

The relationship between Cognitive Distortions, Hopelessness, and Depression in Parents of Children diagnosed with Autism Spectrum Disorder in Albania

Eleana Naci* and Marsha Koletsi**

*University of Bolton, UK

**New York College, Department of Psychology, Athens, Greece

Introduction:

The present study examines the relationship between cognitive distortions, levels of depression and hopelessness in parents of children diagnosed with Autism Spectrum Disorders in Albania. Robust research evidence links CD with depression and this relationship is also evident in these parents as consistently they report higher levels of depression. Parents also hold negative beliefs and may feel hopeless about the future. Hopelessness is a distorted pessimistic view about the future and may be considered a cognitive distortion being linked to depression.

Method

This is a prospective survey following a correlational research design. The mediating role of cognitive distortions between hopelessness and depression was investigated in a sample of 50 mothers and 28 fathers of children diagnosed with Autism Spectrum Disorders in Albania. It was hypothesized that specific CD, e.g., overgeneralization, are better predictors of depression than others.

Results

A linear positive relationship was found between the three variables, Hopelessness is a fundamental parental condition, as mean scores indicated mild to severe levels for 62.9 % of the sample, while 62.8% scored at minimal levels for depression. The hypothesis about the mediating role of cognitive distortions was not supported; however, this result should be interpreted with caution, due to research limitations.

Conclusions

Labelling and Overgeneralization were found to be the best predictors of depression levels in this population. The study also makes an important point regarding stigma associated to an ASD diagnosis and highlights the need for future research studies about the impact this stigma might have in the development and maintenance of depression.

Keywords: Cognitive distortions, Autism Spectrum Disorder, Hopelessness, Depression, Parents, Autism stigma, Albania

Introduction

Cognitive structures that are formed during childhood as the result of negative experiences, called “schemas”, are critical aspects in the development, maintenance, and recurrence of depression [1]. Schemas lead to negative ways of information processing and because they can also be activated from the same content stimuli, they may give rise to information processed in distorted ways, or to distorted ways of thinking. Cognitive distortions are relatively unstable “systematic errors in the depressed individual’s information processing, which reflect the activity of dysfunctional cognitive schemas” [2]. Kendall and Dobson view cognitive distortions as “active, but dysfunctional thinking processes”; that is “thoughts that are biased, contain logical errors, and are not well supported by evidence” [3]. Cognitive distortions are thought to cause and maintain depression [1].

Robust research evidence links cognitive distortions with depression [4,5]. Recent studies indicate that depressed patients present higher levels of cognitive distortions than the non-depressed control groups [6,7]. The relationship between cognitive distortions and depression is also evident in parents of children diagnosed with Autism Spectrum Disorder, a population that consistently reports higher levels of psychological distress [8]. Autism is a neurodevelopmental disorder, which is characterised by impairments in communication, social interaction, and existence of stereotyped behaviour, and narrow interests [9]. Autism requires a lifelong dedication from the caregivers of the diagnosed individual, including continuous therapeutic interventions as well as financial and social support. All these factors may cause overburden for parents, including high levels of stress, depression and anxiety symptoms, feeling of hopelessness, and reduced sense of self-efficacy [10].

Research evidence also links this population with high levels of depression [11,12]. Parents of ASD children hold negative beliefs and may feel hopeless about the future. Hopelessness is a distorted pessimistic view about the future [13]. Thus, hopelessness may be considered a cognitive distortion and is linked to depression. Hopelessness is the third component of the cognitive triad of depression. Re-

search shows that it can predict depression in the general population [14]. Alford and his colleagues examined the relationship between depressive symptoms as well as cognitive vulnerability and cognitive content specificity which found that hopelessness can predict depression even over life stressors [15].

However, factors that are predictors of and influence parental depression, stress, and anxiety are actually not clearly understood. In a systematic literature review of 28 studies in South East Asia, factors related to parental stress and resilience were found to be: social support, severity of child autism, financial difficulties, parental perceptions of autism, and worries about future, and religious beliefs [16]. Several studies, described below, have examined the relationship between cognitive distortions, depression and hopelessness. Kennedy has examined the relationship between CDs, parental stress, and child psychopathology [8]. In studying depression, it is important to examine the role of stress and life stressors, since depression and stress are often co-occurring conditions [17]. The study of Benson found that parental stress seemed to have mediator significance between CDs and child psychopathology [17]. The study also concluded that CDs may play a significant role in predicting parental stress levels. Depressive symptoms were found to be positively correlated with CDs, thus supporting Beck’s theory on emotional disorders.

All the above-mentioned studies demonstrate that there is a relationship between cognitive distortions, hopelessness and depression levels. It is important to further examine this relationship when it comes to particular groups of interest such as parents of children who are diagnosed with ASD, a group that is prone to experience higher levels of depression and stress than parents of children without a diagnosed disability.

The present study aims to examine the relationship between cognitive distortions, depression levels, and hopelessness in a group of parents of children diagnosed with ASD in Albania. The study attempts to contribute to the existing literature by shedding light on the relationship between CDs, depression and hopelessness, since current

research on the topic presents contradictory findings on the specific nature of this relationship. Poor mental health makes it difficult for parents to deal with the care their children need. Results from the study on the factors influencing depression in parents may be useful in planning adequate interventions and providing support. The study is novel since it attempts to study depression, cognitive distortions and hopelessness in parents of children with ASD diagnosis - a group that has not been studied before in this context. Furthermore, this study is the very first of its nature in the Albanian context.

Research design

The current study is a prospective quantitative study that uses questionnaires as the method of data collection. The study follows a correlational research design as it aims to explore the relationship between three variables: cognitive distortions, hopelessness, and depression. The study also explores the role of cognitive distortions as mediators in the relationship between hopelessness (independent variable) and depression (dependent variable). Participants of the study completed three self-reported questionnaires as well as a detailed questionnaire regarding their socio-demographic information, which was designed especially for the purpose of this study.

Participants

Participants of this study were selected via non-probability purposive sampling. They were selected by convenience, purpose, and volunteering, due to the specific nature of the population of interest. Initially, 94 parents of children receiving therapy in The Regional Centre for Autism in Tirana, and parents who visit the centre for evaluation or re-evaluation purposes were included in the study. The criterion for inclusion in the study was having one or more children with a diagnosis in the Autism Spectrum, including Pervasive Developmental Disorder-Not otherwise Specified, and Asperger Syndrome, according to DSM 5 diagnostic criteria (APA, 2013). Sixteen participants were excluded from the

analysis, as their children had a diagnosis other than in the Autism Spectrum (e.g., Developmental delay, externalising problems, etc). Parents of children with a comorbid condition were not excluded from the study. The data were collected during a time period of 3 months, after the consent was given by the institution where data were collected. The final sample consisted of 78 participants, 28 of whom were male (35.9% of the sample) and 50 were female (64.1% of the sample).

Measures

The demographic questionnaire apart from standard socio-demographic characteristics of parents and children also contained questions about financial support, perception of child's disorder severity, language spoken at home, existence of mental disorder, use of medication, and use of psychotherapeutic services. Parents also gave information about the child's gender, age, diagnosis, existence of comorbid diagnoses, use of medication, age of the child at the time of diagnosis, child's verbal ability and spoken language, birth order and existence of other children in home, type of received therapy (speech therapy, ABA, occupational therapy), years of therapy, and the time when therapy started.

The Cognitive Distortions Scale [18] is a 20-item questionnaire that is used in the adult population to measure the degree to which individuals use 10 specific cognitive distortions. The questionnaire includes two subscales that measure cognitive distortions in two domains: social/interpersonal and personal /achievement. The Interpersonal subscale measures cognitions related to social situations like being with a friend, partner, or family, while the Personal subscale measures cognitions related to achievement situations like passing an exam or failing at work. The total score is calculated via the sum of each subscale, with higher scores indicating higher degree of cognitive distortions' use.

The Beck Hopelessness Scale [19] was used to measure negative attitudes and expectancies (pessimism) for the near or long-range future. Each of 20 statements included in the scale is scored as either 1 or 0. Nine of the statements

are scored False and 11 True and indicate pessimism about the future. The total score of the scale ranges from 0 to 20, with higher scores indicating higher levels of hopelessness. Scores of 0 to 3 indicate hopelessness within the minimal range, 4 to 8 in the mild range, 9 to 14 in the moderate range, and scores of 15 to 20 are considered as severe levels of hopelessness.

The Beck Depression Inventory-II [20] is a 21-item self-report instrument that measures severity of depression in adults and adolescents of 13 years old and older. Items are rated on a 4-point scale ranging from 0 to 3. The total score of depression is calculated via the sum of all 21 items, resulting in a minimal score of 0 and a maximum total score of 63. Total scores of 0 to 13 indicate minimal depression, 14 to 19 indicate depression in the mild range, 20 to 28 indicate moderate range, and 29 to 63 indicate severe range of depression.

Ethics

This research study was reviewed and received approval from the Research Ethics Committee of Bolton University. The researcher also sent an information letter to the Albanian Children Foundation (ACF), containing information about the research project, its methodology, aims, procedure, and the scientific and clinical importance of this study. The ACF granted permission to recruit parents of children receiving therapy in the Regional Centre for Autism (RCA) in Tirana, and also from any other institutions RCA collaborates with. Participants were informed about the research study via an information sheet, which explained in detail ethical issues, anonymity, confidentiality, and the right to withdraw at any moment from the process. They signed a consent form, stating that they are aware of the study process and understand all its aspects and steps taken. In any questionnaire used, participants were provided with a four-digit code for anonymity reasons. All the materials used for the purpose of the study and the collected data were stored in a safe and locked place. Materials in electronic format were password protected. The materials used for the purpose of the study were destroyed after 2 years from its start.

Procedure

Prior to data collection the study was piloted. All participants were approached individually and invited to participate in the study. The administration of the questionnaires occurred during the time the child had ABA therapy, in a separate room used for parental meetings. The participants read the information sheet, signed the consent form and then proceeded with completing the questionnaires. The process took approximately 20 minutes. Upon completion of the questionnaires, the parent received a debriefing form (Appendix F), was asked to provide an email address to be informed about the results of the study and was thanked for her participation. For the process of data collection, the same procedure described above was replicated with parents frequenting the RCA in Tirana and two other centres in the cities of Elbasan and Gjirokastra. The parents' overall responses to participation were positive. Participants who scored at severe levels for depression and hopelessness were referred to the resident psychiatrist of the RCA for further support.

Data analyses

The collected data were recorded and analysed via the SPSS 24.0 program. Univariate, bivariate and multivariate analyses as well as descriptive and inferential statistics (i.e., means, standard deviations, Pearson Product Moment Correlation Coefficients, Independent-Samples T-test and linear multiple regression) were used to answer the research questions.

Results

Several key themes were found regarding the relationship between cognitive distortions, depression and hopelessness in parents of children with autism, including:

Majority of participants scored at the minimal level of the BDI while at the same time a majority of them scored at the mild and severe level on the BHS.

There is a positive linear relationship between CDs, depression and hopelessness.

Cognitive Distortions do not mediate the positive relationship between hopelessness and depression.

Cognitive distortions of the Interpersonal domain do not mediate the positive relationship between hopelessness and depression.

Cognitive distortions of the Achievement domain do not mediate the positive relationship between hopelessness and depression.

Overgeneralization can better predict depression than other types of cognitive distortions.

Participants' scores on the BDI, BHS and CDS

The scores of participants on the BDI and BHS are presented in Figure 1 below. 62.8 % of the respondents reported scoring at the minimal level of BDI, and only 5.1% of the respondents reported scores in the severe level. Regarding the level of Hopelessness, 62.9 % of respondents reported scores ranging from mild to severe levels. Scores of the BHS were more evenly distributed than the BDI scores. (Figure 1)

Linear relationship between CDs, hopelessness, and depression.

Pearson correlation coefficients were computed to assess the relationships between cognitive distortions and depression levels; hopelessness levels and depression levels; and cognitive distortions and hopelessness levels. A significantly positive correlation was found between the CDs and BDI scores ($r = 0.35, P = 0.002 < 0.05$). CDS scores are significantly positively related to BHS scores ($r = 0.232, p = 0.041 < 0.05$)

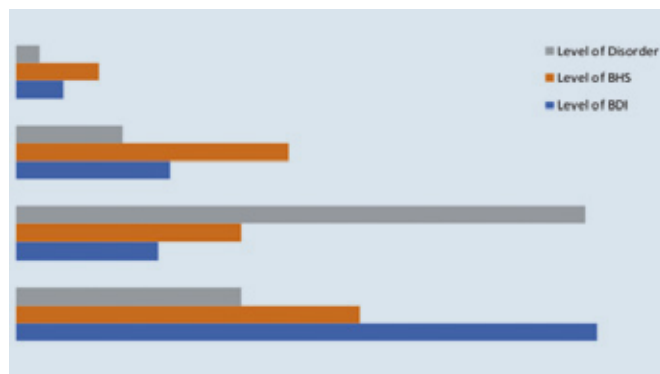


Figure 1-Participants' scores

Also, BDI scores is significantly positively correlated to BHS scores ($r = 0.579, p < 0.001$). Items 2 and 9 of Pessimism and Suicidal thoughts in the BDI are excluded from these correlations, as they overlap with Hopelessness. Tables 1 below presents the results of the correlational analyses.

Table 1- Pearson Correlation analysis (N=78).

	1	2
CD	1	
BDI	,350**	1
BDI	1	
BHS	,579**	1
CD	1	
BHS	,237**	1

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

Cognitive Distortions mediate the positive relationship between hopelessness and depression

In order to calculate the direct and indirect effect of variable mediation, Model 4 in the PROCESS macro of Hayes in 2018 [21] was used. Bootstrapping are not incorporated in software package. So, in order to analyze all theorized hypotheses regarding mediated effects in SPSS, this study made use of the PROCESS Macro Model developed by Hayes and Preacher in 2010 [22]. This resulted in simple mediation, using the 4-th model of this model.

The dependent variable Y is depression as measured by BDI scores and independent variable X is hopelessness as measured by BHS scores. The mediator variable M is cognitive distortions as measured by CDS scores. A multiple regression analysis was conducted to assess each component of the proposed mediation model. In the total effect model, CDS and BHS score are both statistically significant predictors of BDI scores ($p < 0.05$). Figure 2 displays the mediating model of hopelessness, cognitive distortions, and depression.

The bootstrapping indicates that cognitive distortions are

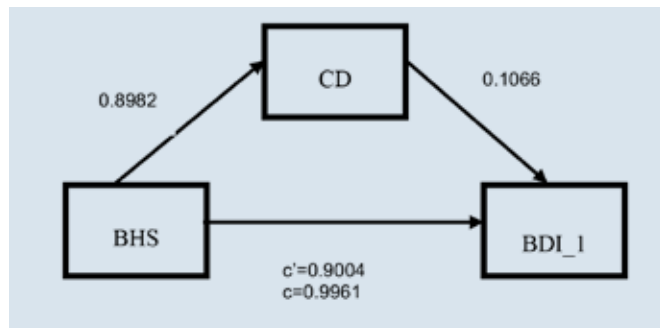


Figure 2- Mediator Effect of CD

not a significant mediator between the hopelessness and depression. Percentile bootstrap contains zero (-0.0048, 0.2484), consequently the mediation is considered not to be present. It can be concluded that cognitive distortions do not have an indirect effect on depression scores in relationship with hopelessness.

Cognitive distortions of the Interpersonal domain mediate the positive relationship between hopelessness and depression

Further analyses were conducted to assess whether the cognitive distortions of the Interpersonal domain would be a mediator between hopelessness and depression. The mediation analysis shows that cognitive distortions of the interpersonal scale scores are not a significant mediator between the BDI and BHS scores. As zero is present in the confidence intervals, the results show no evidence of conditional indirect effect which is different from zero with 95% confidence interval. In order to test the association between BHS and BDI, moderated by cognitive distortion interpersonal scale in more detail, the model generated bias corrected 95% bootstrap confidence intervals for the indirect effects using 5,000 bootstrap samples. Percentile bootstrap contains zero, consequently the mediation is considered not to be present.

As the confidence intervals surrounding the indirect effect of stress did span zero ($\beta = 0, 1047, 95\% \text{ CI}:-0.0012, 0.2591$), no significant indirect effect was found. It can be concluded that the cognitive distortions of the interpersonal scale do not have an indirect effect on the relationship between BDI and BHS.

Cognitive distortions of the Achievement domain mediate the positive relationship between hopelessness and depression

To test whether CDs in the achievement scale would mediate the relationship between multiple BHS and BDI, the PROCESS macro for SPSS was run. In order to test the association between BHH and BDI, moderated by cognitive distortions of the achievement scale in more detail, the model generated bias corrected 95% bootstrap confidence intervals for the indirect effects using 5,000 bootstrap samples.

Notably, the confidence intervals surrounding the indirect effect of stress did span zero, and no significant indirect effect was found at low levels of stress ($\beta = 0, 0708, 95\% \text{ Conf. Interval}:-0.0144 \text{ to } 0.2019$). Results of the study show that cognitive distortions of the achievement scale are not a significant mediator between the BDI and BHS.

Overgeneralization can better predict depression than other types of cognitive distortions.

Previous analysis indicated that there is a significant correlation between cognitive distortions and depression levels, which leads to further investigation of the role of specific cognitive distortions in relation to depression levels. Firstly, the correlation between the cognitive distortions in the two domains (measured by CDS) and depression levels (measured by BDI scores) was assessed. Table 2 presents a correlation matrix of BDI scores and scores on the Interpersonal and Achievement subscales of the CDS. The matrix shows that variable BDI, Interpersonal and Achievement, are independently correlated with each other at the significant 0.01 level.

Table 2- Pearson Correlation of BDI and total of Interpersonal and personal scores.

BDI	1	2	3
Interpersonal	1		
Achievement	,369**	1	
	,300**	,837**	1

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

Further analyses looked at the relationship between the specific cognitive distortions measured by the Interpersonal

subscale of the CDS and depression levels measured by the BDI scores. The correlational matrix on Table 3 shows that the cognitive distortions of Catastrophizing, Labeling and Overgeneralization are the only variables that are independently correlated with depression at the significant 0.01 level. That means that when the use of catastrophizing, labeling and overgeneralization increases, so does depression severity.

Discussion

The results of the study indicate that cognitive distortions are positively correlated with both hopelessness and depression, and hopelessness is positively correlated to depression. These findings support similar prior conclusions in the existing literature [3,5,23,24] and also confirm the research hypothesis. The linear positive relationship between cognitive distortions, hopelessness and depression support Beck's cognitive model of depression.

The study found that both cognitive distortions and hopelessness predict depression. However, hopelessness has a stronger predictor effect than cognitive distortions ($r=.579$ vs. $r=.350$). This effect can probably be explained via the characteristics of the population of interest since parents of children with ASD diagnosis are prone to experience higher levels of hopelessness due to the burden of this lifelong and incurable diagnosis. These findings do not support prior research such as that of Deal and Williams [25] that CDs are stronger predictors for depression and support the research of Lipinski [26] with the adolescent sample. These findings could also be interpreted as supporting the argument that cognitive distortions may not always presenting a distorted thinking, but actually a realistic thinking [27].

On the other hand, taking into consideration that hopelessness is the third aspect of the cognitive model of depression [1] and it is by itself a distorted pessimistic view, this study emphasizes the importance of cognitive distortions in clinical practice. Treating cognitive distortions in depressed patients, with high hopelessness levels, or those with suicidal risk, may be a first step for intervention in parents of children diagnosed in the Autism Spectrum.

The majority of parents in this study (62.8%) experienced only minimal levels of depression, however, a majority of them (62.9%) experienced levels of hopelessness ranging from mild to severe, supporting Benson's study [28] results that not all parents of children who suffer from a disability struggle with their mental health and experience depression. Factors underlying these processes are yet not clearly understood and need to be further explored in the future [16].

It seems that hopelessness characterizes this population, thus raising vigilance for the clinical importance of this finding, since hopelessness is considered a risk factor for suicide [29]. Research findings stay at the same line with the results from the study of Miranda and Mennin [30] as fortune telling in their sample was positively correlated with severity of depression. Fortune telling may represent an aspect of hopelessness, representing a pessimistic cognitive distortion [25]. In addition, in the study of Beevers and Miller [31] perfectionism was found to be a contributor to the prediction of suicide, and hopelessness was mediating this relationship, emphasizing again the importance of hopelessness in this population.

The results of this study indicate that cognitive distortions do not mediate the relationship between hopelessness and depression. However, this result should be interpreted with caution as it may be due to the small sample size. This hypothesis should be tested in larger samples in order for the results to be more reliable.

The results of the study also show that some specific cognitive distortions, such as labeling, overgeneralization, mental filter and catastrophizing are better predictors of depression than other types of cognitive distortions. These results fall in line with previous studies, such as that of Wenzlaff and Grozier [32] where results indicated that patients diagnosed with Major Depressive Disorder used higher distorted levels of overgeneralization. It is also important to emphasize the role of the use of the cognitive distortion of labeling by parents of children with ASD. The use of this distortion and its effects on depression may illustrate the existence of stigma toward individuals in the Autism Spectrum and their parents. This finding is especially important when it comes

to identifying and implementing interventions at both the personal and community levels regarding this topic. Papadopoulos and his extensive research in this field [33] has emphasized the effects of Autism stigma and the role of culture and ethnicity, including here also other factors as service provision, religion, attitude toward mental health, collectivism vs. individualism, and so on. Further research in exploring the role of stigma in this population in Albania is crucial in better understanding and helping these individuals.

Many researchers have stressed the importance of the impact stigma has on increased feelings of self-blame, reduced self-efficacy and motivation, and an overall poorer psychological well-being in this specific population [34,35,36,37]. In addition, a recent study in China of Tinga, Yitingb, and Chunlibl [38] with 263 parents of children with ASD reported that self-stigma was positively correlated with severity of depression, and also was a partial mediator among self-esteem, feelings of shame, family adaptability and depression. A recent systematic review about autism stigma and caregiver informal mental conditions [39], emphasized the significance of stigma and reported that this relationship is very meaningful and also complex. Researchers have started to formulate a new framework for intervention in this group especially in the field of Cognitive Behavioural Therapy, while focusing on that direction. It seems that tackling the cognitive distortion of labeling in parents of children diagnosed with Autism Spectrum Disorder, could be a first step in dealing with autism stigma.

Limitations

Limitations of this study include the relatively small sample size that consisted more of mothers of children with ASD than fathers. Thus, in generalizing the results of this study, these limitations should be taken into consideration. In addition, a considerable amount of the participants had been exposed with some of the questionnaires (BDI-II, BHS) in prior occasions, and the answers may not reflect their reality. Furthermore, their children receive treatment in an NGO,

where there exists a department for family counseling and some of the parents have participated in different educational and therapeutic training, offered by the institution. Also, social desirability effects and the existence of perceived stigma may have also influenced the results.

Suggestions for future research

This study attempted to examine the relationship between cognitive distortions, depression levels, and hopelessness in a group of parents of children diagnosed with ASD and receiving treatment in Albania, and to contribute to the existing literature on this relationship. The results of the study indicated the importance that these factors have in terms of well-being of the parents of children diagnosed in the Autism Spectrum. It is suggested that in order to understand the mechanism underlying this relationship and to examine further the role that cognitive distortions play in the existence of parental depression, future research studies with larger samples would lead to more generalizable data. In addition, hopelessness seemed to be a core aspect characterizing this population, highlighting the importance for further investigation into that direction. Furthermore, since the focus of this study was not to explore gender differences, future research might give more evidence related to these aspects. Also, an important point made by this study was the aspect of the existence of a probable autism stigma of Albanian parents, and the finding that cognitive distortions like labeling, or overgeneralization may have given rise to the development of the perceived self-stigma, which by itself is correlated with higher levels of depression in this population. Further research studies are suggested to examine the relationship between cognitive distortions, autism stigma, and depression levels, and how these factors are linked within Albanian culture, ethnicity, social and family support, and service provision.

Conflict of interest statement:

We declare that we have no conflict of interest.

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