


ORIGINAL RESEARCH

The effectiveness of parent-based pivotal response treatment on social health and psychological well-being among mothers with autistic children

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Date Received: October, 2017 Date Accepted: November, 2017 Online Publication: December 28, 2017

Abstract

Introduction: Parents of children with autism are increasingly are considered as one of the primary source of intervention for their children, also there is an increasing demand for access to effective interventions for families who have children with autism. The aim of this study is to investigate the impact of parent-based pivotal response treatment (PRT) on social health (the amount of interaction a person has with their community) among mothers with autistic children.

Methods: The present study is a semi-experimental research and its design consists of pretest, posttest with control group and a sample of 40 mothers with autistic children referring to the educational and rehabilitation center of Tehran and Karaj from fall to winter of 2016., participants were selected in two groups of control (20 people) and tested (20 people). To measure the independent variables in the pretest, post-test questionnaires, Reef psychological well-being and the social health of Keyes and Shapiro (short form) were used. The experimental group was trained for PRT during three months. Ultimately, the collected data were analyzed applying SPSS software via paired t-test and independent t-test method.

Results: The results showed that there was significant increase in scales of social health and psychological well-being in both experimental group and control group; but the increment was significantly higher in experimental group ($P < 0.001$; $P < 0.023$ respectively).

Conclusion: According to benefits of parental intervention in treatment and importance of increasing therapy sessions for children with autism, it is recommended that this therapy method in conjunction with conventional methods is offered to parents of children with autism specially mothers.

Keywords: Pivotal response treatment (PRT), Social health, Psychological well-being, Autistic children

Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by impairments in social interaction, verbal and non-verbal communication, along with a restricted and repetitive activities and behaviors (1). A systematic review reported a prevalence rate of 17 per 10,000 people for the core syndrome (autistic disorder) and a rate of 62 per 10,000 people for all ASDs in USA (2). The prevalence of autism in Iran (6.26 per 10,000) is lower than some Western nations, however it is still in an increasing line (3). Autism is associated with burden and stress for parents (1). The number of children diagnosed with ASD has risen dramatically in recent years, forcing services to expand their treatment programs. The demands placed on parents caring for a child with autism contribute to a higher overall incidence of parental stress, depression, and anxiety and adversely affects family functioning and marital relationships compared with parents of children with other intellectual, developmental, or physical disabilities (4, 5). Mothers of children with autism are more likely to suffer from depression than mothers of children with intellectual disability (ID) without autism and mothers with typically developing children (6); however, they may also have a heritable vulnerability for depression (6, 7). Therefore, autism treatment studies should include measures of parental mental health and family functioning.

Parent training has long been regarded as an important component of early intervention programs for children with autism (8). There is empirical evidence that parent training contributes to the effectiveness of behavioral treatments (9) and, for example, enhances functional communication in young children with autism (4, 5) and may result in improved parent—child interactions after pivotal response training. Although most research has focused on child outcomes, there are several equivocal studies of the effect on parental adjustment of parent training programs for parents of children with autism (2, 7).

The potentially effective intervention based on a behavioral approach is known as PRT (10). The goal of pivotal response treatment (PRT) is to teach children (or adults) to respond to

the many learning opportunities and social interactions that occur in their natural environment and to increase their motivation to communicate (6, 7, 10). PRT focuses on core pivotal areas such as motivation, self-initiation, multiple cues and self-management, improvements of which are thought to result in widespread gains in untargeted areas, such as reduction of behavioral problems (10).

For example, Hardan et al. (2015) conducted a randomized controlled trial (RCT) to compare PRT in a group of parents of children aged 2–6 years ($n = 27$) with a parent in psychoeducation group ($n = 26$). Improvements were observed in frequency of utterances and adaptive communication skills, but not in autism symptoms on the Social Responsiveness Scale (SRS) (4). A 3-month follow-up study of the parent PRT group without the psychoeducation group showed retention of these gains, although it was unclear whether the parents provided PRT in this period (9). Another study provided a community-based early intervention study based on PRT (11). A group of 118 children (mean age = 49 months, $SD = 9.4$) was divided into three groups, being very low IQ <40 , moderately low IQ 40–69 and higher IQ >70 and followed a 1-year PRT program. No control group was used. Communication and adaptive behavior improved for all groups. Behavior problems (CBCL) only decreased in the high IQ group. There was no effect on parental stress. Notwithstanding the positive results of PRT with respect to increased self-initiation, collateral improvements in language and communication skills and improved affect and play skills for the majority of children with ASD, as well as reduced maladaptive behavior with some children with ASD (1, 12). This treatment also can be effective in increasing social health, cognitive, speech, language and behavioral skills in children whose parents are trained, and also increases the social health and psychological well-being of mothers participating in PRT method (3, 6). In light of the little controversial studies on autism the aim of this study was to investigate the impact of parent-based PRT on social health in mothers with autistic children.

Method

Sampling

The present study is a semi-experimental research and its design consists of pretest, posttest with control group. The statistical population has been composed of 40 mothers with autistic children referring to the educational and rehabilitation center of Tehran and Karaj from fall to winter of 2016 who were selected by randomical sampling, who were available in two groups of control (20 people) and tested (20 people). Participants were allowed to leave the study whenever they wish. To collect the research data, the following questionnaires were been used.

Inclusion criteria

- Age 30–55 years
- Gender - female
- Language – Persian
- Qualification - educated at least up to high school
- Mothers with autistic children with ASD levels of 75-95
- Consent and willingness to participate in this study

Exclusion criteria

- History of mental illness
- Unavailability in next 3 months
- Combination with other chronic disease

The proposal of study approved by the scientific committee of “Department of Psychology, Guilan University, Rasht, Iran” psychology department and all patients signed consent form to participate in the present study. Approval from Institutional Ethics Committee of educational and rehabilitation center of Tehran and Karaj were obtained in Iran also to carry out the research. The questionnaires are as follows:

- a) **Demographic characteristics questionnaire:** This questionnaire contains of the personal information such as gender, age, level of education, marital status and duration of diagnosis, type of disease and the subjects post history.

- b) **Psychological well-being (RSPWB-18) (Reef, 1989):** Psychological well-being (RSPWB-18) (a psychological well-being questionnaire with 18 questions created by Reef, 1989 and was then revised in 2002) (13). According to the collected data to confirm and emphasize internal consistency in the current study, Cronbach’s alpha for Reef questionnaire (RSPWB-18) was calculated to be 0.74.

- c) **Social health of Keyes questionnaire:** The Keyes questionnaire as one of the most commonly used questionnaires, measures social health in five domains: social integration, social acceptance, social contribution, social actualization and social coherence (14). The purpose of Keyes study was to substantiate and test a social model of well-being that reflects positive social health (14).

This project’s plan is an experimental one under the title of “A pre-and post-test’s plan with a control group”. Here, two groups of subjects are randomly selected and randomly assigned to two groups (control and experimental groups); both groups are measured by a pre-test before performing the independent variable on the experimental group and they are re-measured by a post-test after performing the independent variable (10, 15). PRT program was performed over the experimental group for two months (7 sessions of one and a half hours and once a week) and then this group was compared with the control group (The control group did not receive any training) (15), In this study the independent variable was PRT and social health and psychological well-being of mothers was dependent variables.

Statistical analysis

The SPSS 20 (Armonk, NY: IBM Corp) was used to analysis of data. For descriptive analysis mean, standard deviation (SD) used. The final data analysis was carried out using SPSS-19 (version 19; SPSS Inc., Chicago Illinois, USA). After confirming of normal distribution of the variables using by the

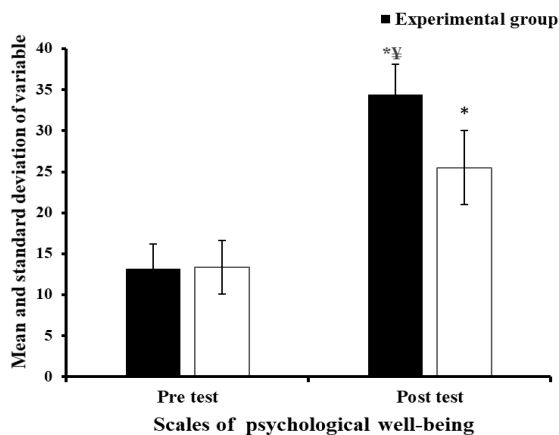
Kolmogorov- Smirnov (K-S) test, Paired t-test and independent t-test were used for data analysis. Data are presented as mean \pm SE. Significance for all analyses was set at $P < 0.05$.

Results

The results showed that 22.5 percent of mothers aged 30-37 years, 60 percent of mothers aged 38-46 years and 17.5 percent of mothers aged 47-54 years. Also, 32.5 percent of mothers were employees, 62.5 percent of mothers were housewife and 5 percent of mothers were self-employed.

According to the results presented in Figure 1, there was significant increase in scales of social health in both experimental group ($P < 0.001$) and control group ($P < 0.046$). But, social health in the experimental group had increased compared to that of the control group ($P < 0.001$).

The results showed that there was significant increase in scales of psychological well-being in both experimental group ($P < 0.001$) and control group ($P < 0.021$); but the increment



was significantly higher in experimental group ($P < 0.023$) (Figure 2).

Figure 2. The comparison mean \pm SD of scales of psychological well-being in experimental group and control group after intervention
***Significantly different in comparison pre and post-test within the groups; ¥ significantly different in comparison with pre and post-test between groups**

Discussion

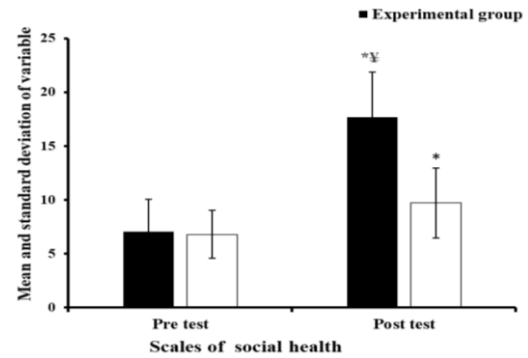


Figure 1. The comparison mean \pm SD of scales of social health in experimental group and control group after intervention
 *Significantly different in comparison pre and post-test within the groups; ¥ significantly different in comparison with pre and post-test between groups

The purpose of the present study was to examine the effectiveness of parent-based PRT on social health and psychological well-being in mothers with autistic children.

The results of this study suggested that an effective PRT has a significant effect on social health (Integration, acceptance, participation and compliance) in mothers with autistic children.

The results of the present study comply with those of studies conducted by Ferraioli et al (2013) who suggested moderate to large treatment benefits by lowering stress level in mothers with autistic children undergoing Parent Training Programs (16). Also, Steiner et al (2012) reported the effectiveness of parent education program which are associated with improved parent and child outcomes (17). Coolican et al., (2010) conducted a study in which they taught this method to parents waiting for delivering the therapeutic services for their child. Results showed that child's communicative skills, especially his or her speech performance, increased (18). It is possible that using PRT techniques results in widespread improvements in other aspects of functioning (6, 7). The theoretical model of PRT also purports lowering mother's stress

which then can increasing amount of positive affect or parent–child positive interaction.

Additionally this study showed that an effective PRT has a significant effect on psychological well-being (self-growth, autonomy, purposeful life and self-esteem) in mothers with autistic children.

The results of Grays et al study (2009) indicated parents who received more social support, had lower scores of depression, anxiety and anger (19). In another study Pottie (2008) reported an enhancement in daily well-being by coping responses and mitigate daily distress in parents of children with ASD after examining the direct and moderating effects of coping on daily psychological distress and well-being in parents of children with Autism (20).

Based on study results the most important effect of PRT for improving well-being in mothers with autistic children is the reduction of stress, anxiety and anger as well as increment in Self Confidence, Self-esteem and mental health that can also cause optimal effects on their children (21-23).

In general, the results of this study have shown that PRT can increase the severity and duration of social health and psychological well-being in mothers with autistic children. The findings of this research are indicative of the necessity of creating a connection between various branches of sciences to solve the problems that have various physical, psychological and social aspects. Such therapeutic methods make patients' lives more meaningful and improves the quality of their lives and also reduced the costs of rehabilitation and treatment. Further, these therapeutic methods can be used in rehabilitation clinics and psychological services centers in order to solve the psychological problems of patients suffering from chronic pains.

The limitation of the study include effects of PRT on both parents, low amount of available sample and failure to assess the impact of cultural and social factors. Therefore it is recommended that future studies may control and assess the limitations noted above.

Conflict of interests

Authors declare no conflict of interests.

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