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Jeffrey D. Shahidullah PhD

*Rutgers University - New Brunswick, NJ and Rutgers Robert Wood Johnson Medical School - New Brunswick, NJ,*  
js2326@gsapp.rutgers.edu

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Primary Care Management of Children and Adolescents with ADHD: An Integrated Behavioral  
Health Solution?

Jeffrey D. Shahidullah, PhD

Rutgers University and Robert Wood Johnson Medical School

Corresponding Author: Jeffrey D. Shahidullah, Ph.D., Graduate School of Applied and  
Professional Psychology, 152 Frelinghuysen Rd., Piscataway, NJ 08854, Phone: 848-445-3981,  
Email: [js2326@gsapp.rutgers.edu](mailto:js2326@gsapp.rutgers.edu).

## Abstract

Attention-deficit/hyperactivity disorder (ADHD) is a common neurodevelopmental condition that affects children and adolescents. Treatment guidelines of the American Academy of Pediatrics (AAP) recommend that stimulant medication and/or behavioral modification approaches be used in managing this chronic condition. Unfortunately, research suggests that the current standard of medical care consist largely of stimulant medication used in isolation and that behavioral modification treatments are largely inaccessible to families of children and adolescents with ADHD. This stems from the fact that the primary care clinic typically serves as the first point of contact for patients and families with behavioral health concerns, such as ADHD, and the fact that families face barriers when attempting to access behavioral health specialists (i.e., social workers, counselors, psychologists) such as stigma, transportation/location barriers, and reluctance to seek care outside of the “primary care medical home”. Fortunately, a recent systematic review (Shahidullah, Carlson, Haggerty, & Lancaster, 2018) identified models which integrate behavioral health providers into the primary care clinic to provide care in a way that side-steps many of the access barriers that families face when seeking out behavioral health care. These models demonstrate promise in increasing access to evidence-based treatments, such as behavioral modification, for ADHD. This is important as there are numerous limitations to the use of stimulant medication such as side/adverse effects, lack of long-term efficacy studies, and family reluctance to use this treatment. This commentary discusses implications for these integrated behavioral health models in providing a solution to the current standard of primary care management of children and adolescents with ADHD.

*Keywords:* ADHD, integrated care, pediatrics, primary care, mental health

## Primary Care Management of Children and Adolescents with ADHD: An Integrated Behavioral Health Solution?

Most children and adolescents seeking help for behavioral health problems are seen in the context of community-based primary care (Reiger et al., 1993). The primary care sector has long been considered the “de facto” behavioral health delivery system as estimates suggest that 50-70% of patients seen in primary care have referral concerns pertaining to their mental or behavioral health (Belar, 2008; Gatchel & Oordt, 2003). ADHD is one of the most common behavioral health conditions for which patients seek treatment (Leslie, Rappo, Abelson, Jenkins, & Sewell, 2000), with more than 75% of these office visits occurring within primary care (Zarin et al., 1998).

Primary care physicians (PCPs; pediatricians, family physicians) have typically managed ADHD. This is due to several reasons which include the lack of specialty behavioral health providers such as child and adolescent psychiatrists (Kim, 2003), poor follow-through by patients to specialty providers when referrals are made (Cummings & O’Donohue, 2011), and healthcare reimbursement structures that incentivize PCPs for managing behavioral health conditions “in-house” (Meadows et al., 2011). However, PCPs reliably report that they lack training in managing behavioral health conditions (Horwitz et al., 2015; McMillan, Land, & Leslie, 2017). When PCPs do report that they are confident in their knowledge of evidence-based treatments, including behavioral therapies, they report that time limitations make it difficult to implement those treatments (Hampton et al., 2015). Thus, PCPs largely rely on stimulant medications as a primary form of treatment (Epstein et al., 2014). Leslie et al.’s (2006) study suggested that these factors (training and time limitations) contribute to the finding that the standard of ADHD management in primary care falls short of the practice guidelines of the

American Academy of Pediatrics (AAP). The AAP (2011) treatment guidelines for ADHD indicate that both stimulant medication and behavioral treatments are considered as potential evidence-based options for management of ADHD in school-age children.

As a way to improve adherence to evidence-based treatment guidelines of the AAP, a number of models have been developed which integrate behavioral health providers (i.e., social workers, care managers, psychologists) into the primary care medical home to deliver behavioral treatments for ADHD. A recent systematic review (Shahidullah, Carlson, Haggerty, & Lancaster, 2018) found that this integrated behavioral health (IBH) approach effectively serves to side-step many of the barriers that pressure PCPs in to delivering medication-only treatments to children and adolescents with ADHD. In turn, these IBH models offer a relatively feasible method of increasing patient access to behavioral therapies for ADHD. This commentary aims to (1) highlight key limitations of the current standard of medical care (SMC) in terms of the lack of adherence to evidence-based guidelines of the AAP for managing ADHD, and (2) highlight key advantages that IBH models may offer in providing improved adherence to AAP guidelines, particularly regarding behavioral treatment approaches.

### **The Current Standard of Medical Care for ADHD**

Research has acknowledged that standard medical care (SMC) for ADHD includes PCP overreliance on medication, often as the single form of therapy (e.g., Epstein et al., 2014; Hoagwood, Jensen, Feil, Vitiello, & Bhatara, 2000; MTA, 1999). If medication is not clinically indicated or preferred by families, PCPs then typically refer out to a specialty provider for treatment. When services are referred out it may be costlier for patients as insurance companies may be reluctant to pay for specialty providers and have typically built in incentives for PCPs to treat “in-house” (Cummings & O’Donohue, 2011). Many PCPs find it difficult to find competent

specialty behavioral health providers to refer out to as the shortage of child and adolescent psychiatrists results in long appointment wait-times (i.e., 3 to 6 months; Kim, 2003). While the available workforce of other behavioral health providers such as licensed clinical social workers, licensed professional counselors, and licensed psychologists is much more robust, families still face difficulties in initiating and maintaining contact with these service providers. Roughly only a quarter of patients follow through with these externally provided services due to access barriers such as stigma, transportation/location issues, and reluctance to seek care outside of the medical home (Cummings & O'Donohue, 2011). Consequently, patients can be seen more quickly and feasibly in primary care which has led to most stimulant medications being prescribed by PCPs, and not psychiatrists. However, stimulant medication does not appear to be a treatment modality that is generally preferred or deemed to be "highly acceptable" by parents and families, particularly when compared to behavioral treatments. Research examining parent acceptability of behavioral and medication treatments for ADHD has consistently found behavioral treatments as more acceptable (Johnston, Hommersen, & Seipp, 2008; Summers & Caplan, 1987; Wilson & Jennings, 1996). Given parental views regarding the lack of acceptability of medication as a treatment for ADHD, it is not surprising that many parents demonstrate reluctance to begin a medication trial for their children, and those that do start a trial often discontinue the treatment prematurely.

In a parent survey of children with ADHD who recently initiated a medication trial, 42% of parents reported their child discontinued medication within one month of initiation, 33% within 2 to 3 months, 21% within 4 to 6 months, and only 4% continued the regimen longer than 6 months (Toomey et al., 2012). Parents cited medication side effects (62%) and inadequate effectiveness (34%) as primary reasons for discontinuation. This study also inquired about

parental attitudes regarding ADHD medication usage, and found over half of participants reported to worry about long-term medication effects (55%) and believed ADHD medications were overprescribed (58%). In another parental attitudes study of children ( $n = 48$ ) diagnosed with ADHD from outpatient primary care and mental health clinics affiliated with a large university hospital, only 29% of parents believed medication was necessary for treatment (dosReis et al., 2009).

In addition to parent surveys, several large insurance claims analyses have been published which provide strong indirect indicators of parental reluctance for long-term medication use. For example, Winterstein and colleagues (2008) analyzed Medicaid insurance claims of over 40,000 children with ADHD and identified that more than half (51%) of children who received a medication prescription were not taking the medication one year later. In another study investigating stimulant medication utilization trends in a sample of 11,698 children prescribed with at least one stimulant, roughly one fourth (24%) of those children never filled a second prescription (Habel, Schaefer, Levine, Bhat, & Elliot, 2005).

Even when a stimulant medication treatment is a preferred or “acceptable” option for parents in the management of their child or adolescents’ ADHD, research investigating the clinical care of ADHD indicates that the current standard of prescribing does not adhere to AAP (2011) guidelines (Epstein et al., 2007; 2008; 2013; 2014; Rushton, Fant, & Clark, 2004). Specifically, these guidelines focus on specifying treatment goals, using evidenced-based treatment modalities tailored to the patient’s age and developmental level, and providing systematic follow-up using parent and teacher rating scales for assessing treatment response. In a study evaluating PCP adherence to AAP guidelines, Epstein et al. (2007) assessed outcomes of 377 children with ADHD being treated by either (1) pediatricians randomly assigned to a group

receiving training on AAP guidelines through a consultation service promoting the use of titration trials and periodic monitoring during medication maintenance, or (2) pediatricians randomly assigned to a group providing “treatment as usual”. Children treated by the consultation group demonstrated significant behavioral improvement compared with the treatment as usual group and were more likely to be receiving medication at 12 months (73 vs. 41%).

The Multimodal Treatment of ADHD (MTA, 1999) study included a group receiving carefully prescribed and titrated medication (i.e., MTA-medicated group) and a group receiving medication through community care (i.e., treatment as usual). Patients receiving treatment as usual received less frequent and shorter office visits with their providers compared with patients in the MTA-medicated group. Consequently, community-treated patients were less likely to receive medication titration trials to determine optimum therapeutic dosage. Despite both groups receiving the same medication (i.e., methylphenidate), the prescribing practices were considerably different, which significantly affected treatment outcomes. Though medication management is the dominant treatment modality for ADHD within community-based settings (Hoagwood, Kelleher, Feil, & Comer, 2000), these results demonstrate that PCPs’ treatment practices are not commensurate with treatment as intended within the AAP (2011) guidelines.

It appears that SMC for ADHD often fails to establish the lowest therapeutic dosage through the use of systematic titration algorithms (MTA, 1999). Also, PCPs rarely conduct follow-up evaluations of treatment response using home and school data (MTA, 1999). In a feasibility study of the Children’s Medication Algorithm Project for ADHD, researchers found that teacher rating data were only sporadically collected (study obtained complete rating scale data from only 34% of teachers of students tracked in study) and did not appear to be valued by



physicians for stimulant titration purposes (Pliszka et al., 2003). This practice does not adhere to *Recommendation 5* of AAP (2011) treatment guidelines stating that clinicians should establish a plan for periodic monitoring of treatment response through teacher data (e.g., teacher periodic behavior ratings/narratives, telephone conversations) obtained through active and direct communication with the school. The MTA (1999) study showed the value of teacher information as a supplement to parent information in stimulant titration (Greenhill et al., 2001; Vitiello et al., 2001). This finding confirms that SMC for children with ADHD in community-based practice falls short of AAP (2011) consensus guidelines. This is important as common stimulant adverse effects include appetite loss, abdominal pain, headaches, and sleep disturbance (AAP, 2011).

Finally, from a health systems' administration perspective, despite the increased prevalence of primary care appointments that include behavioral health concerns (Belar, 2008), research has questioned the financial sustainability of models which require PCPs to deliver comprehensive care for non-medical concerns. In a study evaluating PCPs' time and billing requirements in providing behavioral health service in primary care based on appointment length and insurance reimbursement, Meadows et al. (2011) concluded that financial disincentives are placed on PCPs when addressing behavioral health concerns. This study found that while behavioral health issues have a major effect on PCPs time spent in patient visits (9 minutes for medical vs. 20 minutes for behavioral health appointments) and number of codes billed (1 code for behavioral health vs. up to 10 codes for medical visits), providers are inadequately reimbursed for these services. Addressing this lack of behavioral health service reimbursement, Feldman et al. (2006) highlight the role that insurance company reimbursement practices play. For example, insurance companies typically sub-contract care specifically for mental and behavioral health concerns to a separate insurance company which offers behavioral health plans

(i.e., often referred to as behavioral health “carve-outs”). Consequently, adequate PCP reimbursement may be difficult to obtain when these providers are not in network within these behavioral health plans. As a result, this factor provides yet another barrier towards PCPs carrying out ADHD management practices which correspond with the AAP (2011) guidelines.

In sum, while SMC provides service for many children that may otherwise not receive any form of treatment, this standard of care calls into question whether the long-term benefits (which long-term efficacy studies do not yet exist) outweigh the risks involved with receiving stimulant medication-only treatment. This risk-to-benefit payoff is questionable when patients are not provided with other treatment options such as behavioral therapies delivered by trained clinicians (i.e., social workers, counselors, psychologists). The risk-to-benefit payoff consideration pertains to the ratio of relative therapeutic gain (lessened symptomatology, improved functional outcomes in social, academic, and/or occupational domains) in the context of the “costs” of a therapy (financial costs, logistical or time costs, side/adverse effects). Considering the “first do no harm” ethical mantra, children should be provided with treatment options that offer the lowest risk of side and adverse effect risk in relation to expected treatment gains. It is clear that new treatment models that better adhere to AAP (2011) guidelines and improve the quality of care received by children with ADHD in primary care are needed. The following section highlights key findings within the published literature which suggest that integrated behavioral health models may represent a promising alternative to managing ADHD in children and adolescents.

### **An Integrated Behavioral Health Solution?**

Cummings and O’Donohue (2011) acknowledge that a critical design flaw in the current healthcare system is the lack of behavioral health services in medical settings. With recent

systems-level healthcare reforms (e.g., Patient Protection and Affordable Care Act [ACA; P. L. 111-148]) and the evolution of the Family-Centered Medical Home model (Litt & McCormick, 2015), there has been a push for the integration of behavioral health services within primary care. Integrated behavioral health (IBH) care may offer an efficient means for interdisciplinary patient care involving PCPs and behavioral health providers (i.e., BHPs; e.g., clinical social workers, counselors, psychologists) that may potentiate numerous patient benefits (APA, 2013; Gatchel & Oordt, 2003; Strosahl, 2005). The integration of behavioral health services with medical care allows for increased treatment options (e.g., greater access to behavioral treatments), safer treatment options in comparison with psychotropic medication (i.e., there are no physical side-effects associated with use of behavioral treatments), more effective delivery of evidence-based behavioral treatments with BHPs trained specifically in these therapies, and increased treatment adherence as the need for external referrals are eliminated and patients are treated “in-house” (Cummings, 2007; O’Donohue & Cummings, 2012).

While integrated care as a delivery model has been used in various forms since the 1960s when Kaiser Permanente experimented with this service approach in their clinics, numerous models of integrated care have been developed and implemented more recently (Asarnow et al., 2015; Blount, 1998; Gatchel & Oordt, 2003; Strosahl, 2001). These models differ in the degree and method to which providers collaborate among each other, interact with patients, and delegate clinical care decision-making responsibilities. Typically, the PCP works with BHPs within a consultative or short-term treatment role. The BHP, in the context of an IBH model, receives patient referrals from the PCP (i.e., “warm handoff”) when specialty behavioral health services are indicated and, in turn, provides brief evaluation and targeted interventions (typically either same day or soon after the initial visit). The focus of clinical care within IBH is problem-focused

and family-centered treatment, whereby patients receive evidence-based skills training needed to address behavioral health concerns in a time-limited capacity (Bryan, Morrow, & Appolonio, 2009). These IBH models offer increased coordination of patient care (e.g., shared documentation in the patients' Electronic Health Record, frequent discussions regarding evaluation and treatment planning given the co-location of providers), which in turn have demonstrated improved patient and provider satisfaction, adherence to treatment regimens, and clinical outcomes for many patients and problem types (Asarnow et al., 2015; Blount, 2003; Katon et al., 1995). While most systematic evaluations of IBH models stem from the adult treatment literature, these findings provide direction for efforts to integrate care for behavioral health conditions in children and adolescents.

Regarding the argument for the enhanced safety in opting for behavioral therapies over stimulant medication, rigorous research has been conducted to demonstrate the efficacy of behavioral approaches to treating ADHD in children (Conners et al., 2001; Fabiano et al., 2009; Pelham, 1999; Pelham & Fabiano, 2008; Pelham et al., 2016; Pelham, 2008). This literature demonstrates that ADHD responds effectively to behavioral strategies alone, and that when a combined (behavioral modification and stimulant medication) approach is warranted, that introducing behavioral strategies first can improve clinical outcomes (Pelham et al., 2016; Pelham, 2008). This is important as there are no side/adverse effects associated with use of behavioral strategies, unlike stimulant medication. Further, in terms of treatment sequencing, there is emerging literature to suggest that when behavioral options are implemented first, that lower dosages of stimulant medications are eventually required (Pelham et al., 2016; Page et al., 2016). In addition, when a combined treatment approach is used with the BHP delivering behavioral treatment, this serves as efficient way to have close follow-up with a provider for the

purposes of monitoring and evaluating the patients' response to treatment. This is an important component of prescribing stimulant medication in a safe manner and a way to adhere to APA (2011) guidelines.

One example of an IBH model is the *Buffalo Treatment Algorithm for ADHD* (Pelham, 2007). This model uses an algorithm whereby BHPs receive patient referrals from PCPs. They then conduct brief assessment and focused evaluation during a same day visit with the patient. Treatment typically consists of evidence-based parent management training, child social skills training, and an intervention involving the school (e.g., daily behavior report card). If patients do not make adequate progress (typically after 4-6 weeks of receiving behavioral modification strategies), they are then referred back to their initial/referring PCP for a medication evaluation appointment. If medication is eventually indicated, patients are instructed to continue working with the BHP within a combined treatment approach (behavioral therapy in conjunction with stimulant medication). Though designed for implementation in primary care, this program benefits from grant funding and requires multiple BHPs to administer, which may not be feasible from a financial cost perspective. However, this type of study has significant implications for potential financial savings in the long term by offering behavioral skills training that tend to be more lasting and generalizable compared to medication monotherapy (Shahidullah, Voris, Hicks, & Carlson, 2014). As further support for integrating behavioral health services into primary care, several studies examining the relative cost-benefit of IBH models have demonstrated their cost-effectiveness in treating a variety of conditions such as depression (Katon et al., 1995; Lave, Frank, Schulberg, & Kamlet, 1998; Pyne, Rost, Zhang, Williams, Smith, & Fortney, 2003; Schoenbaum et al., 2001; Simon et al., 2001) and anxiety (Katon, Roy-Bryne, Russo, & Cowley, 2002; Chaffee, 2009). For example, in a meta-analytic review of 91 published medical cost-

offset studies evaluating the impact of psychological interventions (e.g., psychiatric consultation, brief psychotherapy, biofeedback/relaxation training, behavioral health psychoeducation) within medical services, Chiles et al. (1999) found cost-savings of about 20% when behavioral treatments were used. While a paucity of studies included in this meta-analysis targeted pediatric populations specifically, those that did indicated that cost outcomes were comparable to treatments targeting adult populations. Additionally, while several studies have examined the relative cost-effectiveness of distinct ADHD treatments (i.e., behavioral vs. medication vs. combined therapy; e.g., Foster et al., 2007; Gilmore & Milne, 2001; Jensen et al., 2005) using a payer perspective (i.e., accounting for all direct billing costs regardless of whether they were paid for by a patient, an insurer, or any other third party and not accounting for any discounts and/or negotiated fees), no studies have been found which examine the financial cost-benefit derived from IBH models for ADHD.

The above-mentioned findings regarding the improved access to evidence-based care, acceptability of care, and outcomes from care were also supported in a systematic review (Shahidullah et al., 2018) of six models of IBH for managing ADHD in children and adolescents. While these specific models and outcomes will not be mentioned here, the reader is encouraged to review that article for a detailed description of the characteristics of the six IBH models (i.e., settings, target populations, providers, levels of integration, evaluation and treatment approaches, and methods of interprofessional collaboration). Because those characteristics and model outcomes are described in detail there, it is beyond the scope of this commentary to also do so.

In sum, it appears that IBH care, whereby behavioral health services are integrated within primary care, provides patients with more treatment options that abide by treatment guidelines of AAP (2011). Through IBH, ADHD treatment in the primary care setting would align with the

recommended evidence-based guidelines by AAP in service to a greater number of patients since they would not need to be referred out for behavioral treatment. Further, IBH models have demonstrated to provide a financial cost-benefit compared to SMC, although a paucity of research exists regarding the treatment of ADHD in primary care specifically. There is a clear need for translating efficacious and highly-acceptable treatment models described previously (e.g., Pelham's Buffalo Algorithm, 2007) to be adapted for use within "real world" clinic settings. It is important that they are adapted in a format that is cost- and time-effective for providers (PCPs can "hand-off" patients to embedded BHPs to address ADHD related-concerns; see Meadows et al. [2011] study showing lack of billing reimbursement to PCPs for extra time spent in behavioral health appointments). In summary, IBH models appears to provide the appropriate forum to do so.

### **Conclusions and Next Steps**

While much research has evaluated the efficacy of behavioral treatment, medication, and combined treatment approaches in carefully controlled settings, there is a paucity of research evaluating the effectiveness of these treatments in "real-world" clinic settings, particularly community-based primary care. Despite this general paucity of research, the six IBH models systematically reviewed in the Shahidullah et al. (2018) study and the Buffalo Algorithm IBH Model (Pelham, 2007) provide evidence of seven total models which demonstrate promise in improving the current SMC to move closer to aligning with AAP (2011) best practice guidelines. A next step in the process of expansion and dissemination of effective models is to implement those models of care in sites and settings which currently rely on SMC approaches, demonstrating an over-reliance on stimulant medications and an under-use of behavioral therapies delivered by BHPs. This process is important for obtaining outcome data that is

generalizable to actual clinical practice. Therefore, an important consideration in evaluating empirically-supported multimodal treatments (e.g., MTA, 1999, Pelham, 2007) is their scalability for use in the context of primary care when considering their accessibility, feasibility, and potential for financial viability.

The issue of scalability is particularly important for systems of care for ADHD given the volume of children and adolescents affected. While SMC of medication monotherapy offers the advantage of access to large populations of children, there is little research on IBH treatments that are effective, efficient, and designed and implemented with consideration for patient caretaker acceptability and adherence ratings. These considerations are critical to the development of cost-effective practice models which are amenable to larger healthcare reform initiatives emphasizing increased integration and coordination among services and providers within the context of the family-centered medical home. In the current competitive health care economy, there must be a coordinated effort to present to key stakeholders (i.e., insurance companies, clinic managers, other administrative stakeholders) the value-added and cost-savings justification for integrated behavioral health services to be included as a routine and standard part of care.



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