Interpersonal and Social Functioning Among Psychotherapy Patients

The Indirect Effect of Childhood Adversity

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Abstract: This study examined the mediating role of pathogenic beliefs on the relationship between patients' recollections of experienced adverse parenting in childhood and adult interpersonal and social problems. A total of 210 psychotherapy outpatients rated their experiences of perceived adverse parenting in childhood and completed measures of psychological distress, interpersonal problems and social impairment, and internalized beliefs about self and others. Significant mediation effects were observed for two of the three belief domains: "cannot rely on others" and "undeserving." Although both were significant mediators between adverse parenting and symptom distress, only "cannot rely on others" was a significant mediator predicting interpersonal problems, and only "undeserving" was a significant mediator predicting impaired social functioning. Thus, patients' underlying convictions regarding their self-worth seem to play a role in the ability to develop social roles, whereas the beliefs about the steadfastness of others play an important role in the capacity for interpersonal relating.

Key Words: Pathogenic belief, childhood trauma, psychotherapy, mediation, interpersonal problems

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Most patients not only experience subjective discomfort related to their symptom distress but also have interpersonal and social/work-related problems (Lambert et al., 2004). Their way of being in the world is often affected by interpersonal problems such as dissatisfaction with close relationships, feeling lonely, conflict with others, or marriage and family difficulties. These relational difficulties often also extend into their social behaviors with others in the larger society, reflected by conflicts at work, overwork, stress at school, or impairments in work or student roles (Lambert et al., 2004).

Many studies have shown that adverse childhood experiences predict symptom distress in adults and that this relationship is mediated by cognitive factors (*e.g.*, for reviews, see Aafjes-van Doorn et al., 2020; Alloy et al. 2006). However, little is known about the role of these cognitive mediators on the prediction of interpersonal and social/work problems.

Childhood adversity is a known risk factor for interpersonal problems (Messman-Moore and Coates, 2007) and social maladjustment (Kaye-Tzadok and Davidson-Arad, 2017) and has been shown to have an indirect effect through the internalization of beliefs about self and others that manifest in later interpersonal relationships (Huh et al., 2017).

Several developmental theories highlight the importance of beliefs, schemas, or internal working models to explain how adverse experiences lead to psychopathology (*e.g.*, Bowlby, 1988; Young, 1994). For example, the diathesis-stress model (Monroe and Cummins, 2015) suggests that people have, to different degrees, vulnerabilities or predispositions for developing psychopathology. A particular diathesis for common psychopathology symptoms, such as depression and anxiety, that is often discussed in the literature is cognitive vulnerability (Beck et al., 1979; Young, 1994). Similarly, the development of negative cognitive styles after childhood trauma is thought to increase individuals' vulnerability to developing hopelessness and depression (Rose and Abramson, 1992). Young, who integrated the work of Beck et al. (1979) and Bowlby (1988), proposed that specific early maladaptive schemas develop during childhood via interpersonal interactions and form a template that guides the interpretation of later experiences. These cognitive vulnerability models of development of psychopathology are evident in concepts like "core beliefs" in cognitive-behavioral therapy (Beck), "schemas" in schema therapy (Young), and "internalized working models" in attachment theory (Bowlby).

Prominent conceptualizations of cognitive vulnerability thus support the assumption that pathogenic beliefs inform how people actually behave in their intimate and peer relationships and in their work lives (*e.g.*, control-mastery theory; Curtis and Silberschatz, 2005) in internal working models (attachment theory; Bowlby, 1988). These emotion-laden convictions about self and others by which people interpret, recall, and organize negative childhood experiences are important paths that connect their negative childhood experiences to later problems and impairment in vocational and work domains (Ingram, 2003).

Empirically, a recent systematic review on cognitive mediators between adverse experiences in childhood and psychopathology in adulthood highlighted the wide range of different types of pathologies (including anxiety, depression, eating disorders, and posttraumatic stress disorders) for which cognitive vulnerability is an important developmental mediator (Aafjes-van Doorn et al., 2020). Other recent research studies have, for example, shown how interpersonal guilt and negative beliefs about self-worth (self-hate) affect well-being, self-esteem regulation, and the development of anxiety and depression, with and without the mediation of rumination and worry (Leonardi et al., 2020).

Pathogenic beliefs, as conceptualized by the control mastery theory (a theory of how psychopathology develops and how psychotherapy works; Silberschatz, 2005; Weiss, 1993), provide a complementary perspective on cognitive vulnerabilities in three ways. First, in contrast to these beforementioned cognitive beliefs that highlight the patients' error in thinking, control mastery proposed that these pathogenic beliefs are not necessarily false. According to the control mastery theory, early adverse experiences are internalized as pathogenic beliefs that may be conscious or unconscious but are always affect-laden, painful convictions about self and others that cause severe emotional distress and obstruct an individual's goals in life (Neelapaijit et al., 2017). For example, if a person was neglected as a child and raised by parents who repeatedly left the house for days on end without prior notice, this person may develop a conscious or unconscious conviction that they cannot rely on others. When someone deeply believes that others are unreliable, that person might subsequently find him- or herself in neglectful situations or interpersonal relationships (Cloitre et al., 2009; Weiss, 1993). Second, other

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self-report belief measures (for a review, see Bridges and Harnish, 2010) are tied to specific theories of psychopathology or diagnostic models, whereas pathogenic beliefs represent transdiagnostic internalized beliefs that people actually expressed in therapy (*i.e.*, were clinically derived) and assesses cognitions related to common psychopathology symptoms and diagnoses. As such, this transdiagnostic perspective of psychopathology fits with the research domain criteria recently proposed by the National Institute of Mental Health. Such a perspective is also useful to clinicians who typically focus on the expressed complaints of a particular patient and identify specific cognitions, problems, or symptoms as the target of treatment (Silberschatz and Aafjes-van Doorn, 2017). Third, unlike other irrational beliefs, negative automatic thoughts, or core beliefs that have been operationized by theorists and researchers, pathogenic beliefs are clinically derived (*i.e.*, patients' beliefs that were actually expressed in therapy) and relevant beyond a particular theoretical or therapeutic model.

The present study was developed to examine the relationship between patients' recollections of the parenting that they received in their childhood and current interpersonal and social functioning. Building on previous research regarding the mediating role of pathogenic beliefs on the relationship between childhood trauma and symptom distress (Silberschatz and Aafjes-van Doorn, 2017), indirect effects were hypothesized for perceived adverse parenting on interpersonal and social problems through pathogenic beliefs. In line with previous research (Aafjes-van Doorn et al., 2021b) that identified three different domains of pathogenic beliefs ("cannot rely on others," "undeserving," and "interpersonal guilt"), we sought to examine these three domains in parallel mediation analyses. By simultaneously holding constant each of these domains, such analyses would allow for the identification of specific types of pathogenic beliefs that confer difficulties in interpersonal behavior and work and social performance.

METHODS

Participants and Procedure

Participants were 210 consecutively admitted patients at a low-fee outpatient clinic, who were asked to complete measures as part of standard clinic intake procedures. The clinic provides psychotherapy services for individuals with a range of psychological difficulties, including depression, anxiety, and interpersonal problems. Comprehensive case formulations, rather than diagnoses, are used to guide patients' treatment. The data were collected in 2013–2015, in accordance with principles outlined in the Declaration of Helsinki and the American Psychological Association standard ethical guidelines. The study was approved by the local Institutional Review Board (022008). Clinic patients were informed that their participation in the study was voluntary and that they would not be compensated. They were asked for their written consent at their initial clinic visit and received a standard battery of paper-and-pencil assessment measures.

Assessment

The Measure of Parental Style (MOPS; Parker et al., 1997) is a measure of adult recollections of parental behaviors and attitudes during the individual's childhood. The MOPS has been used as a broad-brush measure of the likelihood of experienced dysfunctional parenting, allowing the level of any perceived adverse parenting to be simply quantified (Alloy et al., 2006). The 15 items of the MOPS consist of statements (*e.g.*, "verbally abusive," "ignored me," and "overprotective of me") about their mother's (maternal form) or father's (paternal form) parental behaviors during their first 16 years of life. Each statement is scored on a 4-point Likert-scale, and higher summed MOPS scores indicate more perceived adverse parenting experiences (Parker et al., 1997). The MOPS has been validated in clinical samples, relating perceived adverse parenting with anxiety and depression psychopathology (*e.g.*, Parker et al., 1997; Parvez and Irshad, 2013). The MOPS demonstrated good internal consistency in the present sample, with a coefficient of 0.89 for both the maternal and paternal total scores. In line with previous research on the MOPS (*e.g.*, Valiente et al., 2014), a composite variable was created by averaging the total maternal and total paternal MOPS scores to provide an overall representation of perceived adverse parenting experiences.

The Outcome Questionnaire (OQ-45; Lambert et al., 1996) is a widely used self-report assessment of overall psychological distress in psychotherapy outcome research. The OQ-45 consists of 45 items on a 5-point Likert (never to almost always) scale, divided into three subscales: symptom distress, interpersonal relations (*i.e.*, interpersonal problems), and social role (*i.e.*, social impairment) (de Jong et al., 2007). Higher scores on these subscales indicate higher levels of distress. The present study demonstrated good internal consistency on the symptom distress scale ($\alpha = .88$), the interpersonal relations scale (Cronbach's $\alpha = .79$), and the social role scale ($\alpha = .66$).

Pathogenic beliefs were assessed using the Pathogenic Beliefs Scale–Short Form (PBS-SF; Aafjes-van Doorn et al., 2021b), a 34-item brief version of the original 59-item inventory of self-reported pathogenic beliefs (PBS; Silberschatz and Aafjes-van Doorn, 2017). The PBS-SF is a validated measure of internalized, constricting beliefs. The items were originally derived from clinical case formulations of psychotherapy patients. Higher scores reflect higher levels of pathogenic beliefs, with mean scores ranging from 0 to 4. In previous research, the PBS scores were shown to be reliable ($\alpha = 0.96$) and valid (Silberschatz and Aafjes-van Doorn, 2017) in American community samples and a sample of outpatients (Aafjes-van Doorn et al., 2021a); the PBS has also been validated in patients with depressive disorder in Thailand (Neelapaijit et al., 2017, 2018). The 34-item PBS has been shown to have good psychometric properties, including sufficient reliability and concurrent validity (PBS-SF; Aafjes-van Doorn et al., 2021b), and in the present sample demonstrated good internal consistency.

A recent exploratory factor analysis (Aafjes-van Doorn et al., 2021b) suggests that the 34-item PBS can be divided into three subscales based on the underlying beliefs that one cannot rely on others, that one is undeserving, and that one has a sense of interpersonal guilt. The factor "cannot rely on others" includes beliefs about others not being able or willing to meet our needs and reflects a subsequent negative view of self. Items include, for example, "His/her desire for emotional support and nurturance will not be met by others." The factor "undeserving" reflects beliefs that one deserves mistreatment and punishment. Example items include "S/he deserved parental neglect/inattentiveness." The factor "interpersonal guilt" describes beliefs about what you should or should not do in relation to family and friends to be accepted and is assessed with items including "S/he must remain excessively involved with parents or loved ones." These three subscales are meant to offer a useful way to categorize transdiagnostic internalized beliefs that are relevant to common psychopathology symptoms. The subscales on the PBS-34 may thus help delineate and elucidate patients' pathogenic beliefs that are relevant to the psychotherapy process. The Cronbach's alphas for the respective subscales in our study were as follows: cannot rely on others, $\alpha = .91$; undeserving, $\alpha = .87$; and interpersonal guilt, $\alpha = .80$. More detailed information and a copy of the PBS-34 can be obtained from the authors.

Approach to Analyses

Analyses were undertaken using SPSS 25 including the PROCESS macro 3.0 (Hayes, 2018). Descriptive statistics were used to characterize the sample, and preliminary analyses were used to evaluate age and sex as potential confounding variables. Zero-order correlations were conducted between the study variables. Regression analyses were used to evaluate mediation models in which overall adverse parenting was the independent variable (*X*), PBS subscales were

TABLE 1. Descriptive Statistics and Zero-Order Correlations for Primary Study Variables ($N = 120$)

	Mean (SD)	1	2	3	4	5	6
1. Dysfunctional parental style	11.26 (8.48)	—					
2. PBS cannot rely on others	2.33 (1.34)	0.39**	—				
3. PBS undeserving	0.97 (1.10)	0.32**	0.75**	—			
4. PBS separation guilt	1.85 (1.27)	0.18**	0.65**	0.55**	—		
5. Symptom distress	40.75 (14.41)	0.25**	0.58**	0.54**	0.35**	—	
6. Interpersonal problems	17.53 (6.76)	0.20**	0.52**	0.45**	0.27**	0.55**	—
7. Social role impairment	12.75 (4.65)	0.17*	0.41**	0.43**	0.22**	0.67**	0.52**

*$p < 0.05$.
**$p < 0.01$.

parallel mediators ($M_{1–3}$), and each OQ-45 subscale served as a separate dependent variable (Y). Bootstrap 99% confidence intervals (CIs), sampled 10,000 times, were used to conservatively estimate the indirect effect of adverse parenting through each pathogenic belief—while holding the other two pathogenic beliefs constant. Bootstrap CIs are robust against violations of nonnormality in the products of path coefficients in regression-based mediation analyses (Hayes, 2017). The absence of zero in the CI would indicate a statistically significant indirect effect, signifying mediation.

RESULTS

Participant Characteristics and Preliminary Analyses

Before the main analyses, collected data were examined for data entry errors, completeness, and missing values. Missing data did not seem to pose any threat to statistical validity (Cohen et al., 1983), and no participant was removed due to a suspicious responding pattern.

Most of the 210 participants, 58.1% ($n = 122$), were women, with an average age of 34 ± 10.8 years. Most, 66.7% ($n = 140$), identified as White, 11.9% ($n = 25$) identified as Asian, and 5.7% ($n = 12$) identified as Hispanic. Most, 80.5% ($n = 169$), identified as heterosexual. Most patients, 76.1% ($n = 160$), had completed a university degree. Regarding relationship status, 36.2% ($n = 76$) were single, 12.9% ($n = 27$) were married, 6.2% ($n = 13$) were separated or divorced, and 40.4% ($n = 85$) indicated committed nonmarital relationships.

Evaluation of age and sex as potential confounding variables revealed no significant associations with any of the study variables. Hence, these variables were not included as covariates in subsequent analyses. Descriptive statistics and zero-order correlations for the study variables are presented in Table 1. Significant associations were observed among all study variables in expected directions.

Mediation Models

Results of mediation analyses are presented in Table 2. In the model predicting symptom distress, indirect effects of adverse parenting were observed through two of the three pathogenic belief subscales: "cannot rely on others" and "undeserving"; standardized point estimates for indirect effects were 0.17 (99% CI, 0.06–0.30) and 0.08 (99% CI, 0.02–0.18), respectively. Thus, for a 1 SD unit increase in perceived dysfunctional parenting, severity of symptom distress was

TABLE 2. Unstandardized Coefficients for Parallel Mediation Models Regarding the Indirect Effects of Adverse Parenting on Symptom Distress, Interpersonal Problems, and Social Role Impairment Through Pathogenic Beliefs

	Model 1		Model 2		Model 3	
	DV: Symptom Distress		DV: Interpersonal Problems		DV: Social Role Impairment	
	Coeff.	*t*	Coeff.	*t*	Coeff.	*t*
IV: Dysfunctional parental style						
To cannot rely on others	0.06	6.10**	0.06	6.10**	0.06	6.10**
To undeserving	0.04	4.88**	0.04	4.88**	0.04	4.88**
To interpersonal guilt	0.03	2.62**	0.03	2.62**	0.03	2.62**
Mediators						
Cannot rely on others to DV	4.70	4.57**	2.54	5.00**	0.91	2.47*
Undeserving to DV	3.34	3.03**	1.05	1.93	1.29	3.25**
Interpersonal guilt to DV	−0.87	−1.03	−0.81	−1.96	−0.43	−1.41
Total effect	0.42	3.64**	0.16	2.97**	0.09	2.50*
Direct effect (controlling for mediators)	0.01	0.10	−0.02	−0.34	−0.01	−0.12
Indirect effects		99% CI		99% CI		99% CI
Through cannot rely on others	0.29	0.10 to 0.54	0.16	0.06 to 0.29	0.06	−0.01 to 0.13
Through undeserving	0.14	0.03 to 0.31	0.04	−0.01 to 0.12	0.05	0.01 to 0.12
Through interpersonal guilt	−0.02	−0.11 to 0.05	−0.02	−0.08 to 0.01	−0.01	−0.04 to 0.01

*$p < 0.05$.
**$p < 0.01$.
Coeff. indicates coefficient; DV, dependent variable; IV, independent variable.

increased by 0.17 SD units through the mediating effect of believing others to be fundamentally unreliable, and by 0.08 SD units through the mediating effect of seeing oneself as fundamentally undeserving. A pairwise contrast test comparing the relative size of effects of these two mediators, however, was nonsignificant. The "interpersonal guilt" pathogenic belief subscale was not found to be a significant mediator between dysfunctional parenting and adult symptom distress.

With regard to interpersonal problems, a significant indirect effect was found for perceived adverse parenting uniquely through the "cannot rely on others" pathogenic belief subscale. The size of this effect, signified by a standardized point estimate of 0.20 (99% CI, 0.08–0.35), indicated that for a 1 SD unit increase in dysfunctional parenting, a 0.20 SD unit increase in interpersonal problems would be ensured through the mediating effect of believing others to be unreliable. The "interpersonal guilt" pathogenic belief subscale was not a significant mediator.

For the model predicting social role impairment, a significant indirect effect—indicating mediation—was found only through the "undeserving" pathogenic belief subscale, with a standardized point estimate of 0.10 (99% CI, 0.01–0.22). Thus, a 1 SD unit increase in dysfunctional parenting corresponded to a 0.10 SD unit increase in social role impairment through the mediating effect of believing the self to be essentially undeserving. The "interpersonal guilt" pathogenic belief subscale was not a significant mediator.

DISCUSSION

This study examined the way in which patients perceive and develop meaning about adverse parental behaviors and how this influences subsequent interpersonal and social/work-related problems. We hypothesized that pathogenic beliefs would mediate the relationship between patients' recollections of experienced adverse parenting in childhood and adult interpersonal and social problems along with symptom distress.

As was expected, our results confirmed previous cognitive mediation studies (*e.g.*, Aafjes-van Doorn et al., 2020; Alloy et al., 2006) in that the effect of perceived adverse parenting experiences on symptom distress was mediated by pathogenic beliefs, specifically a diminished sense of being able to rely on others and a fundamental sense of being undeserving. With regard to the prediction of interpersonal dysfunction, the domain of "cannot rely on others" pathogenic beliefs mediated the effect of perceived adverse parenting. For social role impairment, the domain of "undeserving" pathogenic beliefs mediated the effect of perceived adverse parenting.

Given that internalized "cannot rely on others" beliefs reflect a sense of feeling unsupported and perpetually threatened with abandonment and loneliness, which can easily lead to maladaptive relationships, it is perhaps unsurprising that these pathogenic beliefs about others would be related to interpersonal problems (Huh et al., 2017). In addition, the domain of "undeserving" pathogenic beliefs, which encompasses beliefs about deserving punishment and not deserving to be taken seriously, might guide the choices people make and ways they act. They might, for example, be reluctant to attain social status in that they prevent themselves from having better opportunities or play it safe for fear of being found out, or they might avoid social events with peers and colleagues. If one holds these types of beliefs about the self, it may then become difficult to socially adjust to work or school environments.

The current mediation findings are consistent with prominent theories of cognitive vulnerability for interpersonal and social difficulties and support the assumption that interpersonal and social/work-related problems often stem from early adverse experiences that are internalized as pathogenic beliefs (*e.g.*, control mastery theory; Curtis and Silberschatz, 2005). Moreover, these results are also consistent with previous findings regarding experiences of negative childhood experiences that predict later psychological distress through maladaptive cognitive processes (see Alloy et al. 2006 for a review). This consistency of results implies that the internalization of these early adverse parenting experiences is a universal process and provides support for developmental models that argue for continuity in the mechanisms underlying problems across clinical affective states (*e.g.*, Lilienfeld and Marino, 1995).

It is important to examine what leads people who have experienced adverse childhood experiences to develop interpersonal and social problems (Leighton et al., 2017), and how they might be able to benefit from supportive and enriching experiences, such as those offered by the therapeutic environment (*e.g.*, Jensen et al., 2018). Improvement in close relationships and social functioning at work and school are commonly reported psychotherapy treatment goals (Kealy et al., 2019) and have shown to be significant for evaluating patients' psychotherapy outcome (Umphress et al., 1997).

It is likely that interpersonal and social dysfunction, and the beliefs about being able to rely on others and undeservedness are akin to therapeutic relationships that could help modify these beliefs as a pathway to improving relationships. Patients who experienced abuse and neglect, for example, may act in ways that test others' unreliability and their own self-worth (Silberschatz, 2005). Therapists' responses to these posed tests in therapy may carry particular weight in helping patients develop more adaptive relationships/relational styles and vocational/work functioning, respectively—that is, addressing the beliefs most strongly mediating their interpersonal and social functioning.

Furthermore, the fact that the domain of "interpersonal guilt" pathogenic beliefs was not found to be a significant mediator between adverse parenting experiences and symptoms, interpersonal or social problems possibly suggests that guilt-laden beliefs about outgrowing ones' parents (*i.e.*, that others will be hurt should one pursue separate goals) may be more unconscious than the other two factors. Although self-reported interpersonal guilt and psychopathology have been shown to be associated (*e.g.*, Leonardi et al., 2020), our study suggests that these interpersonal guilt beliefs did not mediate the relationship between childhood adversity and interpersonal problems. In addition, our nonsignificant finding for this subscale might highlight the importance of a clinician-rated measure of interpersonal guilt to complement previously used self-report rating scales of interpersonal guilt (Gazzillo et al., 2018; Faccini et al., 2020). Notably, the interpersonal guilt scales developed by Gazzillo and Faccini and colleagues include multiple aspects of interpersonal guilt (*e.g.*, survivor guilt, separation guilt, burdening guilt, and self-hate). It is possible that their subscale on self-hate overlaps with the PBS construct of being "undeserving" and that pathogenic beliefs about "cannot rely on others" are reflected in their subscale on burdening guilt.

Moreover, other self-report measures of pathogenic beliefs, such as the Irrational Beliefs Inventory (Koopmans et al., 1994), and other similar measures (for a review, see Bridges and Harnish, 2010) are tied to specific theories of psychopathology or diagnostic models. The nomothetic PBS is different in that it measures transdiagnostic internalized beliefs that people actually expressed in therapy (*i.e.*, they were clinically derived) without allegiance to specific therapy models and theories. Further research comparing the PBS subscales with other comparable and conceptually distinct self-reported measures could further clarify its convergent and discriminant validity and establish its nomological network.

That said, it is also important to acknowledge the interrelatedness of the pathogenic beliefs. For example, if one has the belief that one is undeserving of love/support, one might also have the belief that others are unreliable. In other words, for some people (but not all), one belief may be a corollary of the other. As reported in this study, the use of parallel mediation modeling allowed for the statistical examination of the role of each type while holding the other constant. Our results suggested that it may indeed be clinically relevant to examine the pathogenic belief subscales separately, because these pathogenic beliefs are each linked

with different types of problems. The three types of pathogenic beliefs may offer a useful way to categorize transdiagnostic internalized beliefs that are relevant to common psychopathology symptoms and could help delineate and elucidate patients' pathogenic beliefs that are relevant to the psychotherapy process.

Limitations

Several limitations can be identified. First, although cross-sectional data may be useful for modeling a hypothesized causal sequence, data collected at a single time point cannot demonstrate causality, which is an important limitation of the present study. Second, although the reported sample of largely young, Caucasian, educated females is consistent with outpatient therapy samples, replication in more diverse groups of patients who experienced adverse childhood experiences would increase generalizability of the findings. Third, the study was also limited by the exclusive use of self-report assessment. Although retrospective recollections of adversity are likely quite accurate (see Brewin et al., 1993 for a review), children identified prospectively as having experienced maltreatment may have different risk pathways to mental illness than adults retrospectively reporting childhood maltreatment (Baldwin et al., 2019). In such studies on psychopathology development, longitudinal research designs would be ideal. Future replication of this study could also include measures that capture a broader range of adverse experiences, such as sexual abuse.

Lastly, although the factor structure of the OQ-45 has been a source of debate and equivocal findings (*e.g.*, Mueller et al., 1998), recent research using a sophisticated confirmatory factor analysis approach confirmed the original three-factor structure with retention of all items for each subscale (Tabet et al., 2020). Nevertheless, future research should consider additional measures of the dependent variables examined in the present study using assessments designed to capture specific aspects of interpersonal dysfunction and social impairment.

CONCLUSION

Pathogenic beliefs guide the choices people make and ways they act, which leads to the kind of dissatisfaction picked up by the OQ-45 (Lambert et al., 1996). Although the pathogenic belief domains of "cannot rely on others" and "undeserving" were both significant mediators between adverse parenting and symptom distress, only the domain of "cannot rely on others" was a significant mediator predicting interpersonal problems, and only "undeserving" was a significant mediator predicting impaired social functioning. Thus, the patients' beliefs about the steadfastness of others seem to play an important role in the capacity for interpersonal relating, whereas their underlying convictions regarding their self-worth seem to play a role in the ability to develop social roles. Future research could examine if patients who endorse pathogenic beliefs about the unreliability of others require longer, more intensive treatments to disconfirm the belief that others are unreliable.

DISCLOSURE

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was obtained from all patients for being included in the study. Informed consent was obtained from all individual participants included in the study.

The authors declare no conflict of interest.

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