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Parent Motivation to Participate in Treatment: Assessment and Prediction of Subsequent Participation

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Treatment motivation is required for virtually all psychosocial treatments because clients must participate actively in the treatment process. In child and family treatments, it is the parent who must be motivated to manage treatment participation; however, no measures are currently available for evaluating parent motivation for treatment. The authors developed and evaluated a brief rating scale, the Parent Motivation Inventory (PMI), to measure parent motivation to participate in treatment. Results supported a uni-dimensional measure with strong internal consistency and test-retest reliability. Increases in parent motivation predicted the perception of fewer barriers to treatment participation, which was significantly associated with greater treatment attendance. The PMI provides a reliable and valid method of assessing parents' motivation to participate in treatment and has implications for the prediction and potential modification of barriers to treatment and treatment participation.

KEY WORDS: parent motivation; child therapy; treatment participation; treatment attendance; barriers to treatment.

Many evidence-based treatments exist for child and adolescent behavior problems (Kazdin & Weisz, 2003). Virtually all of these treatments require that children and families attend multiple treatment sessions in order to receive the full benefits of such treatments. Unfortunately, failure to attend treatment is an enormous problem in child therapy and it is estimated that 40–60% of youth involved in child therapy terminate treatment prematurely (Kazdin, 1996; Wierzbicki & Pekarik, 1993). Moreover, children with untreated behavioral problems are more likely to

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engage in delinquent activities later in life, including involvement with violent crime, school dropout, drug and alcohol abuse, unsafe sex, dangerous driving habits, consorting with unfavorable peer groups, and unemployment (Lochman & Salekin, 2003; Moffitt, Caspi, Harrington, & Milne, 2002). Thus, there is a serious need to identify factors that predict poor treatment participation. Identifying factors that are potentially malleable is especially important given such factors may then be targeted in interventions designed to increase treatment participation.

Research on adult treatments has shown that client motivation for treatment is a key factor in the treatment process, and a lack of motivation is associated with less favorable treatment outcomes, poor treatment adherence and premature termination (e.g., Miller & Rollnick, 2002; Ryan, Plant, & O'Malley, 1995). Moreover, interventions aimed at increasing treatment motivation have been shown to improve treatment participation and effectiveness in adults (e.g., Miller & Rollnick, 2002; Murphy & Baxter, 1997; Prochaska & Levesque, 2002; Walitzer, Dermen, & Conners, 1999).

Although research on adult treatments has shown great progress through a focus on client motivation, few efforts have been made to measure treatment motivation in child and family treatments. Child and family treatments require special consideration because they differ in fundamental ways from adult treatments. For instance, parents typically are responsible for seeking and initiating treatment, consenting to treatment procedures, and managing ongoing treatment attendance (see Nock & Ferriter, 2005). Thus, in child treatments it is *parent motivation* for treatment that may be most important in predicting which families will attend treatment and adhere to prescribed treatment procedures. Despite the potential importance of parent motivation for treatment, few have targeted parent motivation in the treatment of child behavior problems (Dishion et al., 2003; Miller & Prinz, 2003), and there are currently no measures for evaluating this construct.

The primary purpose of our study was to develop and evaluate a measure of parent motivation to participate in treatment. We developed the Parent Motivation Inventory (PMI) drawing from prior research on motivation in general (e.g., Eccles, Wigfield, & Schiefele, 1998; Higgins & Kruglanski, 2000; Prochaska, DiClemente, & Norcross, 1992; Sifneos, 1978; Zweben & Zuckoff, 2002) and work on motivation for psychosocial treatments in particular (e.g., Prinz & Miller, 1994). Items assessed three facets of parents' motivation, including: parents' desire for change in their child, parents' willingness to change their own behaviors in order to influence child change, and parents' perceived ability to change such behaviors. Our first goal was to evaluate the factor structure and reliability of the PMI. Our second goal was to examine whether parent motivation for treatment is associated with child, parent, and family characteristics. Previous work has shown that families characterized by ethnic minority status, lower income, and single parenthood have lower expectancies for child therapy (Nock & Kazdin, 2001). These relations may extend to parent motivation for treatment as well. However, Drieschner et al. (2004) have suggested that according to their model of

treatment motivation, demographic variables should not directly influence motivation for treatment. This claim has yet to be empirically tested, and thus we examined associations between pre-treatment family, parent, and child characteristics and parent motivation in order to clarify these relations.

A measure of treatment motivation is most useful to researchers and clinicians if it provides information about the likelihood of subsequent treatment participation. Thus, our third and final goal was to evaluate the predictive validity of parent motivation for treatment. We expected that parents with lower motivation to participate in treatment would report more perceived barriers to treatment and would have less attendance at treatment. Perceived barriers to treatment refer to obstacles that interfere with parents' participation at treatment, including perceptions that treatment is demanding or not relevant to the child's problems, and a poor relationship with the therapist (Kazdin, Holland, Crowley, & Breton, 1997). We expected that parent motivation would predict both barriers to treatment and subsequent treatment attendance.

Treatment motivation and related constructs such as treatment alliance and adherence are dynamic, rather than static, constructs in that they change over the course of treatment. It has been demonstrated that *changes* in these factors over the course of treatment are more important in predicting treatment participation and other clinical outcomes than initial levels of such constructs (Barber et al., 2000; Patterson & Chamberlain, 1994; Stoolmiller et al., 1993). Based on this previous research, we expected this also may be the case with parent motivation and tested the hypothesis that changes (i.e., increases) in motivation for treatment would be more important in predicting subsequent participation than initial or mid-treatment levels of motivation.

We evaluated these hypotheses in the context of parent management training (PMT) for the treatment for child conduct problems for several reasons. 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). Also, PMT is among the most well-established treatments for child conduct problems (Kazdin, 2003; Nock, 2003) and requires significant adherence from parents, as greater change in parenting practices over the course of treatment is associated with more favorable child outcomes (DeGarmo & Forgatch, 2005).

METHOD

Participants

Participants were 76 parents or legal guardians and their children referred for outpatient treatment for children with oppositional, aggressive, and antisocial

behavior. The primary caretaker of the child participated in treatment and included biological mothers (90.6%), step, foster, or adoptive mothers (3.1%), or biological fathers or other family members (6.3%) (referred to as "parents" throughout this paper). Parents ranged in age from 20 to 66 years ($M = 34.6$, $SD = 8.3$), and self-identified ethnicity as 60.9% European American, 26.6% African American, 6.3% Hispanic, and 6.3% biracial. Parents' marital status was reported as 45.3% married, 29.7% never married, 15.6% divorced, 7.8% separated, and 1.6% widowed. Two-fifths (42.2%) of families in the current study were receiving public assistance. Children (20 girls, 56 boys) ranged in age from 2 to 12 ($M = 6.7$, $SD = 2.3$). The ratio of boys to girls (2.8:1) is consistent with prevalence rates of behavior problems in preadolescent children (Zoccolillo, 1993). Parent-identified ethnicity of parent and child matched in all cases.

Assessment

The purposes of assessment were to measure parent motivation for treatment, as well as child, parent, family, and treatment factors hypothesized to relate to parent motivation. These constructs were assessed by multiple informants (parents and therapists), using varied assessment methods (interviews and questionnaires), and measurement at multiple time points over the early stages of treatment.

General Information Sheet

During an interview with the parent at the first therapeutic contact, demographic details were obtained about parent and child age, gender, and ethnicity. Family factors were also assessed, including family composition, income, and marital status.

Parent Motivation

Parent motivation for therapy was assessed using the *Parent Motivation Inventory* (*PMI*). The PMI is a 25-item self-report measure of parent treatment motivation on a five-point scale (1 = strongly disagree; 5 = strongly agree). Items were generated to correspond with three main components of motivation, including: Desire for child change (e.g., "I want my child's behavior to improve"), Readiness to change parenting behavior (e.g., "I am willing to change my current parenting techniques and try new ones"), and Perceived ability to change parenting behaviors (e.g., "I believe that I am capable of learning the skills needed to change my child's behavior"). Evaluation of the PMI using the Flesch-Kincaid Reading Index indicated the language used in the measure is equivalent to a 5th grade reading level (Flesch, 1948). The PMI was administered during the first

therapeutic contact and the fifth treatment session to evaluate the consistency of parent motivation during the early stages of treatment.

Barriers to Treatment Participation

The *Barriers to Treatment Participation Scale* (BTPS; Kazdin, Holland, Crowley, & Breton, 1997) assessed parents' experience of obstacles or barriers to participating in their children's treatment. The BTPS is comprised of 44 items (1 = never a problem; 5 = very often a problem) measuring parents' experience of problems in four primary areas: stressors or obstacles that compete with treatment (20 items), treatment demands and issues (10 items), perceived relevance of treatment (8 items), and relationship with the therapist (6 items). Previous studies have demonstrated adequate internal consistency reliability (Cronbach's $\alpha = .86$) and the ability of the BTPS to predict premature termination from child therapy (Kazdin, Holland, & Crowley, 1997). Parents and therapists independently completed the BTPS at the end of treatment. Parent and therapist ratings on the BTPS are significantly correlated and are uniquely predictive of premature termination from treatment (Kazdin et al., 1997). Given many parents who terminated treatment prematurely failed to complete the BTPS, the therapist version of the BTPS was used in all analyses to maximize statistical power.

Treatment Attendance

Treatment attendance was assessed using the total number of sessions attended.

Procedures

After contacting the clinic for treatment, all parents attended an initial clinic orientation session. A therapist described the research project to all parents and children, and parent consent and child assent (for children $\geq$ seven years) were obtained from all families. Parents were informed we were studying "parents' participation during the treatment program," but they were not told about the specific constructs or outcome measures assessed. Following this session, all parents and children were scheduled for a comprehensive psychosocial evaluation of the child, parent, and family.

The current study examined treatment period from the first clinic visit through the delivery of eight manualized treatment sessions (i.e., one orientation session, one assessment session, and six treatment sessions). We focused on this early phase of treatment for several reasons. First, premature termination typically occurs early in the course of treatment and most people who drop out of treatment do so during

this period (Phillips, 1985). Second, the main content of the treatments used in this study is delivered during the first eight treatment sessions with subsequent sessions devoted to practicing the skills taught earlier. The definition of treatment completion as the conclusion of the initial treatment delivery stage in cognitive-behavioral treatments is consistent with previous reports (e.g., Nye, Zucker, & Fitzgerald, 1995; Patterson & Chamberlain, 1994). Third, the duration of this treatment period is commensurate with the median duration of treatment in child and adolescent therapy (Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz, Weiss, Alicke, & Klotz, 1987), suggesting these results have generality to other child and adolescent treatments.

Treatment

All parents received parent management training (PMT), and children $\geq$ seven years (50% of cases) also received cognitive problem-solving skills training (PSST; see Kazdin, 1996). In PMT, parents were seen individually to develop adaptive parenting practices and child-parent interaction patterns to alter child behavior at home and at school. Practice, feedback, and shaping were used to develop parental skills in the sessions and specific behavior-change programs for use outside of sessions. In PSST, children were seen individually to learn problem-solving skills (e.g., generating alternative solutions, means-ends thinking) to manage interpersonal situations in a variety of contexts. 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 PMI

A principal components analysis (PCA) was conducted to examine the internal structure of the PMI. An oblique (direct oblimin) rotation was used because we had no *a priori* reason to assume the three hypothesized components would be orthogonal. Rather, we expected the different components of parent motivation would be inter-correlated. Using an eigenone criterion, four components emerged and accounted for 71% of the variance in scores. However, multiple criteria suggested that performance on the PMI was best represented by a single component. These criteria included examination of the scree plot, amount of variance accounted for by each component, the loading of each item onto the first component, and the high correlations among the components. We therefore adopted a one component solution, which accounted for 56% of the variance in scores. All 25 items had loadings on this component $\geq .40$, as presented in Table I.

Table I. Items and Component Loadings for the PMI

Item		Component loading
13.	I am motivated to practice the techniques I will learn in session at home with my child	.91
11.	I want to be involved in my child's treatment at this point in time	.87
19.	I am motivated to change the way I reward and punish my child if it will lead to improvement	.86
21.	I am motivated to participate in my child's treatment each week	.86
22.	Participation in this treatment is a top priority in my schedule and that of my child	.84
9.	I would like my child's behavior to change	.82
4.	I am prepared to come to the clinic every week for several months in order to change my child's behavior	.82
24.	I look forward to learning new techniques for managing my child's behavior	.81
18.	I want my child's behavior to improve	.81
16.	I am eager to participate in treatment	.80
25.	I am motivated to work with a therapist for one hour each week in order to change my own behavior	.79
5.	Although the main problem is with my child's behavior, I believe I should come to treatment every week	.79
23.	I believe that I am capable of learning the skills needed to change my child's behavior	.78
10.	I am willing to try parenting techniques even if I think they might not work	.77
6.	It is very important for the well-being of my child that he changes his behavior	.77
8.	I think the benefits of this treatment will be greater than the costs	.74
7.	I am willing to change my current parenting techniques and try new ones	.72
20.	I believe that I can learn to change my child's behavior	.69
14.	I believe that my child's behavior cannot change without my involvement in treatment	.69
2.	I am willing to work on changing my own behavior as it relates to managing my child	.68
12.	My child will experience many negative outcomes in life if his behavior does not change	.62
15.	My family will experience many negative outcomes in life if my child's behavior does not change	.57
17.	I believe that changing my own behavior can cause my child's behavior to change	.55
3.	It is very important for the well-being of my family that my child changes his behavior	.51
1.	My child's behavior has to improve soon	.40

Descriptive Statistics and Reliability of the PMI

Parents reported a high level of pre-treatment motivation, with a mean item score for the total scale of 4.6 out of 5 points. The frequency of total scores on the PMI was moderately negatively skewed, thus a reflect and square root transformation was performed on PMI scores so that scores more closely approximated

a normal distribution (Tabachnick & Fidell, 2001). The PMI demonstrated good internal consistency reliability (Cronbach's $\alpha = .96$) as well as test-retest reliability from the administration at the first to the fifth treatment session, $r(39) = .76$, $p < .001$.

Although the PCA supported a single component model of the PMI, we also evaluated the descriptive statistics and reliability of each of the three hypothesized components of parent motivation, since researchers and clinicians may have hypotheses about parent motivation specific to one or more of these components in future studies. As presented in Table II, parents endorsed high levels of each of the three subcomponents assessed: Desire for change (items 1, 3, 6, 9, 12, 15, 18), Readiness to change (items 2, 4, 5, 7, 8, 10, 11, 13, 16, 19, 21, 22, 24, 25), and Perceived ability to change (items 14, 17, 20, 23). Each subscale demonstrated strong internal consistency reliability and test-retest reliability, suggesting the total PMI score as well as the individual subscales are reliable indicators of parent motivation and its hypothesized subcomponents. The large correlations among the three subscales provide further support for treating the PMI as a uni-dimensional measure in the absence of subcomponent-specific hypotheses.

Relations between Parent, Child, Family Factors and the PMI

The PMI was not significantly related to any of the child, parent, or family variables examined, as shown in Table III. The correlations between the demographic variables and the PMI were very low across all of the categories ($r = -.07$ $-.08$), suggesting the specific parent, family, and child variables measured do not influence motivation for treatment.

Predictive Validity of the PMI

The measurement of parent motivation is most useful if it is able to predict which families will experience barriers to treatment or which families will stop attending treatment. To evaluate the ability of the PMI to predict such outcomes,

Table II. Descriptive Statistics, Reliability, and Inter-Correlations for the Parent Motivation Inventory

Measure	*M*	*SD*	α	1	2	3	4
1. PMI Total	115.6	10.2	.96	.76			
2. PMI—Desire	31.7	3.6	.84	.87	.83		
3. PMI—Readiness	65.5	5.8	.96	.97	.74	.74	
4. PMI—Ability	18.5	1.7	.77	.87	.62	.85	.68

Note: PMI: Parent Motivation Inventory; values in the diagonal represent test-retest reliability coefficients. All *p*s < .001.

Table III. Relations between Demographic Variables and Parent Motivation

Variable	*M* or %	SD	*r* with PMI
Child Factors			
Age	6.7	2.7	.07
Male gender (%)	73.4		.07
Ethnic minority status (%)	39.1		−.07
Parent Factors			
Age	34.6	8.3	.08
Single parent (%)	54.7		−.03
Non-biological parent (%)	9.4		.02
Family Factors			
Number of people in home	3.8	1.3	−.07
Public assistance (%)	42.2		.05
DCF involvement (%)	25.0		−.03

Note: PMI: Parent Motivation Inventory; DCF: Department of Child and Family Services.

we conducted a series of regression analyses predicting scores on the BTPS and the total number of sessions attended from (1) parent motivation at the first session, (2) parent motivation at the fifth session, and (3) changes in parent motivation from the first to the fifth session.

Parent motivation at the first session was unrelated to the subsequent experience of barriers to treatment, as presented in Table IV. However, the relation between parent motivation and barriers to treatment was characterized by a medium, although non-significant, effect size at the fifth session, and the change in parent motivation from the first to the fifth session was a statistically significant predictor of barriers to treatment and was characterized by a medium-to-large effect size.

The relations between treatment attendance and parent motivation at session one, $F_{(1,\ 74)} = 1.89$, $\beta = .16$, *ns*, session five, $F_{(1,\ 37)} = 1.35$, $\beta = .19$, *ns*, and the change in parent motivation, $F_{(1,\ 37)} = 1.14$, $\beta = .17$, *ns*, were all characterized by small-to-medium, non-significant effect sizes. However, barriers to treatment was a significant statistical predictor of treatment attendance, $F_{(1,\ 49)} = 20.31$, $\beta = -54$, $p < .001$, suggesting a mediational model in which increased parent motivation leads to the perception of fewer barriers to treatment, which in turn leads to better treatment attendance.

Table IV. Prediction of Barriers to Treatment Participation

Variables	*B*	*SE B*	*β*	*F*	R^2
PMI-Session 1	0.02	0.23	.01	0.01	.00
PMI-Session 5	−0.45	0.26	−.30	3.06	.09
PMI-Change score	−0.87	0.37	−.39	5.54*	.15

Note: PMI = Parent Motivation Inventory; $n = 76$ for Session 1 and $n = 39$ for Session 5.
*$p < .05$.

Given that change in parent motivation was not a significant predictor of number of sessions attended we were not able to conduct a formal test of barriers to treatment as a statistical mediator of the relation between parent motivation and treatment attendance (see Kazdin & Nock, 2003). However, for exploratory purposes we evaluated the mediational role of barriers to treatment in the relation between parent motivation and treatment attendance given the significant relations among these constructs. The path coefficient between change in parent motivation and treatment attendance changed from $\beta = .17$ to $\beta = -.05$ when barriers to treatment was entered into the model (Sobel test $= 1.94$, $p = .052$), providing partial support for a model in which decreases in parent motivation lead to an increased perception of barriers to participating in treatment, which in turn leads to poorer treatment attendance. The relation between barriers to treatment and treatment attendance did not decrease when change in parent motivation was entered into a regression model, suggesting change in parent motivation does not mediate the relation between barriers to treatment and treatment attendance.

DISCUSSION

The main findings were that: (1) the PMI was best characterized by a single-component structure; (2) the PMI had strong internal consistency and test-retest reliability; and (3) increases in parent motivation, but not parent motivation at the first and fifth sessions, predicted subsequent barriers to treatment, which in turn predicted treatment attendance. These findings advance child therapy research in several ways.

This study provides a theoretical model and psychometrically sound measure of parent motivation for treatment. These data supported a uni-dimensional model of parent motivation and our measure was internally reliable and showed strong test-retest reliability. The three inter-correlated sub-components of parent motivation also demonstrated strong internal consistency and test-retest reliability. These sub-components provide researchers and clinicians with a starting point for examining more specific facets of parent motivation to participate in child treatment.

Parent motivation was not associated with any of the child, parent, or family characteristics examined in this study. This was surprising given previous studies have shown that demographic variables, such as socioeconomic status, increased age of the child, and higher amounts of pre-existing family adversity are associated with lower expectations for treatment (Nock & Kazdin, 2001) and with higher rates of treatment dropout (Weisz et al., 1987; Dishion & Patterson, 1992). The current findings suggest there is no direct relation between child, parent, and family characteristics and parent motivation for treatment. However, if there *is* any relation between these factors and parent motivation, it is likely mediated by parental beliefs about a particular treatment (see, Drieschner et al., 2004), and our

failure to evaluate such beliefs in this study may have limited our ability to detect such relations.

Perhaps most importantly, parent motivation was a significant statistical predictor of parents' perceived barriers to treatment participation, which in turn predicted treatment attendance. There was partial support for a mediational model evaluating these relations. However, this finding requires replication in a larger sample given the small-to-medium effect sizes that characterized the relation between parent motivation and treatment attendance. We could not completely rule out the alternative hypothesis that these findings were obtained by chance, and thus future studies of these relations are needed.

These findings should be viewed within the context of several methodological limitations of this work. First, this study evaluated the PMI in a population of parents seeking treatment for the conduct problems of their children. While methodological care was taken to administer the PMI at the most appropriate sessions for the treatment of behavior problems, the validity of the PMI in predicting barriers to treatment of other psychiatric disorders should be investigated in a different sample. Additionally, there are many treatments for conduct disorder in which the parents are not active participants. It is possible that these results may not generalize to this sort of treatment; at the least, a version with alternative wording will need to be developed and evaluated for child-only treatments. This would be an important next-step. Furthermore, this study included fewer participants than is generally desirable for a principal components analysis. The validity of the PMI would be strengthened by a replication that included a larger subject pool.

Repeated administration of the PMI is a strength of this study; however, in future replications, it is suggested that parent motivation be assessed with the PMI on at least three occasions. With two administrations of the PMI, we were able to evaluate a linear model of change in parent motivation, and the predictions from this model on barriers to treatment. With the addition of extra administrations, an alternative curvilinear model could be evaluated, which would be consistent with the "struggle and working-through" hypothesis (Stoolmiller, Duncan, Bank, & Patterson, 1993). This model posits that clients who are not ready for change immediately, but later decrease resistance to change, are most likely to benefit from long-term positive outcomes.

Finally, mediation of attrition by perceived barriers to treatment would be likely to be more accurately assessed by an earlier administration of the BTPS. In the current study, clinicians completed the BTPS for some participants after the parent had already dropped out of treatment. This is a source of potential bias that should be avoided in future studies by administering both parent and therapist versions of the BTPS in the first few sessions.

Despite these limitations, this study provides important information about parent motivation for treatment and has direct implications for clinical child psychology. First, the PMI is a useful tool for clinicians and researchers for measuring motivation and related constructs when it is administered at multiple time points

and a change-score is calculated. If motivation is not increasing during the course of treatment as measured by the PMI, this could be an early warning sign of possible premature termination of treatment.

Barriers to treatment may explain how parent motivation affects treatment attendance. Both motivation and perceived barriers are malleable, and targeting these constructs can guide intervention researchers seeking to increase participation in child therapy. For parents with static scores on the PMI, a discussion with the clinician aimed at increasing motivation may change perceptions about barriers, and ultimately prevent dropout (Nock & Kazdin, 2005).

This study focused on the role of parent motivation on participation in treatment for children with conduct problems. However, the role of child motivation should not be forgotten. Future research in understanding treatment motivation in child therapy may include the development of a measure of child motivation for treatment. This may be especially important in the treatment of adolescents, since the attendance and compliance shifts from the parent to the child with increasing age.

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