

# Barriers to Adherence to Child Assessment Recommendations

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**Abstract** We conducted a one-year follow-up study of child psychoeducational assessment cases to examine whether and how the assessments were helpful to families. The current report focuses on parents' views of their child's assessment as well as the parents' adherence with the written recommendations provided to them following their child's assessment. Fifty-one of 72 eligible parents whose child received an assessment in an urban, Midwest university clinic participated. Based on semistructured interviews with the parents about the assessment recommendations, we grouped the recommendations and any barriers to adherence the parents mentioned into categories, and we also rated the clarity and complexity of the recommendations. Findings showed that, on average, parents identified the assessment process as useful and attempted or fully adhered to 71.5 % of recommendations. Parents reported the lowest adherence when referrals were recommended for their child to be seen by other professionals such as a pediatrician or psychiatrist; and they cited significantly more stigma barriers for recommendations to seek counseling/therapy or psychotropic medication than for recommendations pertaining to changes at home or school. Higher parental compliance was predicted by a combination of parents reporting fewer barriers and receiving more home based recommendations. The results support the utility of psychological assessments from parents' perspectives and suggest ways in which psychologists may increase the likelihood that parents will adhere to their recommendations.

**Keywords** Assessment · Recommendations · Parent · Barriers · Adherence

## Introduction

An integrative psychoeducational assessment is an early step toward getting help for children and adolescents. By integrating information from various domains (e.g., cognitive, academic, behavioral) and informants (e.g., parent, teacher, child), an assessment strives to increase parental understanding of their child's functioning, decrease anxiety and helplessness by specifying child strengths and weaknesses, draw diagnostic conclusions, and provide intervention recommendations (Finn 2007). Though there exists a literature examining child and adolescent treatment adherence (e.g., Lindsey et al. 2014; Nock and Ferriter 2005; Pellerin et al. 2010), the process of parents adhering to assessment recommendations has received less attention. Assessment recommendations typically involve collaborating with teachers, aids, or tutors, accessing educational, self-help, or parenting resources, or modifying home dynamics (Sattler 2008). Recommendations may also include suggesting that the parent initiate professional or clinical services for themselves and their child. A review of the literature revealed only two direct examinations of parental adherence to assessment recommendations (Dreyer et al. 2010; MacNaughton and Rodrigue 2001). This gap in research has been termed a "disturbing reality" (Geffken et al. 2006, p. 499) and researchers have emphasized the need for evidence-based assessment in addition to evidence-based treatment (Barlow 2005; Hayes et al. 1987; Hunsley and Mash 2011; Mash and Hunsley 2005).

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Previous studies (Dreyer et al. 2010; MacNaughton and Rodrigue 2001) found that parents adhered to approximately 70 % of psychological assessment recommendations. These investigations interviewed parents 4 and 4–6 weeks after receiving assessment recommendations for their child and ultimately underscored the importance of the type of recommendation when predicting adherence. For example, MacNaughton and Rodrigue 2001 found that adherence was highest for professional non-psychological recommendations (81 %; e.g., referrals to pediatricians, occupational therapists, speech and language therapists), followed by recommendations geared toward school (69 %; e.g., consultation with the child's teachers, classroom behavioral plans, tutoring, remedial academic programming), self-help activities (59 %; e.g., bibliotherapy, community support groups, home-based behavioral strategies), and psychological services (47 %; e.g., individual, family, or group psychotherapy, behavior management training, additional psychological evaluation). Similarly, Dreyer et al. 2010 determined that parents receiving an ADHD-specific assessment for their child more readily adhered to recommendations encouraging self-help or consultation with a non-psychological professional than a school-based or psychological service recommendation. Other studies that examined recommendation adherence outside of the psychological assessment process corroborated adherence variability based on the type of recommendation, with more parents of children diagnosed with ADHD adhering to medication recommendations (72 %) compared to psychotherapy recommendations (54 %) (Bennett et al. 1996). Similarly, among a sample of suicidal adolescents in an inpatient hospital, 67 % of the adolescents and their families adhered to a recommendation for medication follow-up, 51 % adhered to a recommendation for individual psychotherapy, and 33 % adhered to a recommendation for parent guidance or family therapy (King et al. 1997). In addition to considering recommendation types, it is important to examine barriers influencing adherence.

Assessment recommendation nonadherence has been examined in terms of barriers, or “variables that may serve as practical obstacles in the completion of provider recommendations” (MacNaughton and Rodrigue 2001, p. 263). Two separate studies (Dreyer et al. 2010; Eiraldi et al. 2006) found that total number of barriers was the best predictor of nonadherence. Specific barriers reported by parents in these studies included limited resources, child-care difficulties, access to care issues, transportation problems, delays in insurance authorization, a lack of time to complete the recommendation within the 4–6 week follow-up period, other competing time demands, parental stress, a lack of teacher cooperation in carrying out school-based recommendations, a lack of communication between the parent and teacher, and the perception that a

recommendation would not be helpful. Methodological limitations in these studies included a follow-up period of only 4–6 weeks that might underestimate adherence, challenges in conceptualizing and measuring adherence, and utilization of primarily Caucasian samples.

As a primary gateway through which children and adolescents access treatment, several parent factors have been examined as potential enabling/inhibiting variables when predicting adherence. For example, cultural attitudes or preferences, including perceived stigma, are considered potent barriers to treatment adherence, especially when treatment involves contact with a psychologist (Munson et al. 2009; Pumariega et al. 2005). Research on parent adherence to recommendations for professional treatment specifically has found that adherence to recommended treatment is less when parents view the recommended treatment as irrelevant, feel blamed, ignored, or experience a negative relationship with the health provider, have uncertainty about the services available for their children, question the credibility of the treatment or likelihood of successful intervention, do not consider their child's behavior as problematic or warranting intervention, judge the treatment to be too costly or time-consuming, or if their child has internalizing or less severe symptoms (Bussing et al. 2003; Cunningham et al. 2000; Fonagy et al. 2002; Kazdin et al. 1997; Logan and King 2001; Miller and Prinz 2003; Morrissey-Kane and Prinz 1999; Shanley et al. 2008). Psychological distress, often exacerbated by fewer financial resources and/or lower self-efficacy, may lead parents to view recommendation adherence as another stressor to avoid (Kazdin 2000).

Other possible barriers include parental demographic characteristics, with research showing that minority children and their families were less likely to be engaged in mental health services compared to non-Hispanic Caucasian families (Freedenthal 2007; Garland et al. 2005; López 2002; Miller et al. 2008; Zimmerman 2005) with minority children having made fewer mental health treatment visits (Harpaz-Rotem et al. 2004). These trends may be because minorities, on average, have less access to health care and financial resources as well as less access to ethnically or linguistically matched providers (US Census Bureau 2003; McMiller and Weisz 1996; Weisz and Weiss 1991; Wood et al. 1990; Yeh et al. 1994). Kazdin 2000, who proposed a “barriers to treatment” model, found that stress and socioeconomic disadvantage accounted for most of the racial and ethnic differences in treatment dropout. While the authors are not aware of any current studies that consider ethnicity in regard to adherence to assessment recommendations, researchers have suggested that culturally-specific perceptions of mental health likely influence treatment adherence, with mental illness often perceived in a negative way by minority groups including Asian Americans (Hampton et al. 2007), Filipino Americans (Sanchez and Gaw 2007),

African Americans (Alvidrez 1999; Thompson et al. 2004) and Latino Americans (Alvidrez 1999).

Furthermore, another area of interest involves whether recommendation nonadherence may be due to factors related to the assessment findings, parental satisfaction with the assessment, or the presentation of the written recommendations themselves. Disconfirmation of a diagnosis or a negative assessment experience may lead parents to distrust the clinician, dismiss the results, and not adhere to the recommendations. Generally, researchers have not examined the manner in which recommendations were written by clinicians. Presumably, recommendations presented in a clear, concise manner with few technical terms and a readability level appropriate for the general public would improve parental comprehension (Miller and Watkins 2010). However, variables related to the written recommendation itself that might influence parents' receptivity, understanding, memory, and ultimately adherence to the recommendation (e.g., recommendation complexity and clarity), have not been investigated.

To further examine the utility of children's psychological assessments, we conducted a follow-up study of families one year after they received their assessment results. The purposes of this study were (a) to examine parental satisfaction with their child's assessment, (b) to explore the extent to which parents adhered to the assessment recommendations, (c) to identify barriers reported by parents, (d) to ascertain whether parent satisfaction with the assessment and experienced barriers differentially predicted recommendation adherence, and (e) to examine whether type of recommendation and type of barrier were associated. Consistent with the findings of similar studies (Dreyer et al. 2010; MacNaughton and Rodrigue 2001), we predicted that parents would report adherence to an estimated 70 % of recommendations, with higher adherence to recommendations involving a non-psychological professional or a self-help resource. Guided by the barriers to treatment model (Kazdin 2000), we predicted that the total number of barriers would be the biggest predictor of recommendation nonadherence. Other hypotheses included a negative association between recommendation complexity and recommendation adherence, as well as higher adherence when children were given a diagnosis at their initial time of assessment, given that parent motivation is often influenced by problem validation (MacNaughton and Rodrigue 2001).

## Method

### Participants

Children and parents who originally sought out and requested a psychological assessment at a Midwestern

urban university psychology training clinic (either independently or through a professional referral) were invited to participate in the follow-up study 12 or more months ( $M = 22.05$ ,  $SD = 5.94$ ) after their respective assessments. To qualify for the study, children had to have completed the Wechsler Intelligence Scale for Children—Fourth Edition and had to be seeking an assessment because of concerns related to problems with behavioral or academic functioning. Graduate students ranging from Bachelor to Masters level with 1–3 years of testing experience conducted the original standardized assessments. A second set of graduate students conducted the semi-structured follow-up interviews and assessments reported herein. In total, 72 families were eligible and were invited, and 51 (70 %) completed participation. Reasons for non-participation included lack of interest, busy schedules, and an inability to make the time commitment for research. Families who declined participation were asked to complete the satisfaction survey over the phone or via mail to assess whether or not the non-participating group differed from the participating families in their satisfaction with services. When asked, none of those who declined to participate expressed being dissatisfied with their assessment experience, however, only 4 of 21 surveys sent were returned, and thus no statistical comparison could be made. Qualitatively, non-participating families who returned surveys reported high levels of satisfaction with the evaluation that was completed at the psychology clinic.

Among the 51 family participants, children ranged in age from 8 to 16 years ( $M = 11.2$ ,  $SD = 2.38$ ) with 35 boys (69 %). Twenty-seven of the participants were African American children (53 %), 22 children were Caucasian (43 %) and 1 child identified as Hispanic. For each family, the mother participated as the primary caregiver. Among the 51 participating children, 17 (33 %) did not receive an official diagnosis, 10 (20 %) were diagnosed with ADHD, 13 (25 %) with a Learning Disorder (Reading, Writing or Math), 5 (10 %) with Mood Disorders, 1 (2 %) with Oppositional Defiant Disorder or Conduct Disorder (ODD/CD), and 5 (10 %) with another concern (e.g., enuresis, borderline IQ). Overall, 8 (16 %) children received secondary diagnoses such as ADHD (14 %) and ODD/CD (6 %). Data on socioeconomic status were not obtained.

### Procedure

The study was approved by the university Institutional Review Board. After parents completed informed consent, they participated in semi-structured interviews that asked about why they had initially come to the psychology clinic, findings from the assessment, their satisfaction with the assessment, memory of the recommendations, and their experiences adhering to the assessment recommendations.

As partial compensation for their time and travel, families were paid \$50.

## Measures

### Parent Satisfaction with Psychoeducational Assessment

In order to assess satisfaction with the assessment services, parents were asked to complete a 13-question, face valid survey using a four-point Likert scale ranging from very unsatisfied to very satisfied. Questions included “Overall usefulness of the assessment process,” “Overall quality of our service,” “Quality of the report,” and “Competence of your child’s clinician.” Cronbach’s alpha for the measure was  $\alpha = .99$ .

### Recommendation Type

There were a total of 337 numbered recommendations received by the 51 participants. The following nine category system was created to group the recommendations after preliminary review of recommendations in this sample: (a) home activities, (b) home-school integration, (c) parent education, (d) school, (e) special education, (f) extracurricular activities, (g) non-psychology referrals (e.g., speech pathologist), (h) medication, and (i) therapy/counseling referrals (see Fig. 1). These categories were then collapsed into three final categories: (a) home, (b) school, and (c) other/professional. The home category included home activities, home-school integration, and parent education recommendations. Home activities included recommendations like playing educational games; any at home monitoring of academic activities like reading, visual or other skills; any homework assignments or specific homework techniques; and any recommendation involving a routine or behavior plans. The recommendations could be targeted at the parent or the child. The home-school integration category acted as a broad classification that included recommendations targeting multiple systems, such as a suggestion to work on reading skills in order to help a child at home and school. Parent education was used for

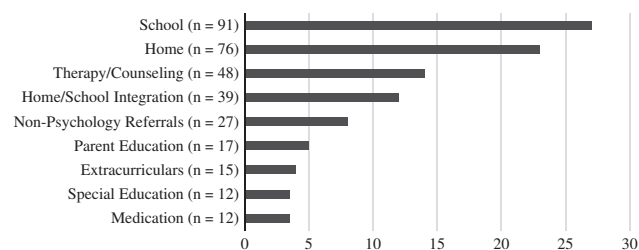
recommendations that specifically asked the parent to learn more about their child’s diagnosis, such as reading books, magazines, articles, or going online.

The school category included school and special education recommendations. School recommendations related to both parent and child involvement in the school, such as communication with teachers, tutors, taking home progress reports, or locating other help at school. This recommendation category also included accommodations to be provided by the school or teacher such as longer test-taking time, sitting closer to the board, or receiving modified instructions. Special education recommendations advised finding special education teachers or resource rooms, as well as any formal education plans (e.g., an individualized education plan (IEP) or 504).

The other/professional category included extracurricular activities, non-psychology referrals, medication, and therapy/counseling recommendations. Extracurricular activities included team sports, clubs and other organizations like karate, boy scouts, art, dance, and baseball. Non-psychology referrals included recommendations for parents to take their child to a doctor/specialist, speech pathologist, occupational therapist, etc. This category included medical professionals that do not offer mental or behavioral health counseling services. Medication recommendations specifically mentioned starting or continuing medication, which may have suggested psychiatric referral. Finally, therapy/counseling recommendations suggested therapy (individual or group) or counseling. Recommendations to see a psychologist or counselor fell under this category. Additionally, any recommendations for further assessment or reassessment fit into this category. For the purpose of statistical analyses, the number of recommendation categories was reduced from nine to the following three: (a) home, (b) school, and (c) other/professional categories. In total, 117 recommendations were categorized as home (35%), 117 as other/professional (35%), and 103 as school recommendations (30%).

### Recommendation Clarity

Clarity was coded by two raters (including the first author) using a three-point scale from 0 to 2 with a rating of “0” indicating an unclear, confusing, ambiguous recommendation. For example, an unclear recommendation may read, “To increase verbal recognition, X should be given hard work at school.” This recommendation provides no clear examples and does not leave a parent with a clear idea of what to do for their child. A rating of “1” suggested a recommendation was clear and not too confusing for parents to follow but lacked in examples and details. A rating of “2” was assigned to a recommendation that was clear, easy to understand, well detailed, and included examples.



**Fig. 1** Initial recommendation categories by percent

For instance, a clear recommendation may instruct parents to seek speech therapy and provide a location and phone number to a few places where they may find services. Rater reliability for classifying the 337 recommendations into one of three clarity categories was  $\kappa = .56$  (95 % CI, .43 to .68),  $p < .001$ . The average clarity of the report's recommendations was used in analyses with 82.5 % of recommendations ranked as clear (code = 2).

### Recommendation Complexity

Complexity refers to the number of discrete activities assumed within a given recommendation. Complexity was coded using a tally system with each tally equaling one unique, individual activity. Ratings coded by raters ranged from one to five. Specific examples for how to follow a recommendation did not qualify as an additional tally. For example, the recommendation "Maintain a bedtime by avoiding late night snacking and TV-watching," would have a complexity rating of "1" (the one recommended activity is to maintain a bedtime). An example of a recommendation with a complexity rating of "3" was: "Work on phonics over the summer with workbooks (1), ask the teacher for worksheets related to math (2), and request a tutor with specialization in reading problems (3)." To collapse complexity, ratings across recommendations were summed and a total score was assigned to each participant. Across the 337 recommendations, 76 % were rated "1," 18 % were rated "2," and 6 % were rated "3" or higher for complexity.

### Adherence

The adherence code referred to the extent a recommendation was completed. Adherence was coded on a three-point scale from 0 to 2. Parents were read a recommendation and asked "did you try the recommendation." A rating of "0" was given to families that did not adhere to the recommendation in any way. A rating of "1" was given if some evidence of adherence existed, such as an attempt (one session) or partial adherence (adhered to half of a recommendation). For example, a family that attended an intake for therapy but never returned would receive a score of 1. A rating of "2" was given if families fully adhered to the recommendation and/or there was evidence of following the recommendation for a significant amount of time (e.g., greater than one month). Rater reliability for classifying the 337 recommendations into one of three adherence categories was  $\kappa = .87$  (95 % CI, .82 to .92),  $p < .001$ . To collapse adherence in order to run analyses by participant ( $N = 51$ ), an average percent adherence score was assigned to each participant. These scores were obtained by summing a participant's adherence ratings for each of their recommendations and then dividing by the total adherence score

possible. For example, a participant with 8 recommendations (total possible adherence score of 16) who fully adhered to five recommendations and partially adhered to 1 (sum of 11) had 69 % adherence.

### Barriers

Coders also recorded the barriers described by parents in response to the question "did you try the recommendation?" If the answer was yes, parents responded to three additional questions: (a) for how long, (b) did you think this recommendation helped, please explain, and (c) would you suggest any changes to this recommendation? If the answer was no, parents responded to two additional questions: (a) why did you choose not to follow this recommendation, and (b) is there anything that would have helped you use this recommendation. Based on preliminary qualitative analysis of reported barriers in the sample, barriers fell into four distinct categories: (a) limited resources, (b) low priority, (c) stigma, and (d) relationship/personal challenges. Limited resources included limited insurance, finances, availability, and information or resources. It also included transportation problems or far distance to reach a recommended site, long wait lists delaying ability to start treatment, and unclear recommendations or the lack of a specific location to seek services. Barriers provided by parents such as "we didn't have time," "we forgot," "we felt no need for that recommendation," "we have hectic schedules," "that was inconvenient," and "we were not motivated to complete that recommendation" were categorized into the low priority category. Stigma barriers included parents reporting fear of embarrassment or any form of opposition or concern of negative consequences (e.g., through labeling) for their child through recommendation adherence. Opposition to the use of medication or psychotherapy also fell in this category. For example, one family explained that they knew the child's father was "opposed to medication," so they would not consider it. Finally, barriers cited by parents such as a negative prior experience, lack of parent-teacher communication, opposition to the recommendation from their child, and difficult, unrelated issues in their own personal lives were grouped into the relationship/personal challenges category. This category encompassed relationship difficulties whether with the child, teacher, or psychologist. For example, not getting along with their child or their child's teacher would both fall into this category.

### Data Analyses

Analyses were conducted in order to determine the degree of reliability between raters for this study. Two raters categorized all recommendations with Cohen's  $\kappa$  calculated



to examine inter-rater reliability. Rater reliability for classifying the 337 recommendations into one of the 9 categories was  $\kappa = .74$  (95 % CI, .68 to .79),  $p < .001$ . For the purpose of statistical analyses, the number of recommendation categories was reduced from nine to the following three: (a) home, (b) school, and (c) other/professional categories. Agreement between the two raters on the three collapsed categories increased to  $\kappa = .80$  (95 % CI, .75 to .86),  $p < .001$ . Disagreements were resolved through discussion and the final categories were used for analyses.

Two separate raters completed coding for recommendation clarity and complexity, adherence, and barriers. Disagreements were not discussed and as such, codes completed by the first author were used for all analyses. The intraclass correlation coefficient for average clarity across raters using the participant data set ( $N = 51$ ) was .99. Agreement between two raters on complexity among the 337 recommendations was  $\kappa = .76$  (95 % CI, .67 to .84),  $p < .001$ . Ratings were summed, and the average measures of intraclass correlation coefficient between raters ( $N = 51$ ) was .99. The intraclass correlation between raters for adherence in the  $N = 51$  data set was .99. Agreement between the two raters on barriers mentioned across the 337 recommendations was  $\kappa = .71$  (95 % CI, .64 to .77),  $p < .001$ .

## Results

All analyses were completed using SPSS 22. A linear regression using the averaged data by participant ( $N = 51$ ) assessed whether parent satisfaction with the assessment, recommendation type, and total experienced barriers differentially predicted adherence. Descriptive analyses were run to examine recommendations and parental satisfaction with their child's assessment more than a year after the assessment. Chi square analyses evaluated parental adherence to assessment recommendation types. Adherence analyses were conducted using averaged data by participant ( $N = 51$ ) as well as with data across recommendations ( $n = 337$ ). Finally, chi squares examining barriers reported by parents by recommendation type were conducted and correlations between recommendation and barrier type were evaluated.

A linear regression was conducted to assess the relative contributions of satisfaction, recommendation type (total home, school, and other/professional services), and total barriers on adherence percentage. The predictors in the model explained 36 % of the variance,  $R^2 = .36$ ,  $F(5, 43) = 4.87$ ,  $p = .001$  with total barriers negatively ( $\beta = -.62$ ,  $p < .001$ ) and home type recommendations positively ( $\beta = .33$ ,  $p = .02$ ) significantly predicting adherence.

Review of participant satisfaction surveys revealed satisfaction ranging from 2.23 to 4.00 on the 4-point scale ( $M = 3.62$ ,  $SD = .37$ ). Satisfaction was high among both Caucasian ( $M = 3.68$ ;  $SD = .26$ ) and African American ( $M = 3.56$ ;  $SD = .42$ ) participants and percent adherence was not significantly different between Caucasian ( $M = 67.0\%$ ;  $SD = .21$ ) and African American ( $M = 57.5\%$ ;  $SD = .21$ ) participants ( $t(48) = 1.51$ ,  $p = .14$ ). The average percentage of recommendations fully (code of 2) adhered to by parents was 61.7 % ( $SD = .21$ ). There was no significant association between satisfaction with the assessment and adherence,  $r(49) = .10$ ,  $p = .51$ .

Participants received between 2 and 16 recommendations ( $M = 6.61$ ,  $SD = 2.68$ ) and endorsed between 1 and 14 barriers ( $M = 4.98$ ,  $SD = 3.06$ ). There was no association between number of recommendations a family received and their average adherence ( $r(51) = .02$ ,  $p = .92$ ); however, adherence was significantly associated with the number of barriers parents mentioned,  $r(51) = -.53$ ,  $p < .001$ . There was a nonsignificant statistical trend when we examined the differences in adherence between parents whose child was and was not given a diagnosis  $t(49) = 1.83$ ,  $p = .07$ . Surprisingly, examination of means for this trend revealed that parental adherence was 58.0 % ( $SD = .22$ ) for children who were given a diagnosis vs. 69.4 % ( $SD = .19$ ) for children who did not receive a diagnosis.

The next group of analyses were conducted at the level of each of the 337 individual recommendations. Parents were rated as partially (code of 1) or fully (code of 2) adhering to 71.5 % of the 337 assessment recommendations with 51.9 % of recommendations rated as 2 (fully adhered). A chi square examining adherence by the three recommendation categorization was significant ( $\chi^2(4, n = 337) = 48.00$ ,  $p < .001$ ) with a rate of 35 % full adherence for the other/professional recommendation type vs. 64.1 % for school and 58.1 % for home recommendation types (see Table 1). Percent adherence using the nine recommendation type categorization is presented in Fig. 2. Meanwhile, chi squares examining adherence by complexity ( $\chi^2(8, n = 337) = 14.11$ ,  $p = .08$ ) and clarity ( $\chi^2(4, n = 337) = .48$ ,  $p = .98$ ) were not significant.

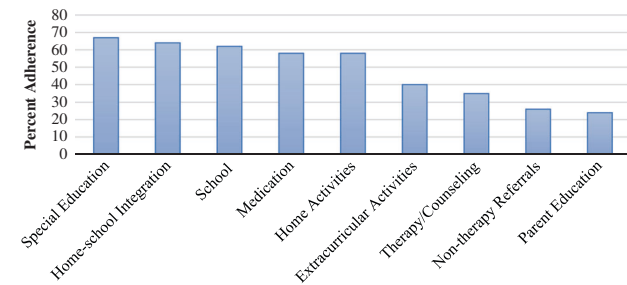
Parents spontaneously mentioned between 1 to 14 barriers ( $M = 4.98$ ,  $SD = 3.06$ ) in the semi-structured interview when describing their experiences with recommendations. These barriers were coded into four distinct categories with participants endorsing limited resource barriers for 68 recommendations (20.2 %), priority barriers for 74 recommendations (22.0 %), stigma barriers for 19 recommendations (5.6 %), and relationship/personal challenges barriers for 67 recommendations (19.9 %). A chi square examining adherence by the presence of barriers was significant ( $\chi^2(2, n = 337) = 138.51$ ,  $p < .001$ ) with higher "full" adherence for recommendations with no parental reported barriers (see

**Table 1** Results of chi square test for adherence by recommendation type

Adherence	Home	School	Other/Professional
None	18 (15 %)	18 (18 %)	60 (51 %)
Partial	31 (27 %)	19 (18 %)	16 (14 %)
Full	68 (58 %)	66 (64 %)	41 (35 %)

Note.  $\chi^2 = 48.00^*$ ,  $df = 4$ . Numbers in parentheses indicate column percentages.

\* $p < .001$



**Fig. 2** Percent adherence by recommendation type

Table 2). It is noteworthy that of the 337 recommendations, parents reported no barriers for 149 (44 %). To examine when stigma was most likely to be mentioned by parents, a chi square examining the relation between the presence/absence of stigma and the three recommendation categories was conducted and found to be significant ( $\chi^2(2, n = 337) = 13.53, p < .001$ ). Most of the parents' reported stigma arose when the recommendation was to seek professional help (73.7 % compared with 15.8 % for home recommendations and 10.5 % for school recommendations). Similarly, a chi square conducted to examine whether parents reported greater stigma for certain recommendation types was significant ( $\chi^2(8, n = 337) = 33.49, p < .001$ ) with 47.4 % of stigma barriers cited for therapy/counseling recommendations and 15.8 % for medication recommendations.

**Discussion**

This study examined several aspects of child assessment from the parent-consumers' point of view, including satisfaction, recommendation type, barriers, and adherence, more than one year after their child's psychological assessment. We found that parents saw the assessments as helpful and reported high satisfaction with the assessment process and results. In addition to the high satisfaction ratings, parental adherence was also high with a rate of 71.5 % for partial or full adherence. For families with higher reported barriers, adherence rates were significantly lower,

**Table 2** Results of chi square test for adherence by barrier identification

Adherence	No barriers	Barriers
None	2 (1 %)	94 (50 %)
Partial	18 (12 %)	48 (26 %)
Full	129 (87 %)	46 (24 %)

Note.  $\chi^2 = 48.00^*$ ,  $df = 4$ . Numbers in parentheses indicate column percentages.

\* $p < .001$

suggesting that even when satisfied with their assessment experience, barriers still influenced recommendation adherence. Based on these findings, we recommend clinicians proactively assess for potential barriers (i.e., resources, priority, stigma, and relationship/personal challenges) during the assessment process so overcoming potential or anticipated barriers can become part of the feedback when discussing recommendations with clients. Research on engagement in child therapy indicates that families who openly discuss and problem solve potential barriers with their clinicians show increased treatment adherence (King et al. 2014). Efforts to increase adherence proactively may be more effective preventatively than waiting until nonadherence ensues (Schwalbe et al. 2012). Moreover, certain types of recommendations (e.g., child psychotherapy and medication) were less likely to be adhered to and were also more likely to elicit stigma. A larger sample size that consists of more children with diagnoses may aid in better understanding the role of stigma in the assessment process and may aid in increasing the generalizability of these results across children with various presenting problems.

Perhaps because satisfaction and adherence were generally at high levels (i.e., restricted variance), satisfaction was not associated significantly with adherence to recommendations. However, adherence was associated with the number of barriers and total home recommendations, suggesting that both barriers and recommendation type contributed to adherence. We were surprised to see that providing complex or unclear recommendations did not detract from parent adherence. A more direct question regarding recommendation clarity may provide researchers with a better understanding of whether or not a parent perceived the recommendation to be clear. Similarly, parents who received recommendations with multiple pieces appeared to have been able to break the recommendation down and adhere to its multiple parts. While we found that parents were able to understand and unpack the recommendations offered, further research is needed investigating both recommendation clarity and complexity in order to understand their role in recommendation adherence.

Surprisingly, we found a trend such that adherence was lower for families whose children received a diagnosis. Perhaps this was because parents of children who received a diagnosis may have been inclined to believe that psychosocial recommendations would not have been as helpful. Contrastingly, failing to receive a diagnosis did not appear to detract parents from adherence. It may be that parents of children who were not diagnosed were more receptive to psychosocial recommendations as opposed to parents of children with a diagnosis that may suggest biological root causes for problem behaviors or carry stigma. Further research is needed to understand how parents react to their child's diagnoses and how their reactions may have an impact on their interactions with their child. Additionally, our results indicated that adherence rates did not differ between Caucasian and African American participants. Given the lack of literature on adherence to assessment recommendations across race and ethnicity, these results provide an initial look at race and adherence. However, more research is needed to understand whether this finding holds true in larger and more diverse samples and what the potential implications may be for practice.

This study has a few notable limitations, including our measure of adherence. Though the dimensional coding system allowed for a closer look at parental adherence, the partial adherence code (rating of one) may be biased toward indicating higher rates of adherence (i.e., a family who attended one therapy session received a partial adherence score despite not consistently attending therapy). Future studies may consider establishing a clear cutoff of adherence (e.g., a certain number of therapy or tutoring sessions). Parental adherence to assessment recommendations was solely measured with a semi-structured, face valid interview. Although the dimensional rating of adherence allowed for a somewhat nuanced assessment, we see a need for further efforts to validate parent-reported adherence data with independently verifiable measures (e.g., checking with providers, teachers, or other family members) to see whether the suggested recommendations were followed. Also, what it means to "adhere" varied by type of recommendation and was not clearly comparable. For instance, consulting with a teacher is not equivalent to beginning psychotherapy, reading a parenting book or pursuing a change in a child's medication. That is, adherence to some recommendations takes significantly more time and effort than adherence to others, and some recommendations will be a better or easier fit with some parents' personality, style, or preferences than others. Furthermore, the number of recommendations varied based on the needs of the child and family and the styles of the clinician-supervisor dyads. However, a parent who adhered to one of one vs. nine of nine recommendations received the same

percentage score for adherence. On the other hand, we did not find a relation between number of recommendations and adherence.

A further caveat to interpreting the adherence findings of this study relates to demand characteristics. Specifically, a parent who did not adhere to the assessment recommendations may have felt a greater need to defend, justify, and explain their poor adherence by identifying more barriers than parents who were adherent. Similarly, the way barriers were assessed during follow-up may have limited the number of barriers acknowledged by parents who noted yes to "did you try the recommendation." A specific item such as "Tell us about the barriers you encountered" asked of all parents, not just those who denied adherence, is suggested for future research in this area. Moreover, professionals need to respect, if not trust, parents' judgments about what their child's needs are at any particular time, which may be different than what is recommended by a psychologist. Furthermore, the lengthy follow-up interval may have had a downside, as some degradation may have occurred in parents' memories after a year. It is possible that our participants struggled to accurately inform us, both regarding their levels of satisfaction with the assessment process, and in the extent to which they actually adhered to recommendations, especially initially.

A related type of limitation of the study refers to the measurement of satisfaction. Parents were interviewed about satisfaction in a semi-structured format by a set of face valid questions developed by our research team. Future investigations could also include validated measures of satisfaction, such as the client satisfaction questionnaire (CSQ-8; Larsen et al. 1979). In order to prevent a bias toward satisfied consumers completing the study, we gave everyone, including those who declined participation, an opportunity to indicate their satisfaction. Four parents who declined participation in the follow-up study reported high satisfaction with their assessments, yet it is unknown how satisfied the remaining families were and replication is needed to understand this fully. Moreover, it should be noted that parents paid a significantly reduced fee (i.e., some as low as \$100) for their assessments at the training clinic. Consequently, it is unclear whether higher costs would have influenced the parents' satisfaction ratings. Additionally, given the increased likelihood for socially desirable responses for compliance, future research may consider comparing compliance rates based on an interview vs. responses on a blinded questionnaire. We hope the current study encourages further research on factors that contribute to customer satisfaction with assessment. Similarly, due to the inability to compare codes between the two raters for recommendation clarity, complexity, and adherence, the current study utilized ratings completed by the first author. Future investigations should aim to ensure separate



coders compare responses and reach consensus on any disagreements.

Finally, it is noteworthy that the sample size for this study was only 51 families and a larger sample would increase statistical power. Although families in this study were seeking services for a wide variety of presenting problems, the sample included only mothers. Interviewing fathers would also be informative. Including more details about family socioeconomic status (e.g., parent education and income) would have added to our understanding of adherence and barriers as well. We encourage future investigations to gather this information as well as information about how the child responded to recommendations and what role parent functioning played.

Notable strengths of our study included interviewing a self-referred, general, clinical sample from an urban area with a variety of presenting concerns after a year or more follow-up interval. Additionally, satisfaction was rated highly and our dimensional rating of adherence provides a framework for operationalizing adherence. Although assessing satisfaction and adherence are important first steps, in order to further understand the assessment process, future research needs to operationalize the clinical utility of assessment and understand the degree to which assessments contribute to treatment outcomes. Research on evidence-based practice has been focused largely on interventions while ignoring assessment (Barlow 2005; Hayes et al. 1987; Hunsley and Mash 2011; Mash and Hunsley 2005). Instead, assessment research has focused primarily on the reliability and validity of assessment measures. Nonetheless, preliminary findings suggest that psychological assessments are positively therapeutic (Poston and Hanson 2010). We call for an increasing shift in assessment research to examine the utility of assessment. Such efforts will put psychologists in a better position to know when and to what degree assessments are useful and how their utility can be increased. When parents, children, and clinicians agree on diagnoses, research suggests therapy is more likely to be successful (Hawley and Weisz 2003). Consequently, psychological assessments would seem to be an important first step in developing consensus before formal psychotherapy or other interventions begin.

Our study has a number of other clinical implications for children and families receiving a psychological assessment. First, we recommend that clinicians attend to the types of recommendations being provided to families and consider whether recommendations are linked to stigma or other barriers for the client. To help energize parents to complete recommendations and increase parental engagement in seeking child psychotherapy, future studies may consider the use of motivational interviewing techniques, psychoeducation, problem-solving, and therapeutic assessment (Finn 2007; Miller and Rollnick 2013). For instance,

clinicians may ask parents how motivated they are to complete each recommendation. Moreover, during the feedback, clinicians can integrate psychoeducation on child therapy including when, how and for what it is effective. This rationale may provide families with information and can aim to decrease the stigma associated with beginning psychotherapy. In addition, other potential barriers and concerns regarding seeking treatment could be explored (e.g., insurance issues, cost, transportation), followed by the identification of possible solutions to those barriers. Similarly, assessing motivation and barriers during a post assessment phone call may help set families up for success.

#### Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no competing interests.

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