

## Cognitive Coping Strategies and Emotional Distress in Mothers of Children with Autism Spectrum Disorder

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### Abstract

Mothers' emotional distress, when having a child with diagnosis of autism spectrum disorder (ASD), is different depending on depending on the thinking pattern (rational or irrational) and cognitive coping strategies used. The aim of this study was to assess irrational beliefs, negative automatic thoughts, emotional distress, cognitive coping strategies and the relation between them, in mothers of children with ASD. Data were collected from 65 mothers having a child with diagnosis of ASD. Several psychological instruments were used to assess the irrational beliefs (ABSs), automatic negative thoughts (ATQ), emotional distress (PAD) and cognitive coping strategies (CERQ). Mothers reported high levels of emotional distress, automatic negative thoughts and irrational beliefs. The cognitive coping strategies that correlated positively and statistically significant with emotional distress were self-blame, catastrophizing and rumination. Self-blame and catastrophizing strategies correlated positively and statistically significant with the irrational beliefs. The results also suggest that the use of maladaptive coping strategies correlates with a higher levels of irrational beliefs and emotional distress.

**Keywords:** Emotional Distress; Irrational Beliefs; Automatic Thoughts; Cognitive Coping; Autism Spectrum Disorder (ASD).

### Introduction

One of the topics studied extensively in pediatric psychiatry in the last few years is autism spectrum disorder (ASD). However, information regarding etiology and therapy are limited and contradictory. Therefore, ASD remains a chronic diagnosis, with a great impact on the individual, family and social level. Existing studies of families of children with ASD suggest that behavioral, social, and cognitive dimensions of the disorder are associated with increased levels of emotional distress [1], that can lead even to psychiatric disorders appearance (depression, anxiety) [2, 3]. The emotional distress level was previously correlated with the child clinical impairment severity or availability of external resources that parents can use (social support, marital status, economic status) and may be one of the strongest predictors of the success of early intervention programs [1, 4, 5]. Although there are some studies discussing the influence of the parental distress on their

children's performance, we found no studies that have taken into account the relationship between the emotional distress and the thinking pattern of the parents and their coping strategies.

One of the primary principles of cognitive behavioral interventions is that thoughts, feelings, and behaviors interact and significantly affect each other [6, 7]. Rational and irrational beliefs are ways of appraising or evaluating particular representations of reality in terms of their personal significance to a particular individual. The theory of Rational Emotive Behavior Therapy (REBT) posits that rigid, extreme, unrealistic, and illogical appraisals of our automatic interpretations give rise to emotional disturbances [8, 9]. REBT is focus on hot cognitions (appraisal cognitions) as primary causal cognitive mechanisms in the development of emotional reactions. These cognitions largely determine emotional, behavioral, cognitive and subjective consequences [10, 11, 12]. Within this framework emotions may be conceptualized as functional or dysfunctional; functionality or dysfunctionality of the emotional experience is determined by the intensity with which any particular emotion is experienced [8, 13, 14]. Evaluative cognitions can be of four distinct types: demandingness, awfulizing, low frustration tolerance and global evaluation. These four types of irrational beliefs cover various content areas (e.g., performance, comfort, affiliation) and can refer to ourselves, others or life in general [8, 15].

Attempts to identify and classify emotion regulation strategies resulted in the development of several paradigms [6, 16, 17]. Emotion regulation consists of a series of behaviors, skills and strategies, conscious or unconscious, automatic or deliberate, that modulate, inhibit, or enhance the expression and emotions expression [18]. The existing data support the link between difficulties in emotion regulation and depression [17, 19] or anxiety symptoms [20, 21, 22]. In relation with emotional distress, emotion regulation strategies were discussed in terms of adaptive (e.g., reassessment, acceptance) or maladaptive (e.g., suppression, rumination). Starting from the REBT model described above, we can consider that a pattern of irrational beliefs facilitates the maladaptive cognitive coping strategies use, which will translate at emotional level in increased level of negative dysfunctional emotions.

The aim of this study was to assess irrational beliefs (classified according to the REBT model), negative automatic thoughts, emotional distress and cognitive coping strategies in mothers of children with ASD. The secondary objective was to evaluate the relationship between cognitive coping strategies and irrational beliefs, respectively emotional distress. In our knowledge, no previous study assessed the emotional distress in mothers of children with ASD, from this perspective.

## **Material and Method**

The study was cross-sectional.

*Selection and Description of Participants.* Data were collected from 65 mothers who had a child with diagnosis of ASD. Mothers were recruited from the families with children diagnosed with ASD that were patients in Child and Adolescent Psychiatry Clinic from Cluj Napoca, Romania or followed a therapy program in various specialized centers in the country. Inclusion criteria: a. mother of a child diagnosed with ASD according to DSM IV-TR criteria; b. consent to participate in the study after they have been explained and they understood the purpose and clinical protocol. Exclusion criteria: mother with serious somatic or mental conditions; accident or major stressor in the last 6 months.

*Instruments.* Each mother filled in the questionnaires: Cognitive-Emotional Regulation Questionnaire (CERQ) - scale with 36 items assessing nine cognitive coping strategies: self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, blame others) [23], Profile of Affective Distress (PAD) - scale with 39 items assessing the subjective dimension of functional and dysfunctional negative emotions) [24], Automatic Thoughts Questionnaire (ATQ) - scale with 30 items that measure the frequency of negative automatic thoughts) [25] and Attitude and Belief Scale short version (ABSs) - is a global measure of adults irrationality; the irrational beliefs measured are demandingness, awfulizing, low frustration tolerance and self-downing/negative global evaluation) [26].

*Statistics.* Data were collected into a SPSS database (version 17). Univariate statistical analysis was

used to describe the studied population and the data from the questionnaires. Bivariate statistical analysis (Pearson correlation) was used to identify significant associations between data.

## Results

Demographics (age, marital status, education, occupation) were filled in by 65 mothers. The mothers mean age was 33.21 years (SD=5.58). Most mothers were married (N=55), with bachelor's or graduate degrees (N=61) and employed (N=58).

The participants from our study showed higher mean scores on emotional distress (M=54.49, SD=17.42) and dysfunctional negative emotions (M=23.95, SD=8.97) when compared with the norms for the general population described by the scale authors (Table 1).

**Table 1.** Means and standard deviations for PAD

	PAD depression dysfunctional emotions	PAD anxiety dysfunctional emotions	PAD total dysfunctional negative emotions	PAD emotional distress total score
<b>Mean</b>	12.90	11.04	23.95	54.49
<b>(SD)</b>	5.26	4.14	8.97	17.42

The mean scores obtained by the participants on ATQ showed high levels of negative automatic thoughts (M=31.24, SD=10.84). According to general population norms, this score means that the automatic thoughts level is higher than that of 69.1% of the general Romanian population. The irrational beliefs (classified according to the REBT model) measured by ABSs are demandingness, awfulizing, low frustration tolerance and self-downing/negative global evaluation. The results showed very high irrationality scores for the participants included in the study (M=11.36, SD=3.30) compared with the norms for the Romanian population (Table 2).

**Table 2.** Means and standard deviations for the ATQ and the ABSs

	ATQ	ABSs demandingness	ABSs awfulizing	ABSs low frustration tolerance	ABSs negative global evaluation	ABSs Irrationality total score
<b>Mean</b>	31.24	3.36	3.40	2.89	1.70	11.36
<b>(SD)</b>	10.84	1.25	1.19	1.20	1.01	3.30

Regarding the cognitive coping strategies used, the mothers of children with ASD had scores above average on catastrophizing (M=9.87, SD=4.10) and positive reassessment (M=14.72, SD=3.69), average scores for acceptance (M=13.41, SD=3.89), rumination (M=12.27, SD=3.8), refocus on planning (M=16.08, SD=3.05), putting into perspective (M=14.52, SD=3.57), scores below average on positive refocusing (M=10.53, SD=3.90) and self-blame (M=9.23, SD=3.34) and very low for blame others (M=4.10, SD=2.96).

We found a positive correlation between irrational and negative automatic thoughts and the level of emotional distress (varying from medium to high) (Table 3).

In terms of explanatory value, we can say that negative automatic thoughts explain between 27% ( $R^2=0.27$  for sadness/depression dysfunctional emotions) and 29% ( $R^2=0.29$  for dysfunctional negative emotions) of the emotional distress variance.

For irrational beliefs total score, we can say that a high level of irrationality associates with increased emotional distress. The determination coefficients obtained from the square of the correlation coefficients indicate that irrationality explains between 11% ( $R^2=0.11$  for sadness/depression dysfunctional emotions) and 17% ( $R^2=0.17$  for worry/anxiety dysfunctional emotions) of the emotional distress variance.

**Table 3.** Pearson correlation coefficients between PAD, ATQ and ABSs scores

PAD	ATQ	ABSs demandingness	ABSs awfulizing	ABSs low frustration tolerance	ABSs negative global evaluation	ABSs irrationality total score
depression dysfunctional emotions	0.52**	0.14	0.34**	0.23	0.25*	0.34**
anxiety dysfunctional emotions	0.51**	0.24*	0.32**	0.28*	0.36**	0.42**
dysfunctional negative emotions	0.54**	0.20	0.35**	0.26*	0.32*	0.40**
emotional distress total score	0.46**	0.22	0.31**	0.24	0.28*	0.37**

\* Correlation is significant at the 0.05 level (2-tailed); \*\* Correlation is significant at the 0.01 level (2-tailed).

The emotional distress total score reported by the participants correlated with the cognitive coping strategies: self-blame, rumination, catastrophizing and positive reappraisal. For the self-blame strategy we obtained the most intense positive correlation ( $r=0.41$ ), which indicates that frequent use of self-blame strategy associates with higher level of emotional distress, the relationship being of medium intensity. Identical results were obtained for the strategies catastrophizing, a mild positive correlation ( $r=0.38$ ) and rumination ( $r=0.30$ ). For positive reappraisal, we obtained a negative correlation ( $r=-0.26$ ) indicating that frequent use of this strategy associates with lower levels of emotional distress, the relationship being mild to moderate. Sadness/depression dysfunctional emotions correlated positively with the strategies self-blame ( $r=0.38$ ), catastrophizing ( $r=0.42$ ) and negatively with positive reappraisal ( $r=0.40$ ) (Table 5).

**Table 4.** Pearson correlation coefficients between CERQ cognitive coping strategies and PAD

CERQ	PAD depression dysfunctional emotions	PAD anxiety dysfunctional emotions	PAD total dysfunctional negative emotions	PAD emotional distress total score
Self-blame	0.38**	0.44**	0.43**	0.41**
Acceptance	-0.00	0.03	0.01	0.04
Rumination	0.20	0.30*	0.26*	0.30*
Positive refocusing	-0.23	-0.21	-0.23	-0.23
Refocus on planning	-0.20	-0.09	-0.16	-0.05
Positive reappraisal	-0.40**	-0.21	-0.33**	-0.26*
Putting into perspective	-0.20	-0.13	-0.18	-0.13
Catastrophizing	0.42**	0.36**	0.41**	0.38**
Other-blame	0.10	0.15	0.13	0.17

\* Correlation is significant at the 0.05 level (2-tailed); \*\* Correlation is significant at the 0.01 level (2-tailed).

Automatic negative thoughts and irrational beliefs correlated significantly and positively with the coping strategies self-blame and catastrophizing. For the self-blame ( $r=0.42$ ) and catastrophizing ( $r=0.39$ ) coping strategies, the intense positive correlation indicates that their frequent use associates with higher level of automatic negative thoughts, the relationship being of moderate intensity. For the strategies positive reappraisal ( $r=0.30$ ), positive refocusing ( $r=0.29$ ) and refocus on planning ( $r=0.25$ ), the negative correlations obtained suggest that the frequent use of these strategies associates with lower levels of automatic negative thoughts, the relationship being mild to moderate. The irrationality total score measured by ABSs positively correlated with the strategies self-blame ( $r=0.27$ ) and catastrophizing ( $r=0.42$ ). For the four irrational beliefs described by ABSs, positive statistically significant correlations were obtained for awfulizing ( $r=0.34$ , for

sadness/depression dysfunctional emotions;  $r=0.32$ , for worry/anxiety dysfunctional emotions;  $r=0.35$ , for dysfunctional negative emotions;  $r=0.31$  for emotional distress total score) and negative global evaluation ( $r=0.36$  for worry/anxiety dysfunctional emotions) (Table 6).

**Table 5.** Pearson correlation coefficients between CERQ cognitive coping strategies, ATQ and ABSs

CERQ	ATQ	ABSs irrationality total score
Self-blame	0.42**	0.27*
Acceptance	-0.07	0.01
Rumination	0.25*	0.17
Positive refocusing	-0.29*	0.08
Refocus on planning	-0.25*	0.00
Positive reappraisal	-0.30*	-0.12
Putting into perspective	-0.13	-0.00
Catastrophizing	0.39**	0.42**
Other-blame	0.19	0.22

\*Correlation is significant at the 0.05 level (2-tailed);

\*\*Correlation is significant at the 0.01 level (2-tailed).

## Discussion

In this study, we have measured emotional distress, sadness/depression and worry/anxiety dysfunctional negative emotions levels with a specific instrument. The results showed medium levels of emotional distress. Most studies have focused on parents of children with ASD aiming to identify the presence of a psychiatric disorder, usually depression or anxiety [2, 4, 27]. Daniels et al. reported in 2008 that parents of children with autism are more likely to be hospitalized for a mental disorder than those in the control group and that depression and personality disorders are more common in mothers than fathers [2]. Osborne et al. reported in 2008 that the level of parental stress, adversely affects the children performance (regarding both cognitive and behavioral progress) following different educational interventions [28]. In a study published in 2009, Lee et al. reported that physical, financial status and stress levels are the most important mental health predictors for parents of children with high-functioning autism and suggested that future research should investigate the potential stressors of these parents and services should include strategies to promote parents mental health, in addition to the therapies targeting specific problems associated with the child symptoms [29].

Our results support the existing findings and highlight the relationship between irrational beliefs, automatic negative thoughts and emotional distress. The results are consistent with REBT or CBT (Cognitive Behavioral Therapy) interventions theoretical models and support the importance of this approach type for the parents of children with ASD.

The cognitive coping strategies used by the mothers from our study more frequently than the mean values for the general population were catastrophizing and positive reappraisal. For the families of children with a mental disorder, psychological distress was associated with increased use of coping strategies considered maladaptive (e.g., emotions focused coping, avoidance) [30, 31]. Our results showed a positive correlation for emotional distress and self-blame, rumination and catastrophizing coping strategies and a negative one for positive reappraisal. Stuart and McGrew (2009) reported a negative effect of maladaptive coping strategies on the difficulty experienced by the parents of children with autism [32]. Similar results were described by Altieri and von Kluge in 2009; they found a greater use of adaptive coping mechanisms and social support in parents of children with ASD who had good family relationships than in those with family problems or separated [33]. However, these studies focused on coping in general, including in terms of behavior and were not limited to cognitive coping.

Therapeutic intervention possibilities in ASD are relatively limited and cognitive behavioral

approaches are among those with proven efficacy. Within the cognitive behavioral interventions parents are often co-therapists, actively involved in the therapy sessions with the therapist, but also at home by applying consistently the recommended techniques. These interventions often last several years. Consequently, their role in the interventions effectiveness is vital. For this reason we believe that information regarding parents' affective and cognitive status obtained before determining therapeutic targets for the children, and in the process, contribute to a more effective therapy. Although high levels of distress have been clearly demonstrated in this population [34], there are not enough studies to confirm the association with a particular pattern of irrational beliefs and cognitive coping strategies. These mechanisms have been already highlighted in studies regarding patients with various somatic (e.g., cancer patients) or psychiatric (e.g., depression, anxiety) disorders, but were not replicated in their family members [14, 35].

## **Conclusions**

The emotional distress scores reported by the mothers of children with ASD correlated with their automatic negative thoughts and irrational beliefs. Automatic negative thoughts and irrational beliefs were positively correlated with self-blame and catastrophizing strategies and negatively with positive reappraisal, positive refocusing and refocus on planning strategies. The results suggest that the use of maladaptive coping strategies correlates with higher levels of irrational beliefs and emotional distress.

## **Study Limits**

The study is cross-sectional and the correlation nature of the results does not allow a causal relationship deduction. An important limit is represented by the relatively small sample size. We used self report psychometric instruments and in this circumstance, the reporting accuracy might be affected and can lead to data bias.

## **List of abbreviations**

**ASD** - autism spectrum disorder; **REBT** - Rational Emotional Behavioral Therapy; **DSM IV-TR** - Diagnostic and Statistical Manual of Mental Disorders IV – Text Revised; **CERQ** - Cognitive-Emotional Regulation Questionnaire; **PAD** - Profile of Affective Distress; **ATQ** - Automatic Thoughts Questionnaire; **ABSs** - Attitude and Belief Scale short version; **CBT** – Cognitive Behavioral Therapy.

## **Ethical Issues**

The study was carried according to the law concerning the conduct of clinical trials, including abidance by international ethical standards foreseen in the Helsinki Declaration of Human Rights, updated. Being a non interventional, cross-sectional study, the risks were minimal.

## **Conflict of Interest**

The authors declare that they have no conflict of interest.

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