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Nicholas D. Mian

*University of New Hampshire, Manchester, Nicholas.Mian@unh.edu*

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## Pathways to Service Receipt: Modeling Parent Help-Seeking for Childhood Mental Health Problems

**Leandra Godoy, Nicholas D. Mian, Abbey S. Eisenhower, and Alice S. Carter**

Department of Psychology, University of Massachusetts Boston, 100 Morrissey Blvd, Boston, MA 02125, USA

Leandra Godoy: Leandra.Godoy001@umb.edu; Nicholas D. Mian: Nicholas.Mian001@umb.edu; Abbey S. Eisenhower: abbey.eisenhower@umb.edu; Alice S. Carter: alice.carter@umb.edu

### Abstract

Understanding parent appraisals of child behavior problems and parental help-seeking can reduce unmet mental health needs. Research has examined individual contributors to help-seeking and service receipt, but use of structural equation modeling (SEM) is rare. SEM was used to examine parents' appraisal of child behavior, thoughts about seeking help, and receipt of professional services in a diverse, urban sample ( $N = 189$ ) recruited from women infant and children offices. Parents of children 11–60 months completed questionnaires about child behavior and development, parent well-being, help-seeking experiences, and service receipt. Child internalizing, externalizing, and dysregulation problems, language delay, and parent worry about child behavior loaded onto parent appraisal of child behavior. Parent stress and depression were positively associated with parent appraisal (and help-seeking). Parent appraisal and help-seeking were similar across child sex and age. In a final model, parent appraisals were significantly associated with parent thoughts about seeking help, which was significantly associated with service receipt.

### Keywords

Help-seeking; Mental health problems; Parent appraisals; Service receipt; Young children; Structural equation modeling

### Introduction

The majority of young children with elevated levels of mental health problems do not receive needed services (Kataoka et al. 2002) despite research documenting the high prevalence of early emerging mental health problems (Blanchard et al. 2006; Egger and Angold 2006), the frequent persistence of psychopathology across childhood and into adulthood (Briggs-Gowan and Carter 2008; Kessler et al. 2005), and the growing number of evidence-based interventions that can address symptoms of mental health disorders (Weisz et al. 2004). Unmet mental health needs are particularly high among young, preschool-aged

children, racial and ethnic minorities, and the uninsured (Coker et al. 2009; Flores 2010; Garland et al. 2005; Kataoka et al. 2002).

For children, and for young children especially, parents are the agents first identifying problems, opening the gate to services, and ensuring continued receipt of services (Costello et al. 1998). Thus, examining factors that influence parents' decision to seek and obtain help for child mental health problems can aid in clarifying and addressing issues underlying unmet needs. Thus, exploring parent appraisal of child problems and help-seeking processes is an important step in ultimately reducing unmet mental health needs. In this study, "parent appraisals of child behavior problems" encompass child behavior scores on a standardized, norm-referenced measure, child language delays, and parent worry about child behavior problems. This latent construct, which attempts to capture the extent to which a parent considers a behavior problematic and worthy of seeking help, is used because we are interested in parent appraisal processes above and beyond child behavior scores. We use the term "mental health problems" to encompass elevated levels of externalizing problems (e.g. disruptive behavior), internalizing problems (e.g. anxiety, depression), and regulatory problems (e.g. problems related to sleeping and eating), although we are not assessing clinical status. This term is meant to capture a wide range of social-emotional/behavioral problems.

### **Help-Seeking for Childhood Mental Health Problems**

Common to many help-seeking models is an understanding that help seeking involves multiple components: an individual must first recognize that a behavior is problematic, decide to seek help, identify an action plan (e.g. determine who to seek help from) and take action (e.g. use a service) (Andersen 1995; Cauce et al. 2002; DiClemente and Prochaska 1982; Srebnik et al. 1996). Indeed, research among children (and their parents who are seeking help) has documented associations between problem recognition and service use (Pavuluri et al. 1996; Teagle 2002; Zahner and Daskalakis 1997) and between intentions to use services and service use (Spath et al. 1997). Thus, it is necessary to examine parent appraisals of child behavior, or the degree to which parents view their children's functioning as problematic, and active steps in the help-seeking process.

From an ecological systems perspective, multiple factors influence parent appraisals of child behavior and the other components of the help-seeking process, including: illness profile factors (e.g. type of problem, symptom severity); child factors (e.g. age and sex), parent and family factors (e.g. family constellation, parent well-being), sociocultural values and beliefs, and service characteristics (aspects of the mental health resources available) (Cauce et al. 2002; Sayal 2006; Srebnik et al. 1996). Additionally, motivational factors, such as parent willingness, readiness, beliefs about treatment- and self-efficacy can influence help-seeking, as can the costs/barriers and perceived benefits to seeking help (Kazdin et al. 1997; Miller and Rollnick 2002), and the availability of mental health services (Meyers 2007). Motivational factors can be especially useful in understanding why some parents recognize that a problem exists but choose not to seek help.

Godoy and Carter (2013) presented a comprehensive theoretical model for parent help seeking behavior. Figure 1 depicts a core portion of this theoretical model, with highlighted

areas denoting the factors on which the present investigation is focused. As depicted, parent appraisals of child behavior are determined in part by aspects of the behavioral problem (e.g. severity, type), child characteristics (e.g. age, sex, language delays), and parental worry about child behavior. Within this theoretical framework, parent appraisals would be expected to be associated with parents viewing a behavior as problematic and considering seeking help, which should be associated with actually receiving services. In the following section, we highlight research on the abovementioned influences on parent appraisals and on the help-seeking process more broadly.

**Characteristics of the Problem Behavior(s)**—Positive associations have been documented between symptom severity and both problem recognition and service use (Farmer et al. 1999; Haines et al. 2002; Pavuluri et al. 1996). Often closely linked with symptom severity, ratings of impairment—how much the problem interferes with the child’s functioning or family life—also predict service use (Alegria et al. 2004; Zahner and Daskalakis 1997). These findings would suggest that parents of a child with higher levels of aggressive behavior (i.e. increased symptom severity) and higher levels of impairment (e.g. expelled from daycare or has injured another child at pre-school), would be more likely to recognize the child’s behavior as problematic and seek help for the child’s aggression. Research on problem type suggests that parents of children with externalizing problems and symptoms of hyperactivity are more likely to seek and use help than parents of children with internalizing problems, such as depression and anxiety (Brown et al. 2007; Chavira et al. 2004; Pavuluri et al. 1996; Wu et al. 1999). This may be due in part to perceived parental burden (i.e. family challenges perceived as being caused or exacerbated by their child’s mental health problems, such as expenses and strains on family relationships) being lower for anxiety and depressive disorders than for other disorders, such as attention deficit hyperactivity disorder and conduct disorder (Angold et al. 1998). Disruptive and aggressive behaviors tend to be more obvious to others, such as parents and teachers, as they can create a public disruption, whereas an anxious or depressed child can more easily go unnoticed by others. Possibly due to the more public nature of externalizing problems, these types of behaviors can have more severe consequences, such as getting expelled from childcare, or preventing parents from completing necessary tasks (e.g. grocery shopping).

**Child Characteristics**—With regard to child characteristics, research has documented an association between childhood language deficits and mental health problems (Conti-Ramsden and Botting 2008; Toppelberg and Shapiro 2000). Additionally, male sex has been associated with higher levels of parent concern about child development and behavior (U.S. Department of Health and Human Services, 2005) and greater service use (Kataoka et al. 2002; Zwaanswijk et al. 2003). Sex differences in help-seeking may be particularly pronounced for externalizing problems (Zimmerman 2005). Parents are more likely to seek help (or to say they would seek help) for boys than for girls even when controlling for relevant factors, such as symptom severity (Bussing et al. 2003; Ohan and Visser 2009). It is unclear why parents appear more likely to seek treatment for boys than for girls, but limited research suggests that differences in parental beliefs about treatment efficacy (e.g. beliefs that learning assistance/special education is less effective for addressing attentional difficulties for girls than for boys) may help to explain this discrepancy (Ohan and Visser

2009). However, more research on child sex differences and help-seeking is needed, particularly with a wider range of child mental health problems.

With regard to child age, while there is substantial unmet mental health need among all age groups, higher rates of unmet need in early childhood (Kataoka et al. 2002) suggest that parents of younger children are less likely to recognize problems and seek help. Indeed, parental concerns about social-emotional and behavioral development increase during preschool (Blanchard et al. 2006) and elementary school (U.S. Department of Health and Human Services 2005) and many parents of young children exhibiting high levels of problem behaviors report low or non-existent levels of worry (Ellingson et al. 2004). Problem recognition and help-seeking may be less likely among parents of younger children because parents may be unfamiliar with or skeptical about the idea that young children can experience mental health problems, assuming that problems are normative or something the child will “grow out of” (Pavuluri et al. 1996). Additionally, with fewer contexts, such as school, in which to observe their child amongst same-age peers, to receive input about their child’s functioning, and to evaluate impairment, parents of young children may be less likely to have an adequate group to which they can compare their own child’s behavior, and they may have difficulty recognizing impairment (Carter et al. 2009; U.S. Department of Health and Human Services 2005).

**Parent Factors**—Parental wellbeing and worry about child behavior can impact parent ability to recognize a behavior as problematic and seek help for the behavior. While parents may be worried about their child’s developmental progress or functioning without necessarily recognizing that their child has a problem, this worry is likely to heighten their awareness of child functioning or lead them to closely monitor progress. Indeed, parental worry about child behavior predicts consultation with a health provider (Ellingson et al. 2004). Although not included in Fig. 1, parent depression and stress may affect parent appraisals of a behavior as problematic and subsequently impact steps in the help seeking process. Research suggests positive associations between child behavior and parental affective symptoms (Briggs-Gowan and Carter 2008; Briggs-Gowan et al. 1996; Najman et al. 2000) as well as increased cross-informant disagreement in ratings of child behavior among depressed/stressed parents (Chilcoat and Breslau 1997; Youngstrom et al. 2000). Additionally, stressful life events and parental anxiety are positively associated with speaking with a health professional about child mental health problems (Horwitz et al. 2003). Moreover, given that brief, routine screening of parent wellbeing is encouraged within child-focused settings (e.g. pediatric primary care), it is important to examine the impact of brief assessments of parent depression and stress on parents appraisals of child behavior and their willingness to seek help for child behavior problems. Parent educational attainment has also been directly associated with higher enrollment in prevention services (Spoth et al. 2000). Parents with higher levels of education may be more aware of the potential benefits of preventive mental health services or less likely to equate stigma with seeking help.

## Present Study

Understanding factors that influence parents' appraisals of child mental health problems and parental help-seeking patterns can aid clinicians and researchers in more effectively supporting parents and better addressing children's mental health problems, thereby reducing rates of unmet mental health needs. Researchers have examined associations between various factors, such as child behavior and service receipt, but we know of no study modeling multiple hypothesized steps in the appraisal and help-seeking process simultaneously. Using structural equation modeling, we examined influences on parent help-seeking, including parents' (1) appraisal of child behavior, (2) thoughts about seeking help, and (3) receipt of professional services. To maximize public health utility, this study was carried out with an ethnically diverse sample of poor, urban families.

It was hypothesized that child internalizing, externalizing, and dysregulation problems, child language delays, and parent worry about child behavior would all load significantly on a latent parent appraisal of child mental health problems construct such that the presence of mental health problems, language delays, and parent worry would indicate higher levels of parent perception of problems. It was also hypothesized that parent appraisals would be influenced by factors, such as depression and stress, as well as demographic factors, such as education. Lastly, it was hypothesized that higher levels of parent appraisals of problem behavior, (i.e. the degree to which parents appraised their children's behavior as problematic), would be associated with higher levels of parents' thinking about seeking help, as well as actually seeking help.

## Method

### Participants

Participants included English- and/or Spanish-speaking biological parents ( $n = 236$ ) of children recruited from three women infant and children (WIC) program offices in Boston, MA. To receive WIC services, families must be at or below 185 % of the U.S. Poverty Income Guidelines, which at the time of recruitment was \$40,793 for a family of four. Families that qualify for assistance obtain vouchers used to purchase specific, nutritious foods. Children were excluded from analyses ( $n = 47$ ) if they were not between the ages of 11 and 60 months ( $n = 16$ ), were missing data on key sociodemographic (e.g. child age and sex) variables ( $n = 22$ ), or if someone other than the biological parent completed the measures ( $n = 12$ ). Sociodemographic data for participants ( $n = 189$ ) are listed in Table 1.

### Procedure

Research assistants (RAs) recruited participants in the WIC office waiting rooms. Efforts were made to ensure that RAs were bilingual (Spanish/English) for two of the sites, which had large proportions of Spanish-speaking parents. Care-givers completed a 20 min paper survey, either on their own or with the assistance of the RA, about child behavior and development, caregiver well-being, and experiences with help-seeking and professional mental health services. Parents received a \$10 compensation for their participation plus a small prize for their child. A university Institutional Review Board approved the study.

## Measures

**Sociodemographic Information**—Participants responded to questions about sociodemographic factors, including their age, family composition, education level, race, ethnicity, immigration status, and proficiency in English.

**Child Mental Health Problems**—Child mental health problems were assessed using the brief infant-toddler social and emotional assessment (BITSEA; Berz et al. 2007; Carter et al. 2003), a 42-item standardized parent-report screener for assessing problems and competencies in young children. Parents rated their child's behavior in the past month on a 3-point scale (from *Not true/ Never* to *Very True/Often*). A “No opportunity” code allowed parents to indicate that they have not had the opportunity to observe certain behaviors (e.g. behavior with peers). Across several studies, the BITSEA has demonstrated acceptable internal consistency (0.79), 10–45 day test–retest reliability (0.87), and validity (Briggs-Gowan et al. 2004). For the present study, children were deemed as having elevated levels of problem behaviors if scores on the internalizing (e.g. depression, anxiety), externalizing (e.g. activity, aggression), or dysregulation (e.g. negative emotionality, sleep) subscales were >15 % cut point based on a national standardization sample.

**Parent Worry about Child Mental Health**—As part of the BITSEA, parents responded to a question to assess their level of worry about child behavior: “How worried are you about your child's behavior, emotions, or relationships?” Responses were obtained using a 4-point likert scale and were dichotomized (Not at all worried, some level of worry) due to skew.

**Language Delay**—To assess for the presence of language delays, parents responded to a *Yes/No* statement: “A professional has said my child has any developmental/language delay.” All the parents in this sample who responded “yes” indicated that their child had language delays.

**Parent Wellbeing**—We included brief measures of parent depression and stress to assess parent wellbeing. Brief measures of these constructs were included rather than longer measures given that routine assessments of parent wellbeing within the context of everyday settings (e.g. medical settings) tend to be short. Thus, including brief questions increases the real-world applicability of our findings. Additionally, we wished to minimize time demands and the burden placed on families receiving services through WIC. Parent depression and stress could have methodological implications (i.e. could have impacted parent ratings of child behavior problems on the BITSEA—manifest variable). However, the purpose of gathering data on parent depression and stress in this context was to assess their relation to the latent parent appraisals of child behavior problems variable. This variable, which is intended to capture the extent to which the parent views the child's behavior as problematic and worthy of seeking help, included BITSEA scores, child language delays, and parent worry about child behavior. As such, parental well-being is not examined as a source of methodological bias, but rather as a construct that can influence their appraisals of the child's behavior as problematic and worthy of seeking help for.

**Parent Depression:** Parent depression was briefly assessed using a two-question (*Yes/No*) Berk and Atkins (2002), which is widely used within settings, such as primary care settings: (1) “Over the past 2 weeks, have you ever felt down, depressed, or hopeless?” (2) “Over the past 2 weeks, have you felt little interest or pleasure in doing things?” Despite the brevity of the screener, endorsing either of these items indicates a threefold risk of depression (Whooley et al. 1997).

**Parent Stress:** Two questions of parental stress with strong face validity were used to evaluate parents’ negative experiences with their child: (1) “I feel too stressed to enjoy my child” and (2) “I get more frustrated than I want to with my child’s behavior.” Parents responded using a 3-point scale (from *Not true/Rarely* to *Very true/Often*). Again, these questions are likely to be used within settings such as primary care and WIC offices and are therefore important to examine in relation to parent appraisals of child behavior problems.

**Experiences with Help-Seeking and Service Receipt—**To assess *thoughts about seeking professional help*, parents were coded as having considered seeking professional help if they endorsed the question, “I have thought about talking to or getting help from the following types of people because I was worried about my child’s behavior” and if, in the subsequent question, they listed a health or mental health professional service provider. Parents were coded as *receiving services for their child’s mental health problems* if they reported having received a professional evaluation for their child’s behavior, “advice/help for parenting/disciplining,” or “special help for his/her behavior.” Only parents who endorsed receiving help (an evaluation, parenting advice/help, child services) from a health or mental health professional were coded as having received professional mental health services.

## Results

### Preliminary Analysis

Preliminary analyses were conducted using statistical package for the social sciences version 18. Prior to path analysis, relationships between variables of interest were explored using Pearson product-moment correlations, Chi square statistics, and ANOVAS. Significant relationships were noted between variables included in the model. Less than 10 % of data were missing for most study variables. For the item related to parents thinking about seeking help (“I have thought about talking to or getting help from the following types of people because I was worried about my child’s behavior”), 23.8 % of data were missing, which was likely due to parents not noticing that there was an option to select if they had *not* thought about seeking help. Independent samples *T* tests and Chi square analyses indicated that parents who were missing on this item did not significantly differ from parents who completed this item on any sociodemographic variables or most variables in the analyses ( $p$ 's >0.05). However, parents who were missing data on the variable about whether they had ever thought about seeking help had lower depression scores ( $M = 0.35$ ,  $SD = 0.65$ ) than those who had completed data on the variable ( $M = 0.76$ ,  $SD = 0.82$ );  $t [180] = -3.02$ ,  $p = 0.003$ ). Missing data was handled using the full-information maximum likelihood (FIML)



approach in Mplus 6.0. FIML has demonstrated low parameter bias with missing data rates as high as 25 % (Enders 2001; Enders and Bandalos 2001).

Structural equation modeling was conducted in MPlus 6.0. Model fit was evaluated based on the comparative fit index (CFI), for which a value of 0.9 represents “adequate” fit and 0.95 “good” fit (Hu and Bentler 1999), and the root mean square error of approximation (RMSEA), which is minimally sensitive to sample size and for which a cut-off value of <0.1 represents “reasonable” fit, 0.08 represents “acceptable fit”, and 0.06 represents “good” fit (Fan et al. 1999; Hu and Bentler 1999). The Chi square ( $\chi^2$ ) statistic is reported but was not used as a measure of fit given the use of dichotomous variables in the model. Additionally, we examined models separately for boys versus girls and younger versus older children to assess the goodness of model fit for different populations of children. Statistical comparisons of model fit across these sub-populations using Chi square difference testing was not examined given due to the polytomous nature of the variables in the model.

### Measurement Models of Parent Appraisal

To assess parent appraisals of child mental health problems, a latent parent appraisal of child behavior construct was evaluated using confirmatory factor analysis. Child behavior scores on the BITSEA, child language delay status, and parent worry about child behavior loaded significantly on the latent parent appraisal of child behavior construct (Table 2), and the model was an excellent fit for the data. Thus, parent appraisal is presented as a latent, dimensional construct with higher values indicating higher levels of parent perception of problems.

### Structural Models with Influences on Parent Appraisal and Help-Seeking Pathways

Variables considered to influence parent appraisal processes, including parent depression and stress as well as parent education levels were then regressed onto the latent parent appraisal construct. The path from parent education to parent appraisals of child mental health problems was not significant ( $p > 0.05$ ), while pathways from parent stress (0.35,  $p < 0.001$ ) and depression (0.31,  $p < 0.001$ ) to parent appraisals were significant. Parent education was removed from the model. The trimmed model had good fit for the data and pathways from parent depression and stress to parent appraisals of child behavior remained significant (Table 3).

Pathways to service receipt were then examined sequentially. First, parents’ thinking about seeking help was included in the model. Paths from parent depression and parent stress to thinking about help-seeking were not significant ( $p > 0.05$ ), while the path from parent appraisals to parent thinking about seeking help was significant (0.59,  $p < 0.001$ ). Thus, paths from parent depression and stress to parent thoughts about help-seeking were removed, and the trimmed model retained good fit for the data (Table 3), with all pathways remaining significant. Family receipt of services was then included in the model. Pathways from parent depression, stress, and appraisals to parent receipt of services were all non-significant ( $p$ 's  $> 0.05$ ), while the path from thinking about seeking help to receiving help was significant (0.36,  $p = 0.001$ ). A trimmed model in which non-significant paths were removed had good fit for the data (Table 3; Fig. 2).

To assess the applicability of models across boys and girls as well as across older versus younger children, the final model that included indirect pathways—from parents thinking about seeking help to receiving services—was examined within these four subpopulations (Table 2). With regard to sex differences, fit for the overall model was weakened when the subsample of boys was examined while fit appeared slightly improved when data were examined among girls only. For boys, although all pathways remained significant in the model, the relationship between parent stress and parent appraisals appeared attenuated. Thus, the model for boys was examined without parent stress in the model and fit appeared improved in this more parsimonious model ( $\chi^2 = 28.71$ ,  $df = 20$ ; CFI = 0.951; RMSEA = 0.067, 90 % CI = 0.000–0.118). For girls, the path from parent depression to parent appraisals was non-significant (0.23,  $p = 0.072$ ). When parent depression was trimmed, fit appeared improved in this more parsimonious model ( $\chi^2 = 20.74$ ,  $df = 20$ ; CFI = 0.995; RMSEA = 0.021, 90 % CI = 0.000–0.098).

A median split ( $Mdn = 33.0$  months) was conducted to examine differences in the model based on child age. Overall model fit appeared relatively similar when examining both older and younger children. The strength of the relationship between variables and the relative contribution of variables to the latent parent appraisal construct varied slightly across models. Most significantly, the path from parent stress to parent appraisals among older children was non-significant (0.26,  $p = .51$ ). However, when parent stress was removed, fit did not improve. ( $\chi^2 = 20.94$ ,  $df = 20$ ; CFI = 0.991; RMSEA = 0.023, 90 % CI = 0.000–0.095).

## Discussion

This study is the first of its kind to model theoretically-based help seeking behaviors for parents of young children. Findings elucidate pathways from parent appraisals of child mental health problems to thinking about and ultimately receiving help. As hypothesized, child mental health problems, developmental functioning, and parental worry were all found to contribute to parents' appraisal processes (i.e. parent perceptions of a behavior as problematic and parent awareness of child problems). Moreover, the child's behavioral profile across internalizing, externalizing, and dysregulation problems all contributed significantly and independently to the latent parent appraisal construct. Use of latent variable methodology allowed for the examination of how these parent and child factors contributed to a theoretical parent appraisal construct. The latent "parent appraisal" construct assesses the extent to which parents recognize significant behavioral problems (i.e. if rated by objective observers), assess their child's behavior as problematic despite low frequencies of behavioral problems, or do not assess their child's behavior as problematic despite high frequencies of problem behaviors. Thus, the latent parent appraisal construct is intended to capture more than just the presence of frequent behavioral problems.

The hypothesized model was based on and is supported by literature that both parent and child factors influence parent appraisals of childhood mental health problems. Findings that the severity of child mental health problems was associated with parent appraisal processes is consistent with previous research that has documented associations between increased symptom severity and increased likelihood of problem recognition/service use (Farmer et al.

1999; Haines et al. 2002; Horwitz et al. 2003; Pavuluri et al. 1996). Associations between parent appraisals and both parent worry about child behavior problems and child language delays were also consistent with previous research (Ellingson et al. 2004; Glascoe 2003; Horwitz et al. 2003).

Findings from this investigation add to the literature on the association between parent stress and depression and their appraisals of child behavior problems. As hypothesized and consistent with prior research (Briggs-Gowan and Carter 2008; Briggs-Gowan et al. 1996; De Los Reyes and Kazdin 2005; Horwitz et al. 2003; Najman et al. 2000; Richters 1992), increased levels of parent stress and depression were positively associated with the latent parent appraisal construct (i.e. perceptions of the child's behavior above and beyond frequency ratings) and, subsequently, seeking help. This may be due to parents with a more negative outlook (i.e. depressed parents) being more likely to perceive their children's behavior as problematic, especially if they are more easily overwhelmed or stressed by their child's behavior. It is important to note that we did not examine the impact of parent depression and stress on the manifest child behavior problem variables (i.e. BIT-SEA scores). Rather, we assessed the relationship of parent wellbeing on the latent parent appraisals of child behavior construct, which may or may not be correlated with actual behavior problems. There were also some potential sex differences; For parents of boys, the association between parent stress and appraisals appeared attenuated and model fit improved when parent stress was taken out of the model. In contrast, for parents of girls, the association between parent depression and parent appraisals was non-significant and model fit improved when parent depression was taken out of the model. Thus, appraisals and subsequent help-seeking behaviors may be more influenced by boys' parents' level of depression and girls' parents' level of stress. Future work that investigates these findings further would be valuable. Unlike previous research (Spoth et al. 2000), we found no association between parent education level and appraisal processes. This discrepancy between our findings and prior research may have stemmed from the fact that we used a relatively small sample of high-risk families in which there was limited variability in education level. Further research with larger, more socioeconomically diverse samples of parents would be helpful in clarifying the relationship between education and appraisals of child behavior as well as help-seeking behaviors.

Although we did not examine the indirect effects of parent appraisals on service receipt through parent thoughts about seeking help, our final model indicates that this mediational relationship may exist. Mediation effects were not assessed given that it is problematic to assess mediation using cross-sectional data (Cole and Maxwell 2007). However, our findings lay the groundwork for future studies that can use longitudinal data and more explicitly assess mediation. Findings from the present investigation, which are consistent with prior research and theory on steps in the help-seeking process (Horwitz et al. 2003; Sayal 2006; Srebnik et al. 1996), suggest that (preventive) interventions that target parent appraisal processes may have positive impacts on help-seeking and may decrease unmet mental health needs. For example, using interventions such as motivational interviewing techniques that increase parent awareness of child behavioral problems and parent concerns (e.g. by providing developmental norms regarding child behaviors), could catalyze help-seeking behaviors. Research indicates that it is feasible to use motivational interviewing-

based preventive interventions, a potentially promising leverage point for increasing parent engagement in mental health services in a variety of contexts, including within school, health care, and outpatient mental health settings (Dishion et al. 2008; Erickson et al. 2005; Shaw et al. 2006; Stormshak et al. 2010). Thus, future investigations that examine ways in which motivational interviewing can change parent appraisal processes, thoughts about seeking help, and service receipt would be useful.

Additionally, results that thinking about help-seeking may mediate the relationship between parent appraisals of child mental health problems and receipt of service suggests that increasing parent awareness of mental health services (e.g. describing the availability of services and the potential benefits of the services) and encouraging parents to consider seeking help may increase service receipt. This is consistent with the theory of planned behavior (Ajzen 1991), as well as stage-based theories of behavior change (Prochaska and DiClemente 1992), as parents who are thinking about seeking help may be approaching a stage in which they are ready to take action and contact a provider for their child's problems. Future research could assess parents' position on such a stage continuum regarding seeking help.

Findings from the present investigation should be viewed in light of the study's limitations. First, data was entirely reliant on parent reports. Future research that uses observational measures or multiple informant ratings of child behavior as well as record review to obtain information about service receipt would be beneficial. Second, information on other variables that could influence parent appraisals and help-seeking behaviors, such as explanatory models of child behavior problems (e.g. parent beliefs about the causes of children's behavior) or motivational factors (e.g. parent beliefs regarding the costs and benefits of seeking help), was unavailable. Future research on these aspects of parent cognitive processes could shed light on help-seeking behaviors. Third, nearly a quarter of the sample did not report on whether they had thought about seeking help. Although parents who did not complete this item did not significantly differ from parents who completed this item on any sociodemographic variables, parents missing these data had lower depression scores. Estimation methods used to model data FIML can account this amount of missing data, yet results may have been impacted due to the nature of the missing data. Findings that models held up relatively well across boys and girls and across older and younger children suggest that parents use similar factors (e.g. severity of child's behavior, language delays) to appraise their children's behavior problems, although differences in the strength of associations between predictors and the latent parent appraisal construct suggest that some differences in appraisal processes exist. Future research with larger samples of families and a more rigorous examination of measurement invariance across child age and sex would be beneficial.

This study sheds light on the role of parent appraisals of child mental health concerns within the help seeking process. Research that builds upon this study's limitations is needed to effectively understand and address high levels of unmet childhood mental health needs.

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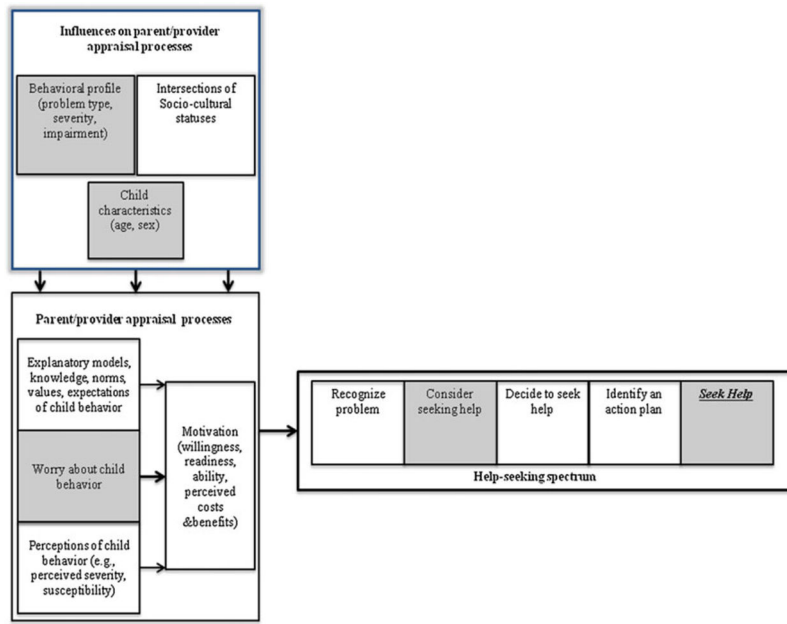
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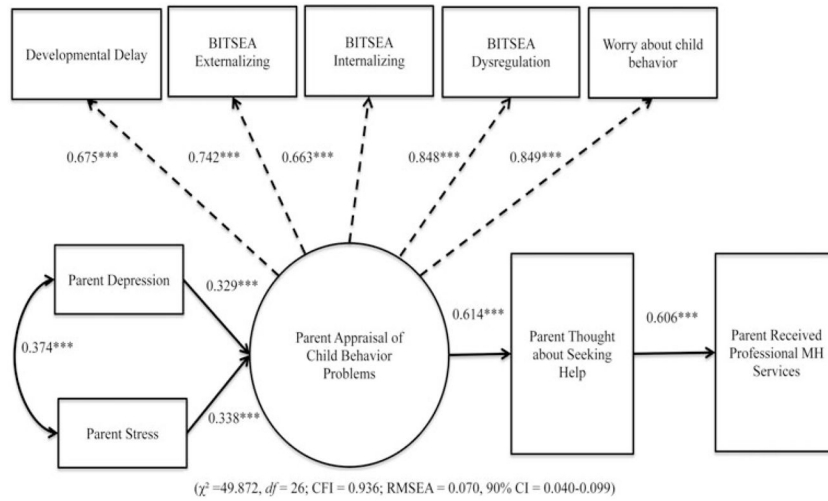
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**Fig. 1.** Parent appraisals of child behavior problems and help-seeking pathways reproduced from (\*Removed for blind review\*)



**Fig. 2.** Final model of parent appraisals, thinking about seeking help, and service receipt

**Table 1**

## Demographic data for children and parents

	Mean (M)/ %	Standard deviation/sample (SD/n)	Full sample (N)
Children			
Age (months)	33.09	28.33	189
Males	53.4	101	189
Parents			
Age (years)	28.33	6.19	159
Mothers	95.8	181	189
Marital status			171
Single	61.4	105	
Living with partner	15.8	27	
Married	22.8	39	
Education level			177
Less than high school	15.8	28	
High school degree/equivalent	39.0	69	
Post-high school courses/degree	45.2	80	
Race/ethnicity			178
Black/African American	52.8	94	
Hispanic	24.2	43	
Multiracial minority	11.2	20	
Other	5.6	10	
Born outside mainland U.S.	43.5	70	161
Knows English "very well"	67.4	118	175

**Table 2**

Fit indices for final structural model of parent help-seeking across sub-groups

Final model ( <i>n</i> )	Overall model fit				Standardized loadings on parent appraisals						On appraisals		
	$\chi^2$	<i>df</i>	CFI	RMSEA	(95 % CI)	WRMR	Int	Ext	Dys	Delay	Worry	Stress	Depression
Full (189)	49.87	26	0.94	0.07	0.04-0.10	0.81	0.66***	0.74***	0.85***	0.68***	0.85***	0.34***	0.33***
Boys (101)	54.14	26	0.90	0.10	0.06-0.14	0.77	0.75***	0.70***	0.86***	0.71***	0.94***	0.27*	0.42***
Girls (88)	27.83	26	0.99	0.03	0.00-0.09	0.64	0.57***	0.83***	0.81***	0.63***	0.63***	0.40***	0.23 <sup>f</sup>
Younger (95)	30.98	26	0.98	0.05	0.00-0.10	0.63	0.77***	0.68***	0.86***	0.67***	0.98***	0.42***	0.28***
Older (94)	31.58	26	0.97	0.05	0.00-0.10	0.63	0.59***	0.82***	0.82***	0.66***	0.75***	0.26 <sup>f</sup>	0.38***

<sup>f</sup> *p* <0.1;

\* *p* <0.05;

\*\* *p* <0.01;

\*\*\* *p* <0.001

**Table 3**  
Fit indices for measurement and structural models of parent help-seeking processes

Model	N	$\chi^2$	df	CFI	RMSEA	(95 % CI)	WRMR
CFA of parent appraisals: BITSEA scores, language delays, parent worry	189	4.72	5	1.00	0.00	0.00-0.10	0.42
Influences on parent appraisals (trimmed): Parent stress, depression	189	12.14	13	1.00	0.00	0.00-0.07	0.44
Appraisals to thinking about seeking help (trimmed)	189	23.06	19	0.99	0.03	0.00-0.07	0.56
Appraisals to thinking to receiving help (trimmed)	189	49.87	26	0.94	0.07	0.04-0.10	0.81