

Parent Beliefs about Treatment Credibility and Effectiveness: Assessment and Relation to Subsequent Treatment Participation

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Published online: 25 August 2006
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Abstract We assessed parents' beliefs about treatment credibility and effectiveness and examined the influence of these beliefs on subsequent treatment participation. Seventy-six parents completed the Credibility/Expectancies Questionnaire—Parent Version (CEQ-P), and subsequently participated in treatment for their child's clinically referred conduct problems. The key findings were that: (a) the CEQ-P is composed of two components that measure parents' treatment credibility and expectancies; (b) the total scale and each component are internally consistent and have strong test-retest reliability; (c) scores on the CEQ-P are significantly associated with scores on a measure of parent motivation for treatment, supporting the construct validity of this measure; and (d) scores on the CEQ-P at the first clinic visit significantly predict subsequent adherence to treatment procedures above and beyond demographic variables and parent motivation for treatment. This study provides an efficient and psychometrically sound measure of parent beliefs about treatment and demonstrates the importance of such beliefs for subsequent treatment adherence.

Keywords Credibility · Expectancies · Motivation · Treatment participation · Child therapy

Treatment credibility refers to an individual's evaluation of how believable, convincing, and logical a given treatment is, while *treatment expectancies* refer to the improvements that a client believes will be achieved through the use of a certain treatment (Kazdin, 1979). These related but distinct constructs have proven to be of great importance in treatments of all kinds, as they have significantly predicted clinical change in a wide range of studies (Borkovec & Costello, 1993; Chambless, Tran, & Glass, 1997; Devilly & Borkovec, 2000; Dew & Bickman, 2005; Goossens et al., 2005). Indeed, it has been suggested that much of the change observed in psychosocial treatments can be largely explained by these constructs (see Frank & Frank, 1991; Kazdin & Wilcoxon, 1976; Kirsch, 1990). Despite

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the significance of these constructs, they are often not evaluated in adult treatments and have been virtually ignored in research on the treatment of child and adolescent behavior problems.

It also is unclear how treatment credibility and expectancies are related to change. They may impact therapeutic change directly through mechanisms previously referred to as the ‘placebo effect’ (e.g., Harrington, 1997; Stewart-Williams, 2004; Stewart-Williams & Podd, 2004). According to such models individuals’ beliefs about change can lead to actual physical and psychological changes in the absence of any other intervention. A separate mechanism through which treatment beliefs can influence clinical change is by increasing treatment participation. That is, individuals who believe a treatment is credible and likely to lead to change may be more likely to attend sessions and adhere more closely and consistently to the treatment protocol, and this increased participation could lead to greater therapeutic changes. This study evaluates the relation between treatment credibility and expectancies and treatment adherence hypothesized in the latter model.

In the treatment of child behavior problems, *parent* beliefs about treatment may be especially important in determining treatment participation given that parents typically are responsible for initiating treatment, providing consent and payment, and managing treatment attendance. Moreover, parents often are asked to be active participants in treatment (Kazdin, Bass, Ayers, & Rodgers, 1990). It is possible that parents’ beliefs about treatment influence the extent to which they subsequently attend and adhere to treatment (see Nock & Ferriter, 2005).

The first goal of the current study was to evaluate a brief, easily administered measure of parent beliefs about treatment credibility and expectancies. These constructs have been examined in only a few previous studies and it is likely that they are evaluated even less frequently in clinical practice. Indeed, the gaps that exist between the research laboratory and clinic for child treatment methods (e.g., Weisz, Donenberg, Han, & Weiss, 1995) also seem to apply to assessment methods. Psychometric measures are not used with great frequency outside of research settings, perhaps because the time required for administration and scoring of commonly used measures often exceeds the resources clinicians are able to devote to such practices. We have examined parent beliefs about child therapy using the 25-item Parent Expectancies for Therapy Scale in our prior work (Nock & Kazdin, 2001). In an effort to provide researchers and clinicians with a *brief* measure of parent beliefs about credibility and expectancies that could be easily incorporated in research and practice settings we evaluated a parent version of the Credibility/Expectancy Questionnaire (CEQ; Borkovec & Nau, 1972; Devilly & Borkovec, 2000), a six-item measure of treatment credibility and expectancies previously used in adult treatment studies. We modified the wording of each item to be appropriate for use with parents who have a child currently in treatment and evaluated the factor structure, internal consistency, and test-retest reliability of this new measure—the Credibility/Expectancy Questionnaire—Parent Version (CEQ-P).

The second goal of this study was to examine the relation between child, parent, and family factors and parents’ report of treatment credibility and expectancies. Previous studies have reported that families characterized by socioeconomic disadvantage and ethnic minority status believe therapy is less credible than do other families (Kazdin, Stolar, & Marciano, 1995; Novick, Benson, & Rembar, 1981; Sue & Zane, 1987). We examined the relations between these and other child, parent, and family characteristics with parents’ report of treatment credibility and expectancies.

The third goal of this study was to examine the construct validity of the CEQ-P. If the CEQ-P is a valid measure of parent credibility and expectancies, scores on this measure should be significantly associated with scores on measures of related constructs, such as

parent motivation for treatment, as parents who think treatment is credible and likely to lead to change are expected to be more motivated for treatment.

Our fourth and final goal was to evaluate the predictive validity of the CEQ-P by testing the relation between parent treatment credibility and expectancies on parents' subsequent adherence to treatment procedures. Our prior work has shown that parents' report of treatment credibility and expectancies is associated with perceived barriers to treatment participation and with treatment attendance (Nock & Kazdin, 2001). In the current study, we sought to extend this work by examining how treatment credibility and expectancies corresponded to parents' adherence to treatment recommendations. We expected that higher levels of treatment credibility and expectancies would be associated with greater adherence to treatment and attendance at treatment sessions. The results of such analyses can provide important information for the identification of families at risk for non-adherence and thus has important implications for both researchers and clinicians treating child behavior problems. Indeed, parent non-adherence is an enormous problem that can undermine even the most effective of treatments, as treatments are unlikely to be useful if parents do not adhere to them (see Allen & Warzack, 2000).

We evaluated the study hypotheses in the context of parent management training (PMT) for the treatment of child conduct problems. Child conduct problems are the most frequent reason for referral to mental health services (Kazdin, 2003), are among the most severe of childhood psychological disorders in terms of child impairment across multiple domains of functioning (Lambert, Wahler, Andrade, & Bickman, 2001), and are often associated with significant family dysfunction and impairment (Nock & Kazdin, 2002). In addition, PMT, which is among the most well-established treatments for child conduct problems (Kazdin, 2005; Nock, 2003) requires significant parental adherence, as previous research has shown that greater change in parenting practices over the course of treatment is associated with more favorable child outcomes (Forgatch, 1991). Therefore, this population and this treatment provided an ideal context in which to examine parent evaluations of treatment credibility and expectancies and their relation to subsequent treatment adherence.

Method

The study was conducted at a specialty outpatient clinic treating children with oppositional, aggressive, and antisocial behavior. Participants included seventy-six parents or legal guardians (referred to subsequently as "parents") and their children referred to the clinic by a child psychiatry triage center or by other community sources. It is notable that given the sample size ($N = 76$) and with two-tailed tests with $\alpha = .05$, the statistical power to detect small, medium, and large effects was .22, .85, and .99, respectively (Cohen, 1988). The university institutional review board provided approval for this study and all parents provided written informed consent to participate. Children seven years and older also provided written assent to participate.

The primary caregiver of the child participated in treatment. Caregivers included biological mothers (88.2%), step, foster, or adoptive mothers (3.9%), or biological fathers or other family members (7.9%). Parent age ranged from 20 to 66 years ($M = 35.3$, $SD = 8.8$), and self-identified ethnicity as 57.9% European American, 30.3% African American, 5.3% Hispanic, and 6.6% biracial. Marital status was reported as 48.7% married, 26.3% never married, 13.2% divorced, 9.2% separated, and 2.6% widowed. Nearly half (40.8%) of families in the current study were receiving public assistance. Children (20 girls, 56 boys) ranged in age from 2 to 13 ($M = 7.0$, $SD = 2.8$). Child ethnicity matched parent-identified ethnicity in all cases.

Assessment

General information sheet

Basic demographic information about the child, parent, and family was obtained during an interview with the parent at the first therapeutic contact. This information included details about parent and child age, gender, ethnicity, and family income.

Parent treatment credibility and expectancies

Treatment credibility and parent expectancies for therapy were assessed using a modified version of the *Credibility/Expectancy Questionnaire* (CEQ; Borkovec & Nau, 1972; Devilly & Borkovec, 2000). The wording of the six-item CEQ was modified slightly to assess parent beliefs about child treatment to create the *Credibility/Expectancy Questionnaire—Parent Version* (CEQ-P). Three items assessed parent beliefs about the credibility of treatment (e.g., “How much sense does the therapy offered to you seem to make?”) and three items assessed parent expectancies for treatment (e.g., “By the end of therapy, how much improvement in your child’s behavior do you think will have occurred?”). In keeping with the original version of this measure, items 1, 2, 3, and 5 were scored on a nine-point scale (1 = not a lot of sense/no improvement; 9 = a lot of sense/very much improvement) and items 4 and 6 were scored on an 11-point scale (e.g., 0–100%). Items 4 and 6 were recoded to correspond to the 1–9 point scale used for items 1–3 and 5, such that values from 40–60% were collapsed into one value (i.e., 5). Previous psychometric evaluation of the CEQ revealed adequate reliability and construct validity in adult clinical samples (Devilly & Borkovec, 2000). The CEQ-P was administered during the first therapeutic contact and again after the fifth treatment session to evaluate the impact of changes in parent expectancies during the early stages of treatment.

Parent motivation

Parent motivation for therapy was assessed using the *Parent Motivation Inventory* (PMI; Nock & Photos, 2006), a 25-item measure in which parents indicate their level of treatment motivation on a five-point scale (1 = strongly disagree; 5 = strongly agree). Items corresponded with three components of motivation: (1) desire for child change (e.g., “I want my child’s behavior to improve”), (2) readiness to change (e.g., “I am willing to change my current parenting techniques and try new ones”), and (3) perceived ability to change (e.g., “I believe that I am capable of learning the skills needed to change my child’s behavior”). The PMI was administered at the same time as the CEQ-P. The PMI total and subscale scores have strong internal consistency and test-retest reliability (see Nock & Photos, 2006). The PMI total score was used in the current study as a global measure of parent motivation for treatment.

Treatment adherence

Parents’ adherence to treatment recommendations over the course of treatment was assessed using the *Treatment Adherence Questionnaire* (TAQ). The TAQ is a new measure developed in collaboration with therapists who had extensive experience with the treatments used in this study. The TAQ contains two ratings of the *quantity* of parent adherence to the treatment regimen in the previous week (“During the past week, in what percentage of your interactions with [child’s name] did you use the skills you’ve learned so far?”). This item is completed

separately by the parent and therapist and is scored on a five-point scale (0%, 25%, 50%, 75%, 100%). In addition, the TAQ contains one therapist-completed item regarding the overall *quality* of parent adherence. This item is also scored on a five-point scale (0 = no adherence/mastery, 4 = perfect adherence/mastery). Given parents' treatment adherence was rated by parents and therapists at multiple time points (i.e., during sessions five, seven, and eight) we created summary variables of the overall quantity and quality of parents' treatment adherence using the three items on the treatment adherence measure. A *z* score was calculated for each person on each item, and overall adherence quantity was the mean of the parent- and therapist-rated adherence quantity variables from sessions seven and eight, while adherence quality was the mean of therapist-rated adherence quality variables from sessions seven and eight. Ratings from sessions seven and eight were chosen because earlier treatment sessions focused primarily on assessment and providing didactic information, thus there was not much for parents to adhere to until these later sessions.

Treatment attendance

Treatment attendance was measured by calculating the total number of sessions attended by each parent.

Procedures

After contacting the clinic for treatment, all parents attended an initial clinic orientation session during which the content and duration of treatment provided were explained by the therapist. Following this session all parents and children were scheduled for a comprehensive psychosocial evaluation of the child, parent, and family. This study examined the treatment period from the first clinic visit through the delivery of eight manualized treatment sessions. The decision to focus on this specific period was guided by several considerations. The main content of the treatment is delivered during the first six-to-eight sessions with subsequent sessions used to practice and develop the skills that have been learned. Therefore, this study examined the influence of parent beliefs at pre-treatment on subsequent adherence over the sessions in which the primary content of this treatment was delivered. Moreover, the duration of the treatment period examined is consistent with the median duration of treatment in child and adolescent therapy (Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz, Weiss, Alicke, & Klotz, 1987), suggesting these results may have some generality to other child and adolescent therapy efforts.

Treatment

All parents received parent management training (PMT; see Kazdin, in press). Additionally, children seven years or older (50% of cases) received cognitive problem-solving skills training (PSST; see Kazdin, 2003). Parents were seen individually in PMT to 1) develop adaptive parenting practices, 2) improve child-parent interaction patterns, and 3) alter child behavior at home and at school. Parenting skills were developed in the sessions using practice, feedback, and shaping and specific behavior-change programs were provided to advance skills outside of the session. In PSST, children were seen individually to learn problem-solving skills (e.g., generating alternative solutions, means-ends thinking) to utilize in interpersonal interactions (e.g., with parents, teachers, siblings, and peers). Within the sessions, problem-solving skills were developed through practice, modeling, role-playing, corrective feedback, and social and token reinforcement. Over the course of therapy, parents

and children were seen together on several occasions to review, discuss, and practice aspects of treatment. The mean duration of treatment involvement for the present study was 6.3 sessions ($SD = 4.2$).

Results

Factor structure of the CEQ-P

We conducted a principle components analysis to examine the internal structure of the CEQ-P. We used an oblique (direct oblimin) rotation because we expected derived components would be correlated. The resulting eigenvalues and scree plot supported a two component solution, in which the two components accounted for 80% of the variance in scores. The first component was composed of items 1–3 and represented treatment credibility, and the second component was composed of items 4–6 and represented treatment expectancies, as presented in Table 1. Item 5 also had a cross-loading with first component.

Descriptive statistics and reliability of the CEQ-P

Given support for the two component structure of the CEQ-P, we examined the descriptive statistics, reliability, and inter-relations among the CEQ-P total score and each of the two subcomponents. As presented in Table 2, parents reported a relatively high level of pre-treatment credibility and expectancies for this treatment. In addition, the CEQ-P total and subscale scores each demonstrated strong internal consistency reliability as well as medium to high test-retest reliability. Moreover, the large correlation between the two subscales ($r = .58$) suggests that treatment credibility and expectancies are related but not redundant constructs, with a shared variance (r^2) of 34%.

Relations between child and parent factors and the CEQ-P

Parents' report of treatment credibility and expectancies were unrelated to child age, child gender, parent age, ethnic minority status, and receipt of public assistance, as presented in Table 3. In contrast, the CEQ-P was significantly related to the PMI ($r = .29$, $p < .05$),

Table 1 Items and component loadings for the CEQ-P

Item	Component 1	Component 2
1. At this point, how much sense does the therapy offered to you make?	.93	.13
2. At this point, how successful do you think this treatment will be in reducing your child's problems?	.82	-.14
3. How sure would you be in recommending this treatment to a friend who experiences similar problems?	.82	-.01
4. By the end of the therapy period, how much improvement in your child's problem behavior do you really <i>feel</i> will occur?	-.04	-.96
5. By the end of therapy, how much improvement in your child's behavior do you <i>think</i> will have occurred?	.00	-.94
6. At this point, take a minute to think about how much do you <i>really feel</i> that therapy will help to reduce your child's problem behaviors?	.50	-.51

Note: CEQ-P: Credibility/Expectancy Questionnaire—Parent Version.

Table 2 Descriptive statistics and reliability for the CEQ-P

Measure	<i>M</i>	<i>SD</i>	α	1	2	3
1. CEQ-P total	43.78	6.68	.87	.46**		
2. CEQ-P—Credibility	22.40	3.62	.82	.88***	.34*	
3. CEQ-P—Expectancies	21.37	3.90	.88	.90***	.58***	.52***

Note. CEQ-P: Credibility/Expectancy Questionnaire – Parent Version; values in the diagonal represent test-retest reliability coefficients.

* $p < .05$; ** $p < .01$; *** $p < .001$.

supporting the construct validity of this measure. Interestingly, closer examination reveals that parents’ report of treatment credibility was more strongly related to parent motivation for treatment ($r = .35, p < .01$) than were their expectancies about the effectiveness of treatment ($r = .17, ns$).

Predictive validity of the CEQ-P

We evaluated the ability of parents’ treatment credibility and expectancies at the first treatment session to predict subsequent treatment adherence and attendance using a series of hierarchical linear regression analyses. In each regression analysis, the child and parent factors examined above were entered in a first step, scores on the PMI were entered in a second step, and scores on each CEQ-P subscale were entered in a third step in order to examine the incremental predictive validity of the CEQ-P in predicting treatment adherence and attendance. The results of the first regression analysis predicting quantity of treatment adherence are presented in Table 4. As shown, neither the child or parent factors entered in step one, nor PMI scores entered in step two, significantly predicted subsequent quantity of treatment adherence. However, scores on the CEQ-P entered in step three explained significant variance in the subsequent quantity of treatment adherence. Interestingly, parent expectancies about treatment effectiveness emerged as a significant predictor of treatment adherence, while beliefs about treatment credibility did not.

In the second regression analysis predicting quality of treatment adherence, child and parent factors, $\Delta F_{(5,18)} = 0.76, \Delta R^2 = .17, ns$; PMI scores, $\Delta F_{(1,17)} = 1.68, \Delta R^2 = .07, ns$; and scores on the CEQ-P, $\Delta F_{(2,15)} = 0.75, \Delta R^2 = .07, ns$, all failed to predict this outcome, suggesting adherence quality is less influenced by such factors. In the third step of this analysis neither credibility ($\beta = -.01$) nor expectancies ($\beta = .33$) were significantly associated with adherence quality, although the latter association represents a medium effect size.

Table 3 Relations between child and parent factors and the CEQ-P

Variable	<i>M</i> or %	<i>SD</i>	<i>r</i> with CEQ-P
Child factors			
Age	6.7	2.7	-.05
Male gender (%)	73.4		-.16
Parent factors			
Age	34.6	8.3	.06
Ethnic minority status (%)	39.1		.05
Public assistance (%)	42.2		.04

Note. CEQ-P: Credibility/Expectancy Questionnaire – Parent Version.

* $p < .05$; ** $p < .01$.

Table 4 Prediction of the quantity of treatment adherence

Variables	B	SE B	β	ΔF	ΔR^2
Step 1				0.27	0.07
Child age	-0.02	0.98	-.06		
Child gender	0.19	0.61	0.08		
Parent age	0.18	0.03	0.20		
Ethnic minority	0.56	0.49	0.30		
Public assistance	0.07	0.43	0.04		
Step 2				0.92	0.05
PMI	0.02	0.02	0.25		
Step 3				8.82*	0.48
CEQ-P—Credibility	0.03	0.06	0.17		
CEQ-P—Expectancies	0.12	0.05	0.70*		

Note. PMI: Parent Motivation Inventory; CEQ-P: Credibility/Expectancy Questionnaire—Parent Version.

* $p < .05$.

Finally, in the third regression analysis predicting treatment attendance, child and parent factors, $\Delta F_{(5,70)} = 1.77$, $\Delta R^2 = .11$, *ns*; and PMI scores, $\Delta F_{(1,69)} = 2.03$, $\Delta R^2 = .03$, *ns*, failed to predict this outcome. Scores on the CEQ-P explained unique variance in treatment attendance, but at a level that was only marginally statistically significant, $\Delta F_{(2,67)} = 2.08$, $\Delta R^2 = .05$, $p = .07$. In the third step of this analysis credibility ($\beta = .17$) was not significantly associated with treatment attendance; however, there was a negative, medium-sized, statistically significant relation between parent expectancies and treatment attendance ($\beta = -.28$, $p < .05$).

Discussion

This study provides a brief measure of treatment credibility and expectancies, the CEQ-P, as well as evidence on the structure, reliability, and validity of this new measure. The main findings were that: (a) the CEQ-P was composed of two components that measure parents' treatment credibility (3-items) and expectancies (3-items); (b) these components and the total scale were internally consistent and had strong test-retest reliability; (c) scores on the CEQ-P were significantly associated with scores on a measure of parent motivation for treatment, supporting the construct validity of this measure; and (d) parents' treatment credibility and expectancies at the first clinic visit significantly predicted subsequent adherence to treatment procedures. These findings extend child therapy research in several ways. First, this study provides a brief, psychometrically sound measure of treatment credibility and expectancies among parents. Treatment credibility and expectancies have proven to be extremely important constructs in the psychological and behavioral interventions for adults, as well as in psychological and medical treatments more broadly (see Frank & Frank, 1991; Harrington, 1997; Kirsch, 1990). We hope the availability of the CEQ-P will facilitate future studies of these constructs in clinical child and adolescent research.

Second, this study revealed that parent reports of treatment credibility and expectancies are significantly related to motivation for treatment. The significant relationship between the CEQ-P and PMI supports the construct validity of the CEQ-P. This suggests that parents' views about treatment credibility and their expectations for treatment correspond, but do not fully overlap, with their readiness to engage in child treatment.

Third, and perhaps most importantly, parents' treatment credibility and expectancies significantly predicted subsequent adherence to treatment. Even after controlling for the child and parent factors mentioned above, parents' beliefs about treatment at the first session predicted their adherence to treatment as late as the seventh and eighth week in treatment. This finding suggests that the beliefs parents have about treatment very early on in the treatment process can have a significant impact on treatment participation and potentially on treatment outcomes. We also found that parents' treatment credibility and expectancies did not predict the *quality* of parents' treatment adherence. This pattern of findings suggests that parents who believe treatment is credible and likely to lead to improvement engage more frequently in the skills taught in treatment, but they are not necessarily more adept at using these skills than parents with less favorable beliefs about treatment. It is likely that other factors, such as parents' level of comfort with trying new behaviors, their previous experience with treatment, and their ability to learn the skills, are predictive of the quality of their adherence to the treatment procedures.

Interestingly, treatment credibility and expectancies demonstrated different predictive relationships with treatment motivation and adherence. Specifically, parents' treatment credibility was significantly related to their motivation to engage in treatment, while treatment expectancies served as a significant predictor of treatment adherence. These subtle distinctions indicate that parents who think the treatment is valid are more likely to report a readiness and willingness to change in treatment, whereas parents who have high expectations for the ability of treatment to affect change are more likely to follow the treatment protocol. Importantly, the items for treatment expectancies require parents to make predictions about whether or not they expect the treatment to lead to improvements at the end of treatment. It may be that, by making a commitment to a positive outcome, parents with high expectancies feel a sense of obligation to take an active role in contributing to positive changes over the course of treatment.

Although high expectancies for treatment were significantly related to greater treatment adherence, believing that treatment would have a positive impact on the family was also related to *shorter* treatment attendance. It may be that parents who had high expectations for treatment demonstrated greater improvement over the first few sessions, requiring only a small dose of treatment to create therapeutic change. These findings are consistent with a previous study that found that parents with the lowest expectations for child therapy had the greatest treatment attendance; although, this earlier study revealed a curvilinear relation between expectancies and attendance not observed in the current study (Nock & Kazdin, 2001). This inconsistency may be attributed to the fact that the current study followed families only through 8 treatment sessions, while the earlier study examined treatment attendance over a longer treatment period. Although the primary content of the treatment was delivered during the 8 sessions, the short duration of treatment may have reduced the variability within our sample.

The constructs evaluated in this study are of particular importance given they can be modified in treatment and therefore may be useful in enhancing treatment participation and outcomes. Indeed, while many previous studies have focused on the identification of static predictors of treatment participation (see Armbruster & Kazdin, 1994; Pekarik & Stephenson, 1988), others have demonstrated that measuring and modifying more malleable factors such as client motivation for change can have a positive impact on treatment participation and clinical outcomes (Miller & Rollnick, 2002; Nock & Kazdin, 2005; Steinberg, Ziedonis, Krejci, & Brandon, 2004). Efforts to modify parental credibility and expectancies in future studies may prove useful in further enhancing the effects of psychosocial treatments.

These findings should be interpreted in the context of several limitations of this study. First, the generality of the current findings may be restricted given that we evaluated the study hypotheses among parents of children referred for clinical services because of conduct problems. These findings may not generalize to other treatments for child behavior problems, such as child-centered treatments or family therapies, or to the treatment of other child behavior problems, such as depressive and anxiety disorders. An exciting future direction for this research would be to evaluate the impact of child and family beliefs about treatment. For instance, what influence do child and adolescent ratings of treatment credibility and expectancies have on treatment attendance, adherence, and outcome?

Second, the pattern of findings suggests that method variance had some effect on the observed relations between treatment expectancies and credibility and treatment adherence. Parent report on the CEQ-P was significantly related to parent report of treatment adherence, but did not predict therapist report of adherence quality. Thus, parents who expected treatment to improve their families may have been more likely to report that they were following treatment protocol outside of the treatment sessions. This pattern highlights the importance of utilizing multiple informants to evaluate treatment progress, and suggests that future research should examine whether parent and therapist report of treatment adherence differentially predict treatment outcome.

Third, this examination was limited in the range of constructs assessed and the period of treatment evaluated. Many other parent and family factors, such as parent attributions about child behavior problems, may influence treatment participation and outcomes and warrant attention in future research (see Morrissey-Kane & Prinz, 1999 for a review). In addition, the current study was conducted over the course of only eight treatment sessions, or the period over which the primary content of PMT is delivered. Adherence ratings did not differ significantly across the sessions evaluated, suggesting that parent adherence is relatively stable by the seventh and eighth sessions. It is certainly possible that parent beliefs, parent adherence, and the relations among these constructs change significantly later in treatment; consequently, future studies that replicate these results and examine longer treatment periods are warranted.

Fourth, the relatively small sample size is less than the number of cases often recommended for principle component analyses and limited our statistical power to detect relations of small magnitude. On balance, this study had a sample size larger than that used in most studies of child and adolescent therapy (Kazdin et al., 1990), and it has been proposed that solutions with loadings above .80, such as the one in our study, do not require such large sample sizes to obtain reliable results (Guadagnoli & Velicer, 1988). Nevertheless, these findings require replication using larger and more diverse samples and conditions.

Despite these limitations, this study provided a reliable, valid measure of parents' treatment credibility and expectancies that predicts subsequent treatment adherence. Hopefully clinicians and researchers alike will utilize this efficient measure to further examine these important constructs.

Acknowledgments We are grateful to Thomas Borkovec for his permission to use the CEQ in this research. Completion of this research was facilitated by support from the National Institute of Mental Health (MH12923) to Matthew K. Nock and by support from the William T. Grant Foundation (98-1872-98) and National Institute of Mental Health (MH59029) to Alan E. Kazdin. We are extremely grateful to Dr. Kazdin for his support and guidance and to the staff of the Yale Child Conduct Clinic for their helpful contributions to the development and implementation of this research.

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