important system (12).

In this regard, parenting an autistic child can be very challenging. A variety of problems accompanied by ASD can seriously damage the psychological health of parents. In addition, the parents of an autistic child often experience increasing parenting stress and growing family dissatisfaction due to the constantly required care (13). According to the prevalence rate of ASD, one in every 68 children is affected by this disorder (14-16). Different therapeutic methods have been proposed for the mothers of children with autism based on the convincing evidence showing that parenting an autistic child can increase distress and mental problems.

Recently, developments in psychotherapeutic models and research on the positive aspects of human psychiatry have gained increasing attention (17). Positive changes should be made to the mothers of children with autism to deal with negative thoughts and emotions. Out of different therapies and training methods, positive psychotherapy is proposed to make positive changes (18). In fact, positive psychotherapy includes a positive psychotherapy model with four components called joy, commitment, meaning, and perfect life. Not only does positive psychotherapy mitigate negative symptoms, but it also reduces vulnerability effectively and directly through positive emotions and abilities of manner and meaning. In positive training, members learn how to be happier, more hopeful, more optimistic, more hardworking, and livelier; hence, they can both enjoy life and help others benefit from the greatest blessing (life) (19). Various studies have shed light on the effectiveness of positive psychology training in improving marital life, love styles, couple's happiness, marital intimacy and sexual satisfaction of female students, and marital satisfaction in women (20-22).

Furthermore, pivotal response treatment (PRT) is another type of intervention that can benefit parents. PRT is one of the intervention programs that follows behavioral and motivational principles. As a mild, yet efficient method, it is based on the principles of applied behavioral analysis (ABA) and assumes that disorders in children can be improved through the manipulation of the natural environment. One of the main components of this method is teaching parents as they are regarded to be the main implementors of the PRT model (23, 24). As studies have confirmed, the presence of parents is important since they are able to learn this therapeutic method better and faster and implement it in the natural environment of their homes. Studies have shown that parent training in PRT enhances a child's communication skills and has a positive impact on parent-child interactions. In this treatment, several behaviors are regarded as target behaviors, improving other behaviors (25, 26).

Given that mothers play a vital role in preserving the family's socio-psychological balance and deal with a variety of problems and issues, it is necessary to develop plans to resolve the problems they may face. Accordingly, this study sought to improve the family satisfaction of mothers of children with autism. Previous studies have investigated the effectiveness of each of these treatments, separately, in increasing family satisfaction and functioning of families with children with ASD (24, 27). However, no studies have been carried out to clear up which therapy is the most effective. Therefore, it is essential to compare different therapeutic methods to identify the most effective and proper intervention method. Accordingly, this study aimed to evaluate the effectiveness of positive psychotherapy and PRT in family satisfaction in mothers of children with ASD.

2. Methods

This was a quasi-experimental applied study with pretest-posttest control group design. The study population included all the mothers of children with autism who are members of the Autism Association

and Behesht School in Ahvaz, Iran in 2021. The sample comprised 45 participants (15 per group) selected through convenience sampling, who entered the study with respect to the research inclusion criteria. Afterwards, they were randomly assigned into two experimental groups and one control group. We included 15 mothers of children with autism in each group by use of G*power software and based on Khoshvaght and other colleagues (28) study (effect size=1.61, power=0.90, α=0.05). In the present study, for the random allocation of the participants in the groups (positive psychotherapy, PRT, and control groups), one number between 1-45 (1-15 for positive psychotherapy group, 16-30 for PRT group, 31-45 for the control group) was considered for each participant by researchers at the pre-test. The participants then selected a number from 1-45 randomly from a bag containing the numbers and each participant's group was determined. After collecting the pre-test/post-test data, they were analyzed through ANCOVA. The ethical principles observed in the present work were preserving the rights of the participants of the study and their rights as a human. Additionally, after the completion of the training sessions in the experimental group, intensive therapeutic sessions were held for the control group to observe the ethical principles. The inclusion criteria were providing an informed consent to participate in the study, minimum middle school education, age range between 24 and 50, getting a below-average score in the family satisfaction scale, having no family conflicts, not being divorced, no records of drug abuse, not participating in other therapeutic programs at the same time, and not receiving individual consultation or pharmacotherapy. The exclusion criteria consisted of receiving psychological therapies at the same time as the program, using psychotropic drugs, unwillingness to participate in or continue the study, facing a severe stressful situation, and being absent from more than two therapeutic sessions.

2.1. Research Instruments

Family Satisfaction Scale (FSS): The FSS was introduced by Olson in 1995 as a reliable and valid tool for family research and family therapy (29). In fact, family satisfaction denotes the degree to which family members feel happy and satisfied with each other. Scored on a five-point Likert scale (from 5 for "totally agree" to 1 for "totally disagree"), this 10-item questionnaire evaluates satisfaction through different aspects of family functions. The lower and upper bounds of the test were set to 10 and 50, respectively. The reliability of the Persian version of the scale with Cronbach's alpha coefficient was 0.92 (29). Mohtashami and other colleagues (30) reported that the content validity of the FSS was evaluated and confirmed by 12 experts of psychology. Moreover, the content validity ratio (CVR) and content validity index (CVI) were respectively reported to be 0.91 and 0.94. In this study, Cronbach's alpha coefficient was 0.87 for the FSS.

2.2. Intervention Programs

Positive Training Intervention: Positive training was implemented in 14 90-minute group sessions in accordance with the intervention program proposed by Seligman (18) for two sessions a week. Table 1 gives a brief account of the therapy sessions.

Pivotal Response Treatment (PRT): PRT training was conducted for 12 sessions, one 90-minute session per week, on the basis of four pivotal areas. These four pivotal areas include: A. Motivation, which comprises seven stages as follows: establishing learner attention (two stages), using shared control (two stages), using learner choice (six stages), varying tasks based on interests (three stages), identifying child's ability in different tasks (three stages), manner of using reinforcers (two stages), and types of reinforcers (two stages); B. Responsiveness to multiple cues, which consists of the following two stages: using various stimuli and increasing the cues and reinforcers (three stages), reinforcement schedule (two stages); C. Self-management (self-regulation), which includes the following five stages: defining the behavior (one stage), preparing for self-management (two stages), teaching self-management (three stages), creating independence (four stages), generalizing to other settings (one stage); D. Self-initiation, which consists the following four stages: teaching self-motivated social interactions (two stages), create and design questions (seven stages), teaching how to ask questions (3 stages), teaching communication skills using natural techniques (four stages). In addition, the mothers were taught to design games with peers. Each mother was asked to practice with her child at home at least 14 to 18 hours per week, taking into account the aforementioned items.

2.3. Statistical Analyses

Prior to analyzing the data pertinent to the hypotheses, the assumptions were examined to ensure that the data of the present paper could estimate the assumptions of the ANCOVA. In this regard, the normality of the data via the lack of significance of the Z in Kolmogorov–Smirnov Test demonstrated

Table 1: A summary of positive training sessions

Session	Description
1	Pre-test: Discussing the positive psychotherapy framework in groups
2	Introducing manner abilities: The participants determined their specific abilities from the positive background and discussed the situations helping these specific abilities in the past.
3	Discussing specific abilities and positive emotions
4	Good memories against bad memories: Reviewing good memories and forgetting bad memories
5	Forgiveness: Forgiveness was introduced as a powerful tool that converts negative emotions into neutral feelings and even positive feelings for some individuals.
6	Gratefulness (appreciation): Appreciation was discussed as durable thankfulness and good and bad memories were highlighted with an emphasis on appreciation.
7	Mid-term therapeutic analyses: The importance of positive emotions was discussed and the objectives of specific abilities were reviewed. The process and progress were discussed partially, and the feedback of the participants was reviewed about the benefits of the therapy.
8	Frugality: The importance of optimism in life and practicing frugality in life
9	Optimism and hope: The participants were instructed to think about the time when they fail an important task, when a large-scale program fails, and when one person declines it. The participants were then asked to consider what opportunities open up when one is sealed.
10	Positive relationships (love and attachment)
11	Meaning amplification (discussing the specific abilities of other family members)
12	The joy principle: Expressing the concept of life outlook and pictures drawn for a life with joy, commitment, and meaning
13	Finding a meaning (positive legacy and blessing of time)
14	Perfect life (integration of joy, commitment, and meaning), conclusion, post-test

that family satisfaction variable followed normal distribution (Z=0.12, P=0.140). Moreover, Levene's test was employed to assess the assumption of variance homogeneity (to check the equality of variances of experimental and control groups) (Z=1.25, P=0.298). The results suggested the establishment of the assumption of variance homogeneity, allowing the use of ANCOVA. The data were analyzed through one-way analysis of covariance (ANCOVA) in SPSS-27.

3. Results

The participants included 45 mothers of children with ASD, aged 36.29±5.74 years old. Table 2 represents the demographic characteristics of mothers. Table 3 shows the mean and standard deviation (SD) of the family satisfaction scores in the experimental and control groups during pre-test and post-test.

According to the results, the F-value in the one-way ANCOVA for the independent variable revealed that positive psychotherapy and PRT groups had a significant difference with the control group in family satisfaction (F=40.38, P<0.001). Thus, at least one of these interventions had a positive impact on the dependent variable.

Table 4 exhibits the results of the Bonferroni post-hoc test used to determine which intervention was effective and whether there were any significant differences among the interventions. According to Table 4, the difference between the mean score of family satisfaction in positive psychotherapy group and control group was 14.27. This indicated that positive psychotherapy was effective in increasing family satisfaction. Furthermore, the difference in the mean score of family satisfaction between PRT group and control group was 16.38. This also implied that PRT was effective on family satisfaction. In addition, the difference in the mean score of family satisfaction between positive psychotherapy and PRT groups was 2.11. Therefore, there were no significant differences between positive psychotherapy and PRT groups in increasing family satisfaction.

Table 2: Demographic characteristics of the mothers

Groups	Mean±SD age	Education	
		High school (n (%))	College education (n (%))
Positive Psychotherapy	35.62±6.28	11 (73.33)	4 (26.67)
PRT	36.74±5.67	12 (80.00)	3 (20.00)
Control	36.11±5.89	13 (86.67)	2 (13.33)
P	0.991	0.613	

PRT: Pivotal Response Treatment

Table 3: Mean±SD of family satisfaction in experimental and control groups in pre-test and post-test

Variable	Groups	Mean±SD		P
		Pre-test	Post-test	
Family satisfaction	Positive psychotherapy	20.20±2.33	33.66±6.98	<0.001
	PRT	20.80±3.25	36.26±6.57	<0.001
	Control	19.13±4.71	18.53±4.05	0.428

PRT: Pivotal Response Treatment

Table 4: Bonferroni post-hoc test for paired comparison of the family satisfaction in the post-test

Variable	Groups	Mean difference	SE	P
Family satisfaction	Positive psychotherapy-Control	14.27	1.96	<0.001
	PRT-Control	16.38	1.98	<0.001
	Positive psychotherapy-PRT	2.11	1.95	0.855

PRT: Pivotal Response Treatment; SE: Standard error

4. Discussion

The present study aimed to investigate the effectiveness of positive psychotherapy and pivotal response treatment (PRT) in family satisfaction in mothers of children with ASD. The findings suggested that both positive psychotherapy and PRT were effective in increasing family satisfaction in mothers of children with autism. In addition, the results illustrated that there were no significant differences in family satisfaction between the positive psychotherapy group and the PRT group in the post-test stage.

According to the first finding, positive psychotherapy was effective in increasing family satisfaction in mothers of children with autism. Given that, it can be argued that positive psychotherapy is beneficial in increasing family satisfaction, life satisfaction, and positive emotions in mothers of children with autism and this program can be used to improve their psychological health. Accordingly, seeking pleasure, commitment, and meaning in life can reinforce family satisfaction, happiness, and optimism. Positive thinking is not an objective or a one-dimensional concept and it is identified by its themes since family satisfaction, happiness, and optimism in each individual depends on the factors that are desirable and pleasing for that individual. People engaging in positive thinking make the most of their life and work, remain healthier, and communicate better with others (31). Such people look at life from a positive viewpoint and instead of regretting the past or lack of health, look at it with satisfaction and see the future with hopefulness and optimism, which grants them vivacity rather than doubt and skepticism.

As revealed by another finding, PRT was effective in increasing family satisfaction in mothers of children with autism. PRT-based training for parents enhances child's communication skills and has a positive impact on parent-child interactions. This finding signifies that in families with a disabled or exceptional child, family satisfaction is affected by factors, such as family cohesion, the manner of using coping strategies, generalizing parents' self-efficacy, and the sense of meaning in life. Previous studies have suggested that in case of enjoying a high sense of meaning of life, despite having a disabled child, parents take pleasure in the presence of their child and feel satisfied with their life (23, 24). Overall, based on the investigations, mothers with low stress who use fewer emotion-focused coping strategies and enjoy higher family cohesion and have a higher sense of the meaning of life have demonstrated higher family satisfaction.

According to the findings of the present study, there were no significant differences between the positive psychotherapy and PRT groups concerning family satisfaction. Overall, attending positive psychotherapy and PRT sessions enabled the mothers to find solutions to their various problems with the cooperation of the therapist and resolving these psychological problems increased mothers' family satisfaction. Family satisfaction refers to an individual's capability to resist and experience negative psychological states. Individuals with lower resilience describe distress as an unbearable structure. Considering this, interventions focused on parents are regarded as methods contributing to treatments with higher potential and lower costs. It is quite cost-effective since parents spend more time with children and can carry out the maximum one-on-one tasks at the minimum cost (32). In fact, training parents has great advantages. Primarily, parents, specifically mothers who have the most contact with their children, can have the most impact on changing their child's

behavior. Moreover, to provide a stable and permanent therapeutic environment, parents can target the aspects of a child's behavior and their participation in the treatment of children with autism facilitates generalizing the achievements of treatments. Subsequently, this opens up the possibility to receive assistance from other family members, which can also be effective.

Herein, the mothers receiving positive psychotherapy and PRT were able to improve their problem-solving skills and self-awareness, live a meaningful life, and increase the level of adjustment, hope, and resilience in themselves to experience less stress. Moreover, studies have suggested that individuals experiencing positive emotions display unusual, flexible, and creative patterns of thinking (33, 34). Positive emotions enhance an individual's inclination towards having various choices in life and create different behavioral options for them. Moreover, positive emotions contribute to a broader and more flexible cognitive structure in individuals and increase their ability in integrating expansive subjects. When people are relaxed and happy, their thoughts grow and expand and thus they become more creative and their imagination develops and positive emotions increase attention. Meanwhile, negative emotions predict negative states, such as anxiety, depression, failure, and poor and restricted attention (31). Therefore, it can be argued that mothers who receive positive psychotherapy and PRT are capable of improving their mood and increasing their positive emotions, therefore enjoying higher flexibility. They can display higher levels of adjustment in them and other members of their family, resulting in experiencing more family satisfaction. It appears that positive psychotherapy and PRT interventions could explain these effective factors considering the sense-making nature and components of group emotion, pleasure, and effectiveness when mothers are together.

Every research may have some limitations. Taking into account that this study was conducted on mothers of children with autism who were members of the Autism Association and Behesht School in Ahvaz, Iran, generalizing the results to other centers and cities should be carried out with caution. This study was performed only on mothers of children with autism and it was not possible to conduct the research on both parents. The purposive sampling and using self-report tools are among other limitations of the present study.

5. Conclusion

According to the results of the current, positive psychotherapy and PRT as therapeutic and training interventions provided mothers of children with autism with positive and optimistic psychological concepts about life and improved their hopefulness and resilience to life hardships, resulting in an increase in the level of their family satisfaction. Thus, it is recommended to employ these interventions together with other others to reduce the psychological burden on mothers taking care of children with autism.

Ethical Approval

In this study written informed consent was obtained from the participants. The Ethics Review Board of Islamic Azad University Ahvaz Branch, approved the present study with the following number: IR.IAU.AHVAZ.REC.1400.059.

Acknowledgement

This article is part of a PhD dissertation written by Mr. Mohammadmorad Khoshakhlagh in the Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran. The researchers wish to thank all the individuals who participated in the study.

Conflict of interests: None declared.

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