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Implementing the Primary Care Behavioral Health Model in a Pediatric Setting: Description, Satisfaction, and Potential Economic Outcomes

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IMPLEMENTING THE PRIMARY CARE BEHAVIORAL HEALTH MODEL IN A
PEDIATRIC SETTING: DESCRIPTION, SATISFACTION,
AND POTENTIAL ECONOMIC OUTCOMES

by

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PEDIATRIC SETTING: DESCRIPTION, SATISFACTION,
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Rachel A. Petts, Ph.D.

Western Michigan University, 2017

There is growing support for the value of integrating behavioral health consultants
(BHCs) into primary care medical offices to address mental and behavioral health concerns;
however, the actual practice of BHCs in pediatrics and associated patient and provider
experience is largely unknown. Descriptive data from patient contacts with three BHCs in a large
pediatric primary care practice examined the nature of, and patient and provider satisfaction
with, the integrated behavioral health services provided. Over the course of 6 months of data
collection, 109 patient contacts were recorded. The mean age of the patients served was 9.51 (*SD*
= 4.38, range 1-20). BHC patient contacts were almost evenly split between consultations (51%)
and intake screenings (49%). BHC consultations covered a wide range of behavioral health
concerns, with externalizing behavior problems appearing to drive the greatest number of
referrals and behavior management strategies characterizing the main focus of the interventions.
The problems identified in the intake screenings were most often ADHD symptoms and related
school problems. Moreover, both patients and providers reported high satisfaction with BHC
services. These results suggest that BHC services were implemented in a manner consistent with
the integrated care model, addressed problem domains within the BHC scope of practice,
emphasized targeted strategies drawn from the existing evidence-base, and offered value to the
practice that was recognized by patients and providers alike. Future research should continue to

outline the scope of practice of BHCs with increased emphasis on collecting data that speak directly to the effectiveness of BHCs in fulfilling the quadruple aim of treating more patients, more effectively, and more efficiently, with less provider burnout.

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INTRODUCTION

Primary Care and Behavioral Health

Primary care health settings have been described as the "de facto" mental health system in the United States (Kessler & Stafford, 2008; Norquist & Regier, 1996; Robinson & Reiter, 2016), the gatekeeper through which individuals seek or receive mental health treatment. Indeed, it is estimated that almost half of all individuals with mental health disorders are treated by primary care physicians or clinicians (Kessler et al., 2005), with rates projected to continue to rise due to inception of the Patient Protection and Affordable Care Act and the subsequent emphasis on access to mental health services (Croft & Parish, 2013). Further, with physical health visits often involving some sort of psychological or behavioral component (Kroenke & Mangelsdorff, 1989; Simon, 1992) it is likely that most, if not all, primary care providers (PCPs) encounter mental or behavioral health concerns on a daily basis. Pediatric primary care is no exception. With a shortage of child psychiatrists across the country, pediatric providers are often tasked with prescribing psychotropic medications for children and youth (Kelleher, Hohmann, & Larson, 1989; Mark, Levit, & Buck, 2009) and are typically called on by caregivers to manage the majority of psychological issues in children (Costello, 1986; Rushton, Bruckman, & Kelleher, 2002).

With 25 patients to see per day and average visit lengths of about 15 minutes (10-12 minutes of face time with the patient) it is, not surprisingly, a challenge for primary care providers to find the time to adequately assess and address the mental/behavioral health concerns of their patients. Time is not the only obstacle to providing effective care. Primary care providers are not typically trained in functional analysis or the implementation of evidence-based psychosocial interventions. As such, mental health problems have often gone unrecognized in

primary care or, when recognized, led to administration of psychotropic medication or a referral to an outside specialty mental health service provider (Costello et al., 1988; Horwitz, Leaf, Leventhal, Forsyth, & Speechley, 1992; Mark et al., 2009). Unfortunately, such referrals fail to result in a first session for a large percentage of patients (Fisher & Ransom, 1997).

Recognizing the importance of detecting and addressing the behavioral health needs of primary care patients, many offices have adopted the patient-centered medical (health) home (PCMH) model (American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, & American Osteopathic Association, 2007; Robert Graham Center, 2007). The PCMH model is a comprehensive perspective that emphasizes primary care as a setting to address the whole-person needs of the patient. That is, provide patients a primary health home from which they can access quality, comprehensive, coordinated, and individualized care for a wide range of medical and behavioral health needs. In the PCMH model health is viewed from a biopsychosocial perspective (Engel, 1977), such that a role for behavioral health professionals in collaborating to address the whole-person needs of patients is recognized. Those behavioral health professionals are now finding ways to integrate in primary care settings, therefore bridging the gap between the current state of the "de facto" mental health system and the needs of its patients.

Models of Care

There are a range of ways for mental health professionals to work in a primary care setting, with varying degrees of communication between providers, shared office space and records, and length/types of interventions utilized. To evaluate and compare programs more effectively, Blount (2003) distinguished three models or levels of care: coordinated, co-located, and integrated. These models are not necessarily mutually exclusive, however, they all have in

common some degree of collaboration between mental/behavioral health providers and PCPs. Indeed, as will be noted below, integrated care can be further distinguished between behavioral health consultation models (Robinson & Reiter, 2016; Strosahl, 1998) and collaborative care models, the latter of which often utilizes disease management approaches to mental health concerns (Beach et al., 2015; Katon, 2012). Thus, the following discussion is a general outline of the characteristics of each model, although exceptions to the rule are likely for many practices.

As described by Blount (2003), care that is coordinated is generally characterized by a minimal level of communication between a mental health provider and a PCP. Typically, the mental health provider is not housed within the primary care setting and operates under its own auspices. Consent for release of information has allowed the mental health provider and the PCP to discuss care of the patient, and the point of contact generally begins as a referral from the PCP to the mental health provider. The success of coordinated care depends upon the efforts of both parties to stay in contact, which is generally difficult given the different modes of practice. Coordinated care may be seen as a first step in collaboration; however, the response effort involved to completely coordinate mental health and physical health services makes this model challenging in implementation.

Co-located care is an effort to improve upon coordinated care by housing specialty mental health services either within the same office or building as primary care practices (Blount, 2003; Robinson & Reiter, 2016). Co-located care is typically characterized by the following: separate charting and records, comprehensive documentation of appointments and assessments, a defined schedule with 50-minute appointments, separate treatment plan from the PCP, and focus on the resolution of mental health disorders. Although increased communication and collaboration is more likely with this model, it still runs the same risks as outside specialty

mental health clinics, particularly lack of follow through with referrals, stigma associated with mental health services, and accessibility (Robinson & Reiter, 2016; Strosahl, 1998). Further, co-located psychologists or mental health providers can easily become overwhelmed by the needs of primary care patients, particularly since the goal of the service is to alleviate mental health disorders, Thus, co-located care is an improvement to simple coordinated care models, but can lack efficiency and follow-through.

To improve upon the weaknesses of coordination and co-location, integrated care models have been implemented in which mental health providers are a part of the primary care team and medical and behavioral health is serviced under one treatment plan (Blount, 2003; Gatchel & Oordt, 2003; Strosahl, 1998). In a fully integrated approach, mental health clinicians work closely with PCPs and other primary care team members (RNs, LPNs, CNAs/CMAs,) usually sharing the same provider rooms, often seeing patients with the PCP or immediately following the PCP (i.e., taking warm-hand offs), participating in team huddles, engaging in informal (i.e., curbside consults) and formal care planning discussions, and documenting encounters in a shared medical record (Peek, 2013; Robinson & Reiter, 2016). Thus, when care is fully integrated, the behavioral and medical health needs of the patient are merged under one roof, with a team of providers who actively collaborate on patient treatment in real-time.

Integrated care models have further been distinguished between collaborative care/care management and primary care behavioral health models (Landis, Barrett, & Galvin, 2013). Collaborative care/care management models are typically characterized by the following key elements (as outlined by Beach et al., 2015): a systematic method to identify patients with a psychological disorder or behavioral health problem; a team-based approach to intervention which may include the patient, PCP, specialty mental health provider, and care manager (among

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others); and, measurement of patient outcomes, which can allow for adjustments in the intensity and focus of interventions as needed. In essence, a collaborative care/care management model focuses on specific psychological disorders or conditions and the provision of idiographic, stepped-care treatment for all patients with the diagnosis within a medical setting.

Katon and colleagues (1996; 1999; 1995) were one of the first to demonstrate the potential efficacy of collaborative care/care management in the treatment of depression in primary care. In a series of studies, collaborative care models (which involved patient education and collaborative consultations between PCPs and psychiatrists OR psychologists implementing brief behavioral therapies) were shown to have significant effects on depressive symptoms, medication adherence, and patient satisfaction in comparison to treatment as usual. A meta-analysis of collaborative care programs for depression conducted by Gilbody, Bower, Fletcher, Richards, and Sutton (2006) indicated both significant short-term and long-term effects on depressive symptoms, moderated by medication adherence and level of clinical training and supervision of case managers (i.e., those with a mental health background).

Collaborative care/care management models have also been extended to a variety of psychological disorders and conditions in childhood and adolescence, including adolescent depression (Asarnow et al., 2005; Richardson et al., 2014), disruptive behaviors (Kolko, Campo, Kelleher, & Cheng, 2010), Attention Deficit Hyperactivity Disorder (Power et al., 2014), among many others. In fact, a recent meta-analysis demonstrated significant effect sizes for collaborative care interventions in comparison to usual care (Asarnow, Rozenman, Wiblin, & Zeltzer, 2015). Larger effect sizes were found for interventions that targeted particular disorders and for individuals with elevated symptoms, demonstrating the efficacy of this model of care for clinical populations.

In contrast to the collaborative care/care management model, the primary care behavioral health model (PCBH; Hunter, Goodie, Oordt, & Dobmeyer, 2009; Robinson & Reiter, 2016; Strosahl, 1998) emphasizes the work of mental health clinicians who provide short-term, focused care for all behavioral or mental health concerns. To distinguish their role in the integrated care setting (compared to that undertaken in specialty mental health settings) and to reduce the stigma that remains about seeing a mental health provider, mental health practitioners are often referred to as *behavior health specialists* or *behavioral health consultants* (BHCs; rather than as therapists, counselors, or psychologists) when working in primary care (Hunter et al., 2009; Robinson & Reiter, 2016). The difference is not just semantic. The role of the BHC differs from that of a therapist/counselor in a number of important ways. As a provider in primary care, the BHC seeks to contribute to a core function of primary care in the health delivery system -- maximizing population health. Population health is impacted by helping a large number of patients make small initial behavioral changes that cumulatively have a significant impact (individually and societally; Robinson & Reiter, 2016). This is unlike mental health specialty care where the predominant focus is on seeing a relatively small number of patients through to completion of larger therapy goals. Thus, BHC services are often brief (15-30 minutes), time limited (1-4 encounters for a specific target) and characterized as consultations (not therapy sessions), involving screening, psychoeducation, and implementation of targeted interventions designed to begin the behavior change process (Hunter et al., 2009; Robinson & Reiter, 2016). Like PCPs, BHCs must be generalists able to quickly assess behavioral problems/contributions to ill health and address these behavioral influences as they occur across the myriad conditions that present to primary care. Thus, BHCs must be facile with a range of screening and intervention strategies for common behavioral health problems. The interventions are typically

one's culled from available evidence-based practices, the majority of which come from contemporary behavioral or cognitive-behavioral treatment packages (Bridges et al., 2015; Hunter et al., 2009; Robinson & Reiter, 2016). Finally, BHCs must remain cognizant that one of their primary consumers is the PCP. By having a BHC to help manage the behavioral health needs of patients, PCPs should be more efficient and effective (Robinson & Reiter, 2016).

Warm hand-offs (from PCPs to BHCs) have been shown to increase attendance at subsequent BHC appointments (Cummings, O'Donohue, & Cummings, 2009; Guck, Guck, Brack, & Frey, 2007), a finding that may have to do with accessibility or reduction in stigma (Strosahl, 1998). Further, implementation of the PCBH model has been associated with several improvements in quality and access to care, as well as economic benefits (summarized below). The efficiency and potential cost-effectiveness of the PCBH model has made it an integral part of many federally-funded primary care practices (e.g., Air Force and Veterans Affairs), with expansions to other settings expected in the coming years (Bridges et al., 2015; Bryan et al., 2012; Corso et al., 2012; Ray-Sannerud et al., 2012). Thus, it has been suggested that integrated care and the provision of BHC services is the future of mental health practices in the U.S. (McDaniel & deGruy, 2014; Talen & Burke Valeras, 2013). It extends the collaborative care/care management model by addressing the behavioral health/mental health concerns of *all* patients (not just those who meet a clinical cutoff) thereby emphasizing population-based medicine, and meets the needs of PCPs to accurately assess and treat their patients, improving the value and effectiveness of the "de-facto" mental health system. In short, PCBH models are well suited to meet the goals outlined by the Institute for Healthcare Improvement's proposed Triple Aim: improving health outcomes, reducing costs, and improving quality and satisfaction with care (Berwick, Nolan, & Whittington, 2008).

Outcomes Associated with the PCBH Model

Given the potential of the PCBH model to transform mental health care, the following review is placed on published studies that have demonstrated outcomes related to this model in particular (as opposed to collaborative care/care management models, see review above). Outcomes, however, are not just traditional mental health outcomes that document remission or decreased symptomology, although this is an important component. Instead, outcomes are related to the following three integrated care research goals outlined by Stancin & Perrin (2014): efficacy and effectiveness research, cost offset research, and demonstration of quality of services. Thus, the research agenda for the PCBH model not only includes demonstration of its effectiveness to treat mental health concerns, but also that it decreases costs—an important piece of information that will help with dissemination—and is associated with quality care for PCPs and patient. The following literature review will examine research related to the above-mentioned goals. It is important to acknowledge that the majority of research is based upon descriptive and observational designs within adult populations. Methodological limitations and issues with generalizability notwithstanding, the results are promising in that they show the potential economic utility, satisfaction, and effectiveness of brief, consultative visits in primary care.

Preliminary Effectiveness Data. A few studies have presented effectiveness data for BHC services, the majority of which are based upon archived data, as opposed to open or randomized clinical trials. Nevertheless, the data speak to the potential magnitude of brief interventions. Although causal effects must be cautioned, the data are promising.

Bryan, Morrow, and Appolonio (2009) presented data suggesting improvements in functioning after 1-3 BHC appointments for patients seen in an Air Force Family Medicine

clinic. Three-hundred and thirty-eight patients received BHC services for a variety of concerns including anxiety, depression, insomnia, and stress. These patients completed the Behavioral Health Measure-20 (BHM; Kopta & Lowry, 2002), an overall measure of mental health with scales related to well-being, psychological symptoms, and life functioning, after every BHC appointment to document outcomes. Scores showed a general improvement over time, particularly for those individuals who received 1-3 BHC sessions. Interestingly, those who received four or more sessions did not meet clinical cutoffs for improvement, which may be accounted for by the small number of patients in the analyses (i.e., 8), as well as the overall higher level of distress reported by these individuals pre-treatment. The authors concluded that BHC services may be helpful for those with less severe symptoms and impairments—those with higher levels of impairment will likely need more services to meet clinical improvement.

However, Bryan and colleagues (2012) later demonstrated that patients with more severe symptomology can make large gains over a small amount of sessions. Four hundred and ninety-five patients were treated for a variety of concerns using the PCBH model in two large family medicine clinics associated with Air Force Training hospitals. Using the BHM (Kopta & Lowry, 2002) as an outcome measure, results demonstrated that most patients improved in some way and slightly less than half had what was considered a reliable improvement in symptoms. Interestingly, the effects were partially accounted for by number of appointments, indicating dosage effects. However, rapid gains were noted in all patients, despite the initial severity of symptoms. The authors suggested that PCBH interventions, which by nature are more concrete and directive and taken from empirically-supported treatment packages, may account for the findings, particularly the dosage effects documented in the majority of patients.

Longitudinal outcome data from BHC appointments in a family medicine clinic run by

the U.S. Air Force have also been presented (Ray-Sannerud et al., 2012). Patients completed the BHM (described above; Kopta & Lowry, 2002) after every BHC appointment and could potentially receive 4 sessions with the BHC. A random sample of 664 patients who had previously seen the BHC were extracted from the electronic medical record and were sent the BMH in the mail to complete. Outcome data for 70 of these patients demonstrated the potency of the brief interventions: despite that, on average, patients had not seen a BHC for 2 years, they continued to maintain self-reported improvements on the BHM, regardless of their initial severity of symptoms. The authors concluded that brief, BHC interventions (in this study, 1-4 sessions) have the potential for large clinical improvements over time.

Finally, Bridges et al. (2015) also provided data linking BHC visits with improvements in GAF scores over time in a majority low-income, Hispanic sample. Latent growth curve modeling of patients who attended at least 3 BHC visits for a variety of concerns (e.g., depressive symptoms) demonstrated general improvement across sessions. However, patients who received behavioral activation or exposure were more likely to have larger improvements in GAF scores over 3 sessions, highlighting the effectiveness of these brief, behaviorally-oriented interventions in a primary care setting. The observational nature of this study precludes causal effect; however, it does provide generalizable findings that BHCs are implementing evidence-based strategies that have been shown to be effective in other contexts.

Although there are several studies indicating the effectiveness of cognitive-behavioral interventions for specific mental or behavioral health problems in pediatric primary care (see Asarnow et al., 2015 for a review), outcomes related to a full PCBH model have yet to be investigated. It is promising, however, that specialty mental health care treatments can be applied for a shorter duration, in a different setting, and with favorable outcomes. Future research will

demonstrate whether the above-mentioned improvements in adults following brief consultative visits can be replicated in children and adolescents.

Economic Benefits. One of the most important variables of interest for the PCBH model is its economic viability. Demonstration of the PCBH model's ability to be cost effective and to increase productivity in other areas (e.g., with PCPs) is important for the model to be valued and disseminated to the private and public sectors. Strosahl (2002) describes three different types of medical costs savings that can be evaluated in PCBH: cost effectiveness, increases in productive capacity, and medical cost offset.

Cost effectiveness is the clinical value and cost of a new procedure in comparison to usual care. There are a variety of ways to calculate cost effectiveness, which may take into account direct treatment costs and some sort of clinical effectiveness outcome (e.g., does the treatment work?). Emphasis is placed on the additive value of a new treatment or procedure; ideally, cost is lower and outcomes are higher than usual care. The current research on cost effectiveness typically focuses on interventions for a specific disorder or condition within primary care (e.g., somatization; Smith, Rost, & Kashner, 1995)—an important first step in documenting economic outcomes, but not generalizable to the encompassing model of care that is PCBH.

This is contrasted with a measure of increased productive capacity: does having a BHC on staff increase provider productivity? In other words, can providers see more patients if the BHC is fronting most behavioral health concerns? This method of medical cost savings takes into account the billable amount or relative value unit (RVU) of PCP encounters and the average number of patients seen daily by providers. It is possible that the addition of a BHC on staff allows for more billable encounters, increasing productivity and money generated. A recent

study attempted to capture BHC productivity in pediatric primary care, defined as the percent of time the BHC provided services while available (Cerdena-Meko, Ellens, Burrell, Perry, & Rafiq, 2016). They found that BHCs were providing care 35.28% of the time, which was described by the authors as suboptimal productivity. Although this study did not directly measure PCP productivity, it demonstrates the difficulties in implementing BHC services to have a greater impact on PCP patient contact.

Lastly, there has been much research on medical cost offset, a method first introduced by Cummings, Kahn, & Sparkman (1962), which examines decreases in medical service utilization after the implementation of psychotherapy or a behavioral health intervention. Systematic reviews (Gabbard, Lazar, Hornberger, & Spiegel, 1997; Groth-Marnat & Edkins, 1996) and meta-analyses (Chiles, Lambert, & Hatch, 1999; Mumford, Schlesinger, Glass, Patrick, & Cuerdon, 1984) have demonstrated the medical cost offset of individuals who have received some sort of psychotherapy—in general an almost 15.7 % decrease in medical care utilization as reported by Chiles et al. (1999). Although these reviews and analyses are an important justification for the necessity of mental health care, they are not fully generalizable to the PCBH model in that the majority of studies were related to hospital settings as opposed to primary care (Strosahl, 2002). Further, much of the research on cost-offset is based upon specific treatments or clinical pathways (e.g., depression). However, a more recent study demonstrated that a team-based care practice—defined as physicians who "embraced normalizing mental health" and coordinated/collaborative care for chronic diseases—was associated with decreased health care utilization and decreased costs in comparison to traditional primary care services (Reiss-Brennan et al., 2016), indicating the potential for cost offset in a more fully integrated model.

Quality of Care. Quality of care may be divided into the description of, and satisfaction

with, services. A description of typical BHC services allows clinicians and researchers to compare implementation models. As Funderburk et al. (2011) note, leaders in the field have demonstrated what integrated health care *should* look like, but have yet to show data of actual implementation. Description may also be related to the use of empirically supported treatments and evidence-based practice. Thus, data may be collected related to clinicians' and practices' fidelity to the model, but also to the use of interventions that have empirical support. Additionally, satisfaction data can demonstrate the palatability of the model to both patients and providers, an important piece of information that is integral for its success.

  Description of BHC Practices. A handful of studies have described typical BHC appointments and practices, mostly within adult patients. The following descriptive studies have attempted to delineate basic patient descriptions (e.g., age, sex, referral problems) and interventions utilized (e.g., CBT strategies) to illustrate typical BHC practice. These data show how the PCBH model has been implemented in a variety of practices, but can also be considered markers of evidence-based practice (Bridges et al., 2015).

  Funderburk, Dobmeyer, Hunter, Walsh, and Maisto (2013) characterized BHC (described as BHP, or, behavioral health provider in this study) services in VA and U.S. Air Force primary care clinics across the U.S., utilizing a questionnaire that asked BHPs to describe their practice (e.g., appointment length, setting, interventions) and patient characteristics (e.g., referral problem). The survey demonstrated that the majority of BHPs (who identified as psychiatrists, psychologists, nurse practitioners, and social workers) operated within the PCBH model utilizing shared spaces (85-100%), same day appointment (83-87%), shared medical records (100%), and brief appointments, $M = 40$ minutes, $SD = 16$ minutes for VA BHPs and $M = 33$ minutes, $SD = 12$ minutes for Air Force BHPs. Further, anxiety and depression were the most likely identified

problems (42-55% and 42-62%, respectively), and most clinicians operated from CBT (87-96%) and behavioral (43-52%) orientations. The authors concluded that most BHPs are utilizing principal characteristics of the PCBH model, operating under a CBT orientation, and likely using strategies associated with empirically-supported treatments.

Funderburk et al. (2010) also described the practical implementation of an integrated care model in primary care clinics associated with the Veterans Affairs (VA) Health Care Network of Upstate New York (VISN 2). A random sample of 20 patients from a total of 1,888 who received a session with a BHP were identified from electronic medical records to record patient demographics, length of session, diagnosis, presence of suicidal ideation, reason for referral, and follow-up plans. The majority of patients were referred to a BHP for depressive symptoms (28%) or other mental health reasons (28%; e.g., cognitive evaluation, psychiatric medication evaluation), while 10% were referred for anxiety symptoms, including symptoms related to posttraumatic stress disorder. The average first session length was 41.9 minutes ($SD = 13.1$ minutes), with subsequent sessions having an average length of 35 minutes ($SD = 13.5$ minutes). The majority of patients (52%) were asked to not schedule a follow-up visit; those who did averaged 2.9 subsequent sessions. Funderburk and colleagues concluded that the VISN 2 system appears to be operating within the PCBH model, although interventions implemented were not documented.

To eliminate the abovementioned gap in the literature, Funderburk et al. (2011) utilized a chart review to describe behavioral health interventions that are implemented in 5 VA health Care systems in upstate New York. A random sample of 180 charts were extracted, with 61% of patients receiving one session. The most common diagnoses were depressive and anxiety disorders, and some sort of assessment was completed in all sessions. Interventions utilized were

divided between prescribing BHPs and non-prescribing BHPs, with medication management

being the the most common intervention for prescribing BHPs (66.7%) and psychoeducation for

non-prescribing BHPs (23.3%). Interestingly, the second most common interventions for non-

prescribing BHPs was supportive therapy (20%) and behavioral activation (20%), followed by

cognitive techniques (14.2%). An important finding from this study is the emphasis placed on

psychoeducation and supportive therapy by non-prescribing BHPs, in addition to other

empirically-supported treatment strategies (e.g., behavioral activation), which the authors

describe as potentially troublesome. Quality of care, therefore, is also related to the provision of

empirically supported treatments in the primary care setting.

Bridges et al. (2015) utilized archived electronic medical record data to describe typical

BHC practices in two primary care clinics that serve a predominantly Hispanic and low-income

population in northwest Arkansas. The authors extracted demographic variables, referral

diagnoses or questions, interventions implemented, and number of BHC visits from BHC visit

notes for 1,150 patients over a 34-month period. BHC interventions were provided by clinical

psychology doctoral students in a scientist-practitioner training program operating from a

cognitive-behavioral perspective.

Descriptive data demonstrated that the majority of interventions were behavioral

components from cognitive-behavioral therapy treatments, with the most common intervention

being behavioral activation (26.1%), followed by behavioral medicine strategies (14.6%),

relaxation training (10.3%), and parent management training (8.5%). Psychoeducation and

assessment were also commonly reported interventions (17.5% and 12.4%, respectively).

Concordance between intervention implemented and referral diagnosis was supported. For

example, the most frequently reported interventions for a depressive disorder diagnosis was

behavioral activation (65.5%) and psychoeducation (14.2%) and the most frequently reported

interventions for an anxiety disorder diagnosis was exposure therapy (32.7%) and relaxation

training (27.6%). The authors concluded that BHCs are utilizing empirically supported strategies

from behavioral and cognitive-behavioral therapies, and that the choice of these strategies

corresponded with diagnoses.

A more recent study outlined the typical practice of BHCs operating in a pediatric

primary care site, also utilizing extraction from electronic medical record data (Talmi et al.,

2016). The authors reported 5 different types of BHC office visits, including a Healthy Steps

program focused on infant and toddler development (6%), pregnancy-related depression

concerns (18%), general developmental problems (19.2%), mental health concerns (53.2 %), and

psychiatric medications (5%). Although specific interventions were not provided, each

consultation type had unique clinical activities and problems associated with it. For instance,

Healthy Steps consultations were likely to involve providing developmental recommendations to

the family. Most consultations occurred during a well-child visit (63.7%) and about 15% of

consultations involved a patient with a behavioral health diagnosis, indicating the preventative

and comprehensive nature of the services.

Patient and Provider Satisfaction. Satisfaction surveys for PCBH models have

demonstrated a general satisfaction with, and acceptability of, BHC services by patients and

providers. To date, only three studies have presented satisfaction and quality data, one within a

university healthcare setting, one within a Veterans Affairs system, and one within a primary

care pediatric office.

Funderburk et al. (2010) presented evaluation data regarding BHCs (described as

Behavioral Health Providers, or BHPs in this study) working within a Veterans Affairs system in

Upstate New York. Anonymous patient satisfaction surveys were collected for 140 patients after BHP sessions. Patients reported general satisfaction with various components of their visit, including the amount of time they had with the BHP, quality of the care received, and that the service met their needs. They were also very likely to recommend services to others.

This study also collected provider evaluation of BHP services, particularly how well the BHP served the needs of patients and operated as a part of of the medical team. Using a 1 ("*Not at All*") to 9 *("Completely/Routinely")* scale, providers were asked to rate their level of agreement with statements, such as, "The BHP functions as a 'core' member of the primary care team" or "Wait time for behavioral health patients is less than one week." Forty-six PCPs across 5 sites agreed to participate in the evaluation (a response rate of 82%) and were generally favorable toward the BHP practice. Mean (*SD*) responses ranged from 3.43 (2.27) ("There are significant barriers to the access of behavioral health services") to 7.36 (1.84) ("Behavioral health goals are integrated into the patient's problem oriented record and medical treatment plan"). Overall, the authors concluded that both patients and PCPs are generally satisfied with the integrated health care services in the upstate NY VA primary care practices.

Funderburk, Fielder, DeMartini, & Flynn (2012) also obtained data from 15 PCPs and 79 patients who participated in BHC (also described as Behavioral Health Providers, or BHPs in this study) services in a university health center setting. Primary care providers (n= 9) and nurses (n=6) answered 18 questions, using a 1-5 Likert scale ("*Strongly Disagree*" to "*Strongly Agree*") regarding the acceptability and usefulness of specific (e.g. screening for depression) and general (e.g., overall usefulness of the BHP) components of services. The ratings related to general components of the BHP practice, which have more potential to be generalized to other settings,

ranged from mean (*SD*) of 3.8 (1.0) to 5.0 (0.0), indicating general agreement (or, above "neutral" responses) with the usefulness of, and satisfaction with, services.

Funderburk et al. (2012) also asked previous university patients to complete an anonymous satisfaction, comfort, and willingness questionnaire that ranged from 1 ("*Extremely unsatisfied/uncomfortable/unwilling*") to 5 ("*Extremely satisfied/comfortable/willing*"). Results suggested an overall general level of satisfaction with the BHP (*M* = 3.4, *SD*= 1.2), comfort with the length of the meeting (*M* = 3.7, *SD* = .9) and willingness to meet with a BHP provider again (*M*= 3.4, *SD* = 1.4). The positive survey results in both providers and patients demonstrate the agreeableness of brief services, and especially screening, in a university health setting.

Lastly, Ward-Zimmerman and Cannata (2012) presented an evaluation of an integrated behavioral health program in Connecticut, known as the Bristol Pediatric Behavioral Health Program. PCPs (n =9) reported the following: 92% stated that the program allowed them to spend less time on behavioral concerns during appointments and 100% stated that the program helped them recognize behavioral health problems in a more efficient manner, increased the quality of care received by patients, and helped with referrals. Patients (n =37) also reported the following: 90% received an appointment immediately, 100% trusted the PCP with the referral, and 81% stated it was easier to convince their child to attend the appointment in the primary care practice. Although these data do not explicitly ask about quality and satisfaction, they are indirect evidence that the PCBH model is helpful to PCPs and patients in a pediatric practice.

Purpose

This literature review suggests the following: brief consultation visits are satisfactory for patients and providers, BHCs are generally following the PCBH integrated care model (i.e., brief appointments, shared charting), BHCs are generally utilizing strategies and techniques from

evidence-based treatments (although there may be some individual differences in practice), brief consultations are associated with improved short-term and long-term outcomes, and there is potential for economic benefits of the model. However, this data is almost completely related to adult primary care practices, particularly those within a VA and Air Force setting. It is unclear the generalizability of this data to pediatric practices, where practice flow and referral concerns are different. Thus, there is a need to document that BHC services are acceptable for children and adolescents as well as pediatricians, that evidence-based strategies and techniques are being utilized, that these strategies and techniques are related to improved functional outcomes, and that the model is cost-effective for pediatricians. A reasonable first step is to begin with demonstrating quality of care —both descriptions and evaluations of services—as this shows how BHCs are working in pediatric primary care and how satisfactory and beneficial their services are. Further, preliminary data on the financial feasibility of the model may begin to illustrate the potential cost-effectiveness and cost-offset of PCBH interventions in pediatric primary care.

Thus, this study had three goals: to provide descriptive data of typical BHC referrals and services (e.g., demographics and interventions implemented), to collect patient and provider satisfaction data related to these interventions, and to demonstrate increased PCP productivity. It was hypothesized that BHC services provided would be consistent with the model (e.g., appointments would brief), that evidence-based strategies and techniques would be utilized, and that their activities would be viewed positively by patients and PCPs.

METHOD

Design

This study utilized a descriptive design. Data were collected in a local pediatric primary care practice offering BHC services between the months of October 2015 and May 2016. As described in detail below, following a patient contact BHCs completed a survey detailing the nature of the encounter, patients completed anonymous ratings describing their satisfaction with the encounter, and, finally, PCPs anonymously rated the BHC services at their monthly provider meeting.

Setting

Data collection occurred at two pediatric primary care locations within the same practice: Bronson Rambling Road Pediatrics Oshtemo and Bronson Rambling Road Pediatrics Portage. Bronson Rambling Road Pediatrics is one of the largest pediatric practices in southwest Michigan and serves a diverse population of infants, children, and adolescents within the area. It is open to Medicare and Medicaid patients, along with private insurance. Since 2009, the practice has been identified as a PCMH, providing services that are whole-person and integrated. Three BHCs were integrated within the practice, two in the Oshtemo location and one in the Portage location. All BHCs were placed part-time, typically for half day schedules several days a week, although schedules varied month-to-month.

BHCs were doctoral level graduate students who had completed or were completing an external practicum in integrated care. Prior to their placement, they had completed coursework in psychotherapy, child behavior therapy, behavior therapy, behavior assessment, personality assessment, intellectual assessment, and child psychopathology. They had also completed a two-year internal practicum in an outpatient setting. As part of their practicum, the BHCs had

participated in professional development specifically related to operating as a BHC, which included comprehensive exposure to Robinson and Reiter, 2007. Thus, BHCs were trained in the integrated care model and had a strong foundation in evidence-based treatment techniques used in contemporary behavioral/cognitive-behavioral approaches. They received weekly supervision by a licensed clinical psychologist who also had a long history of working with pediatric populations using contemporary behavioral/cognitive-behavioral approaches.

Participants

Participants were BHCs, patients, and providers at Bronson Rambling Road Pediatrics. As noted above, data were collected from three BHCs. There were sixteen providers within the practice over the course of data collection, including 8 medical doctors, 5 nurse practitioners, and 3 doctors of osteopathic medicine. These providers were divided between the two locations and had the opportunity to utilize BHC services. Patients included those who had received BHC services at either location.

Measures

Behavioral Health Consultation Form (BHC Form; Appendix A). This form was created by a Bronson Rambling Road BHC to collect the following information from patients who had used the service: demographics, reason for the encounter, interventions used, and satisfaction with services. The form was incorporated as part of the BHC service. It was divided into two sections: one which was completed by the BHC, the other which was (optionally) completed by the patient's caregiver or the patient (depending on the patient's age). The section completed by the BHC recorded the age, sex, ethnicity/race, session length, type of patient contact, whether the patient had received BHC services before, reason for referral, and

interventions used. The BHC collaboratively completed this section with the patient during provision of BHC services.

After the BHC visit, the patient or the patient's caregiver had the opportunity to anonymously complete the second section of the form, which was a patient reaction and satisfaction survey. Responses were recorded on a 1 (*"Extremely Dissatisfied"* or *"Extremely Unlikely"*) to 6 (*"Extremely Satisfied"* or *"Extremely Likely")* Likert scale. Questions included: How satisfied are you with the help you received from the BHC?; How satisfied are you with the amount of time you had with the BHC?; How likely are you to follow through on the plan discussed with the BHC?; and, How likely would you be to use the services of a BHC again?

Behavioral Health Consultation Activity Log (BHC Activity Log; Appendix B). This form was also created by a Bronson Rambling Road BHC to record all patient contacts. It is similar to the first half of the BHC Form (i.e., demographics, interventions, problem areas), but also includes a section to record follow-up services. This form was completed by the BHC after patient contact. The reason for the redundancy between the BHC Form and the BHC Activity Log is that returning the former occurred at the discretion of the patient, while the latter was returned by the BHC. The redundant aspects of the forms allowed us to track return rates for the patient satisfaction survey. The return rates were high: BHC Form (n=109) and BHC Activity Logs completed (n= 111). As such, the data from the BHC forms were sufficient to characterize the services provided and the patient satisfaction.

Provider Satisfaction Form (Appendix C). This form was created by a Bronson Rambling Road BHC to record provider satisfaction with BHC services. The survey was administered at each monthly provider meeting over the course of the study (October 2015-April 2016), and was a part of Rambling Road's standard practice. Providers were asked whether they

had access to a BHC within the last month and approximately how many consultations or intakes had been completed by BHCs for their patients. They were also asked to rate their level of agreement on a 1 (*"Strongly Disagree"*) to 6 ("*Strongly Agree")* Likert scale with the following statements: The addition of a BHC in our practice has made my work more efficient; I see more patients now that the BHC is a part of our practice; My patients are receiving improved care now that the BHC is a part of our practice; I am likely to refer my patients to the BHC; and, I would recommend the services of the BHC to my colleagues.

Procedure

The following procedure describes BHC practices at Rambling Road Pediatrics as they pertain to the data analyzed in this study. BHC services involved consultations, follow-up consultations, medication checks, intakes, and telephone consultations.

Consultations. Consultations were provider-initiated contacts. Providers referred patients to the BHC for any relevant behavioral, emotional, or health-related concern that was brought to their attention at an office visit. Depending on the availability of the BHC, the consultation occurred on the same day in a "warm hand-off" fashion or on a separate day as a scheduled appointment. For same day consultations, the BHC was sought out by the provider to see the patient. For separate day consultations, messages were sent to the BHC to schedule a consultation appointment.

BHC consultation appointments were tailored to the presenting problem, but followed this general outline: introduction of the patient to the BHC service, identifying/clarifying the reason for the consultation, conducting a brief screening/history/functional analysis of the problem, and implementing a behavioral plan with the patient.

Follow-up Consultations. Follow-up consultations were defined as those scheduled after

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the first consult to track functioning and intervention implementation. Depending upon the needs of the patient, these consultations were scheduled to continue work on a behavior plan and/or aid in the determination that a referral to outpatient services was warranted.

Medication Checks. These BHC consultations were similar to the ones described above, but with the exception that they occurred in the context of a medication check appointment with a provider. The BHC worked side-by-side with a provider during such visits.

Intakes. Patient self-referrals were routed into a BHC intake/triage system developed within the practice. This system was created specifically to reduce the behavioral health burden for providers and to more effectively triage behavioral health concerns. Prior to the BHC intake system, all new behavioral or emotional concerns *called in* by patients' caregivers were routed to a provider who completed an approximately 45-minute intake, typically weeks or months out from the self-referral phone call. To reduce this back-up and free-up time for providers, all new behavioral health concerns that were called in were directly routed to the BHC for an intake. Clinical staff scheduled patients in one of several weekly slots that were open for intakes by the BHCs. Although some providers asked that the BHCs complete intakes for their patients, the majority of intakes were self-referrals from patients' caregivers.

Intake appointments served a variety of functions and could overlap with typical consultations. Because they were meant to replace provider intakes, some appointments would focus solely on information-gathering to supplement potential medication evaluations that may be completed in the future by a provider. In these consults, a history was completed and preliminary diagnoses considered to help providers decide if, or what, medications may be worthy of consideration. This information-gathering could also point toward a referral to an outside mental health specialty service (psychiatry or counseling). Additionally, some intakes

resulted in implementation of behavioral strategies, the results of which could be tracked in follow-ups scheduled with the BHC and/or PCP. In general, the direction of an intake appointment was influenced by the patient's needs, the patient's wishes (e.g., to see a PCP, start a behavioral intervention), and the BHC's clinical judgment as to what may be most helpful to the patient (e.g., severity of symptoms warranting more intensive outside services). Regardless of the nature of the appointment, a plan was agreed upon by the BHC and the patient for some type of follow-up care, either with a provider, the BHC, or an outside service.

Telephone Consultations. Beginning in March 2016, BHCs began conducting telephone consultations. These consultations acted as a triage service and allowed BHCs to contribute to team decisions as to whether patients needed to be seen for an intake, an in-person consultation, or should be referred for outside services. Because these consultations were completed over the phone, no satisfaction data were collected and thus no data is presented on this service. It is noted here to provide a comprehensive view of the roles played by BHCs.

Collection of Patient Data. During any in-person BHC service (e.g., consultation, follow-up consultation, medication check consultation, or intake), the BHC completed the first section of the BHC Form. This section was completed jointly with the patient in order to record accurate demographic data and was a typical component of a BHC session. Following the BHC service, the patient or patient's caregiver was presented with the option to complete a patient satisfaction survey related to the appointment. This survey was not completed in the presence of the BHC. If patients or their caregivers decided to complete the survey, they turned it into a locked box at the check-out station. At the end of each week, the forms were collected by a BHC and stored in a locked file cabinet on site. Further, after each BHC service, the BHC completed the BHC Activity Log to record and describe the patient contact. This Activity Log was also

stored in a locked file cabinet.

Provider Satisfaction Surveys. Providers met monthly to discuss concerns, policies, and upcoming events. During these monthly meetings, the Medical Director of Behavioral Health Services for Bronson (and one of the co-investigators) distributed and collected provider satisfaction surveys. These surveys were anonymous and voluntary. Across October 2015 and April 2016, 77 provider satisfaction surveys were completed. As with BHC forms and activity logs, provider satisfaction questionnaires were locked in an on-site file cabinet.

Coding and Analysis of Data

Data were first entered into an Excel spreadsheet and subsequently coded and entered into an SPSS database by the author and a trained undergraduate student. Continuous variables (e.g., age, session length, and satisfaction questions) did not require coding and were entered into the database as is. Categorical variables such as sex, ethnicity, and contact type were assigned numbers (e.g., male=0; female=1) and then entered. Because more than one problem or intervention could be indicated during patient contact, these data were coded as either 0 (not marked) or 1 (marked) for each form in order to obtain frequency counts. During the course of coding, two interventions were added (and subsequently recoded) due to their frequency as write-ins under the category of "other": referral (to outside provider) and PCP referral. Each coder's database was compared for accuracy and mistakes were corrected.

There was a small difference between the number of BHC Forms returned and BHC Activity Logs completed (n = 109 and n = 111, respectively). Given this small difference, and the almost complete overlap in descriptive data collected by both forms, it was decided that the BHC Forms would be used to capture scope of practice and patient satisfaction with the services provided. Thus, the following analyses are based upon returned BHC forms (n =109) as well as

provider satisfaction forms (n = 77) and will delineate basic descriptive data on who received

BHC services, what type of services were provided, and patient and provider satisfaction.

Data were analyzed using SPSS. Descriptive statistics including means, standard

deviations, ranges, modes, and percentages, were utilized. Because not all forms were completed

in their entirety, the n will be presented for each descriptive statistic. Independent samples *t* tests

were used to examine whether there were differences in satisfaction between consultations and

intakes and between patients who had received services before and those who had not.

RESULTS

Demographics

Table 1 presents basic demographic data gathered from BHC forms. The mean age of this

sample was 9.51 (*SD* = 4.38), with ages ranging from 1-20 years. Seventeen percent of the

sample was 5 years or younger, 64% was 10 years or younger, and 88% was 15 years or

younger, indicating a generally school-aged group. Over half of the sample was male (56.5%),

while 43.5% was female. The majority identified as White (89.6%), while 6.3% identified as

Black or African American, 3.1% identified as Mixed or Biracial, and 1.0% identified as

Hispanic or Latino/a. Thus, while there was considerable variability the most common patient

was a school-age white male.

Type and Duration of Patient Contact

Intakes and consultations were the two most common types of BHC patient contact and

occurred with about equal frequency. Not surprisingly, intake appointments were twice as long

as consultations. Of the 109 patient contacts recorded over the course of the approximately 6

months of data collection, 48% were intakes (n = 51), which were scheduled for 60 minutes, and

on average lasted about 58 minutes (*M* =58.70, *SD* = 5.422, range 30-60). BHC consultations

Table 1

Basic Demographics and Patient Contact

	n	*M(SD)*	Range
Age in Years	108	9.51 (4.38)	1-20
Session Length (Minutes)	105	42.43 (20.98)	5-60
Intakes	51	58.70 (5.422)	30-60
Consultation	43	27.67 (18.70)	5-60
Follow-up Consultation	11	42.73 (20.05)	5-60
	n	Percentage	
Sex	108		
Male	61	56.5	
Female	47	43.5	
Race/Ethnicity	96		
White	86	89.6	
Black/African-American	6	6.3	
Hispanic-American/Latino	1	1.0	
Multi-racial/ethnic	3	3.1	
Patient Contact	106		
Intake	51	48.1	
Consultation	43	40.6	
Follow-up Consultation	11	10.4	
Medication Check	1	.9	
Received Services Before?	93		
Yes	16	17.2	
No	64	68.8	
Don't know	13	14.0	

made up 41% (n = 43) of patient contacts and, consistent with the approach, were typically

relatively brief in nature, averaging less than 30 minutes (*M* =27.67 minutes, *SD* =18.70, range

5-60 minutes), but varied considerably depending on the referral question, its severity, and/or

other factors. Follow-up consultations, scheduled after the first consult to assess functioning and

the effectiveness of the intervention implemented, made up 10% of the contacts and lasted, on

average, around 43 minutes (*M* = 42.73, *SD* = 20.05, range 5-60). Thus, when treated together

initial and follow-up consultations comprised 51% of BHC patient contacts. The remaining 1% was a single (n = 1) medication check that lasted 30 minutes.

Prior to this data collection period, most patients (69%) reported no prior contact with a BHC; however, 17% reported prior BHC services and 14% were unsure, but indicated they may have received prior BHC services.

Problem Domains Identified

Table 2 presents the frequency and percentage that each problem area was indicated in BHC patient contact. These data are further divided into intakes and all consultations, the latter combining regular consultations and follow-up consultations. Given that only one medication check was reported, data are not presented on this patient contact alone. Percentages are based upon the frequency that each problem was reported in each subsample. Problems were not mutually exclusive, such that any number of problems could be indicated in a BHC contact. Most BHC contacts included only 1 identified problem (41.1%), while 36.4% included 2, and 15.9% included 3 [range 1-6; *M (SD)* = 1.92 (1.02)].

The most frequent problems resulting in BHC consultations were noncompliance (28%) and school problems (24%), followed by anxiety (20%). Next, were tantrums (15%), defiance (15%), inattention (11%), and sleep (11%). Looking across these targets, externalizing problems appeared to drive the greatest number of referrals to BHCs (aggression and hyperactivity were also identified in 6% of cases, respectively). However, in addition to anxiety and sleep, consultations also targeted depression (9%), health issues (7%), toileting (7%), suicidal ideation (4%), self-harm (4%), and stress (4%). These data suggest BHC consultations covered a wide range of externalizing, internalizing, and behavioral health concerns.

Table 2

Frequency and Percentages of Each Problem Area for Consultations, Intakes, and the Total Sample

Problem	Consultation n =54		Intake n = 50		Total n =107	
	n	%	n	%	n	%
Feeding	0	0.0	0	0.0	0	0.0
Social Difficulties	0	0.0	1	2.0	2	1.9
Self Harm	2	3.7	0	0.0	2	1.9
Stress	2	3.7	0	0.0	2	1.9
Suicidal Ideation	2	3.7	0	0.0	2	1.9
Aggression	3	5.6	1	2.0	4	3.7
Hyperactivity	3	5.6	14	28.0	17	15.9
Health Issues	4	7.4	0	0.0	4	3.7
Toileting	4	7.4	0	0.0	4	3.7
Other	4	7.4	3	6.0	7	6.5
Depression	5	9.3	3	6.0	8	7.5
Inattention	6	11.1	32	64.0	38	35.5
Sleep	6	11.1	2	4.0	8	7.5
Defiance	8	14.8	3	6.0	11	10.3
Tantrums	8	14.8	4	8.0	12	11.2
Anxiety	11	20.4	8	16.0	21	19.6
School Problems	13	24.1	25	50.0	39	36.4
Noncompliance	15	27.8	9	18.0	24	22.4

Note. Some frequencies do not add up due to missing data.

When looking at intake data, inattention (64%) and school problems (50%) were the most commonly indicated problems occurring in half or more of the cases. Hyperactivity (28%) was an identified problem in over a quarter of cases, followed by noncompliance (18%). Thus, the presenting problems in the majority of intakes appeared to be ADHD symptoms and related concerns. Anxiety was, again, the most frequently noted internalizing problem being identified in 16% of intakes. The remainder of intakes included externalizing behavior problems (tantrums [8%], defiance [6%], aggression [2%]), depressive symptoms (6%), sleep (4%), and social difficulties (2%).

With all patient contact combined (n = 107), the most frequently reported identified problem areas were almost evenly tied between school problems (n = 39; 36.4%) and inattention (n = 38; 35.5%), followed by noncompliance (22%), anxiety (20%), hyperactivity (16%), tantrums (11%), and defiance (10%). In general, across all contacts, externalizing behavior problems was the most frequently reported problem area. With the exception of feeding, which was never indicated during a BHC contact, all referral problems were reported at least twice between consultations and intakes.

Interventions

Table 3 presents the frequency and percentage that each intervention was used by a BHC, sorted by intakes and consultations (including follow-up consultations). As with the identification of problem domains, the percentages are based upon the frequency that each intervention was reported in each subsample. Interventions used are not mutually exclusive, such that any number of intervention could have been reported in each patient contact. The majority of patient contact included 2 or 3 interventions (28% each), with a range of 1-7 and a mean (*SD*) of 2.62 (1.27).

Intakes resulted in BHCs prescribing a range of strategies the come from evidence-based parent training programs. The behavior management strategies incorporated attempted to increase desired behavior by promoting effective command giving (26%) and the use of systematic positive reinforcement (token economies [68%] and labeled praise [32%]). In addition, extinction or negative punishment procedures (ignoring [26%], removal of privileges [24%], and time out [14%]) were employed to target problematic behavior. The fact that the most commonly employed interventions during intakes were behavior management strategies maps onto the primary problem areas identified, which consisted mostly of attention concerns,

Table 3

Frequencies and Percentages of Each Intervention Used for Consultations, Intakes, and the Total Sample

Intervention	Consultation n=54		Intakes n= 50		Total n = 107	
	n	%	n	%	n	%
Cognitive Restructuring	0	0.0	0	0.0	0	0.0
Defusion	0	0.0	0	0.0	0	0.0
PCP Referral	0	0.0	1	2.0	2	1.9
Acceptance/Mindfulness	1	1.9	0	0.0	2	1.9
Exposure	2	3.7	2	4.0	4	3.7
Referral	2	3.7	3	6.0	5	4.7
Activity Scheduling	3	5.6	2	4.0	6	5.6
Effective Commands	3	5.6	13	26.0	16	15.0
Sleep Hygiene	3	5.6	4	8.0	7	6.5
Relaxation Skills	4	7.4	1	2.0	6	5.6
Special Time	4	7.4	3	6.0	7	6.5
Time Out	4	7.4	7	14.0	11	10.3
Differential Reinforcement	5	9.3	3	6.0	8	7.5
Removal of Privileges	5	9.3	12	24.0	17	15.9
Self Monitoring	6	11.1	1	2.0	7	6.5
Goal Setting	7	13.0	2	4.0	9	8.4
Other	7	13.0	6	12.0	14	13.1
Labeled Praise	10	18.5	16	32.0	26	24.3
Ignoring	11	20.4	13	26.0	24	22.4
Psychoeducation	12	22.2	2	4.0	15	14.0
Interviewing	15	27.8	8	16.0	23	21.5
Supportive Listening	16	29.6	2	4.0	18	16.8
Token Economy	19	35.2	34	68.0	53	49.5

Note. Some frequencies do not add up due to missing data.

hyperactivity, noncompliance, and school problems. A number of other strategies were employed less frequently, consistent with the range of other problems identified (see Tables 2 & 3).

Quickly building rapport, gathering information to support an intervention, or describing the rationale for an intervention are foundational to BHC consultations. As such, it is not surprising that the use of supportive listening (30%), interviewing (28%), and psychoeducation

(22%) were reported relatively frequently during consultations. It was surprising that they were not endorsed more. In talking with the BHCs, we suspect that supportive listening, interviewing, and rationale provision were indeed used to some degree in every consultation, but as they are often viewed as the foundation on which a subsequent intervention rests, were often omitted in BHC reporting (see Table 3). However, another possible explanation would be that BHCs were utilizing these strategies as stand alone interventions during consultations (hence their relatively high reported frequency). To better understand their use, consultation intervention data were further analyzed to obtain frequency counts on when general therapy strategies (described here as *foundational strategies;* that is*,* supportive listening, interviewing, psychoeducation, and goal setting,) were reported: alone, with another foundational strategy, or with a *targeted intervention* (i.e., specific techniques pulled from empirically-supported treatments).

Of the 16 consultations that involved supportive listening, 62.5% (n =10) also involved one or more *targeted* intervention strategies. Supportive listening was never done alone; however, 37.5% (n=6) involved at least one other foundational strategy or referral to an outside therapist. Likewise, of the 15 consultations that involved interviewing, 80% (n =12) also involved the use one or more targeted interventions.

Psychoeducation was reported in 12 patient contacts and only occurred once as a stand alone intervention. Otherwise, 33% (n= 4) of all patient contact that involved psychoeducation also involved one or more foundational strategies, while 58% (n= 7) involved at least one other targeted intervention. Lastly, goal setting occurred in 7 consultations and always involved the use of a targeted intervention. Taken together, it appears that BHCs were generally using foundational strategies as expected – with targeted strategies— and were less often using them as a stand alone intervention or with another foundational strategy.

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As with intakes, the other most frequently reported interventions in consultations tended to be those coming from the parent training literature and involved systematic use of positive reinforcement (token economies [35%] and labeled praise [19%]) and ignoring (20%), but also included higher rates of goal setting (13%), and self-monitoring (11%). As would be expected given the broader range of problems addressed during consultations, other interventions were also more likely to come into play, such as relaxation skills (7%), activity scheduling (6%), sleep hygiene (6%), and acceptance/mindfulness (2%). See Table 3 for a full list.

Combining all BHC contacts (n =107), the most frequently reported interventions continued to be empirically supported strategies for externalizing behavior problems and general therapy strategies. They included token economies (50%), labeled praise (24%), ignoring (22%), interviewing (22%), supportive listening (17%), removal of privileges (16%), effective commands (15%), psychoeducation (14%), and time out (10%). All interventions were used at least two times with the exception of cognitive restructuring and defusion, which were not used at all.

While the lists in Tables 2 and 3 showing the overall percentages of identified problems and the intervention strategies used suggest a link between patient needs and the techniques employed, we sought to examine more closely the match of intervention strategies to the identified problems using the data from consultations. Identified problem areas were divided into three broad categories: internalizing problems (i.e., anxiety, depression, self-harm, and suicidal ideation), externalizing problems (i.e., aggression, defiance, hyperactivity, inattention, noncompliance, and tantrums), behavioral health problems (i.e., health issues, sleep, stress, and toileting). School problems was not placed in any of the above categories given that it is not necessarily indicative of an internalizing or externalizing problem (e.g., some children may be

school avoidant, others may be disruptive, and others may have a learning disorder). As noted previously, interventions were also divided into those we considered *targeted strategies* (i.e., specific techniques pulled from evidence-based practices) and those we considered *foundational strategies* (e.g., general strategies including supportive listening, goal setting, and psychoeducation).

The complete data are presented in Table 4. As can be seen, BHCs were generally utilizing targeted strategies that align with the presenting problem. For the 14 consultations that included one or more internalizing problem, 14% involved activity scheduling, relaxation skills, and self-monitoring, while 7% involved acceptance/mindfulness and exposure. It is noted that there was a heavy reliance on supportive listening (43%), psychoeducation (36%), and interviewing (21%) – all foundational strategies that occurred at a higher frequency than any of the abovementioned targeted strategies for internalizing problems. In contrast, externalizing problems relied heavily on behavior management strategies, with over half of all consultations involving the use of a token economy (58%), followed by ignoring (39%), labeled praise (35%), removal of privileges (19%), differential reinforcement (15%), and time out (15%). Behavioral health problems – which included stress, health issues, sleep, and toileting – generally utilized relaxation skills (19%), self monitoring (19%), token economies (19%), or sleep hygiene (19%). School problems often involved token economies (69%), labeled praise (23%), removal of privileges (15%), time out (15%), and effective commands (15%), suggesting that BHCs were likely treating disruptive behaviors within the classroom. However, the use of sleep hygiene (8%) and exposure (8%) suggest that school problems may have also been related to sleep and anxiety, respectively, at times.

Table 4

Percentage of Intervention Strategies Used in Consultations Across Problem Areas

	Problem Area			
	Internalizing (n=14)	Externalizing (n= 26)	Behavioral Health (n =16)	School (n=13)
Targeted Strategies				
Activity Scheduling	14		6	8
Relaxation Skills	14		19	
Self-Monitoring	14		19	
Acceptance/Mindfulness	7			
Exposure	7	4		8
Ignoring	7	39	6	8
Special Time	7	12		
Token Economy	7	58	19	69
Cognitive Restructuring				
Defusion				
Differential Reinforcement		15		8
Effective Commands		12		15
Labeled Praise		35		23
Removal of Privileges		19		15
Sleep Hygiene			19	8
Time Out		15		15
Foundational Strategies				
Supportive Listening	43	31	38	15
Psychoeducation	36	12	25	15
Interviewing	21	27	38	31
Goal Setting	14	15	19	23

Note. Internalizing Problems = anxiety, depression, self-harm, suicidal ideation; Externalizing Problems = aggression, defiance, hyperactivity, inattention, noncompliance, tantrums; Behavioral Health Problems = health issues, sleep, stress, toileting.

Because more than one problem domain was often identified (*M*=1.78, *SD*= .883, range 1-4), and not all identified problems were targeted during a consultation, some strategies that are recorded do not align with the presenting problem. For instance, the behavior management strategy of ignoring was utilized in a consultation for an internalizing problem. It is unclear if this intervention was directed toward the internalizing problem, or, more likely, an externalizing problem that was also identified during the consultation. There are only a handful of instances

such as this within the data (e.g., exposure in externalizing problems and activity scheduling in school problems), and while we cannot be entirely certain, we suspect is due to multi-problem presentations. Over half of all consultations (54%) involved more than one problem domain and of these 29 patient contacts, 86.2% (n=25) utilized more than one intervention, suggesting that BHCs were likely intervening in more than one problem area during consultations. Generally speaking, the available data suggest BHCs were utilizing appropriate targeted strategies during consultations.

Foundational strategies were often reported during consultations for all problems. BHCs were likely to engage clients in an interview to understand the problem, supportively listen to concerns, provide psychoeducation, or encourage goal setting, while also offering targeted brief intervention(s) to begin to address the specified problem. While use of at least some general strategies were almost always reported, it could be argued that all should be reported in every consultation. Again, it is unclear what makes it more likely for a BHC to report some of these strategies for some contacts and not others, but it seems possible that BHCs emphasized the most "dominant" or readily apparent targeted strategies.

Patient Satisfaction

Table 5 presents the mean, standard deviation, range, and modal response for each satisfaction question divided into consultations, intakes, patients who had received services before, and patients who had not received services before. Across the entire sample (n = 108) scores were consistently high on the 1-6 Likert scale indicating satisfaction with the help received ($M = 5.44$, $SD = .97$, Mode = 6, Range 1-6), satisfaction with the amount of time they had with the BHC ($M = 5.59$, $SD = .96$, Mode = 6, Range 1-6), strong perceived likelihood of

Table 5

Patient Satisfaction Across the Total Sample and Subsamples

Question 1: How satisfied are you with the help you received from the BHC?					
	Total (n=108)	Consultation (n=54)	Intakes (n=50)	Received Services Before (n=16)	Had Not Received Services Before (n=63)
M(SD)	5.44 (.97)	5.56 (.74)	5.32 (1.17)	5.19 (1.05)	5.51 (.91)
Range	1-6	2-6	1-6	2-6	1-6
Mode	6	6	6	5	6
Question 2: How satisfied are you with the amount of time you had with the BHC?					
	Total (n=108)	Consultation (n=54)	Intakes (n=50)	Received Services Before (n=16)	Had Not Received Services Before (n=63)
M(SD)	5.59 (.96)	5.70 (.82)	5.48 (1.11)	5.38 (1.31)	5.62 (.83)
Range	1-6	1-6	1-6	1-6	1-6
Mode	6	6	6	6	6
Question 3: How likely are you to follow through on the plan discussed with the BHC?					
	Total (n=108)	Consultation (n=54)	Intakes (n=50)	Received Services Before (n=16)	Had Not Received Services Before (n=63)
M(SD)	5.65 (.93)	5.74 (.76)	5.58 (1.10)	5.44 (1.26)	5.75 (.74)
Range	1-6	1-6	1-6	1-6	1-6
Mode	6	6	6	6	6
Question 4: How likely would you be to use the services of a BHC again?					
	Total (n=108)	Consultation (n=54)	Intakes (n=50)	Received Services Before (n=16)	Had Not Received Services Before (n=63)
M(SD)	5.48 (1.05)	5.59 (.77)	5.40 (1.23)	5.31 (1.14)	5.57 (.95)
Range	1-6	2-6	1-6	2-6	1-6
Mode	6	6	6	6	6

following through with the plan developed with the BHC ($M = 5.65$, $SD = .93$, Mode = 6, Range 1-6) and willingness to use BHC services again ($M = 5.48$, $SD = 1.05$, Mode = 6, Range 1-6).

On all 4 items, the mean ratings were numerically higher for consultations (n = 54) than intakes (n =50), but in no case were these differences statistically significant: satisfaction with help (t [102] = 1.24, $p = .22$), amount of time (t [102] = 1.18, $p = .24$), likelihood of follow

through (t [102] = 0.88, p = .38), or likelihood of using services again (t [102] = 0.97, p = .37).

The consistently equal satisfaction ratings are notable given that BHCs spent less than half as

much time with patients in consultations (M =27.67, SD =18.70) than intakes (M = 58.70,

SD=5.42). On all 4 service evaluation items the mean ratings were also numerically higher for

first time users of BHC services (n = 62) than repeat users (n = 16), but, again, in no case were

these statistically significant: satisfaction with help (t [76] = 1.18, p = .24), amount of time (t

[76] = 0.89, p = .37), likelihood of follow through (t [76] = 1.25, p = .22), or likelihood of using

services again (t [76] = 0.91, p = .37).

Provider Use of BHC Services and Satisfaction with BHC Services

To better characterize provider use and satisfaction, information was collected related to

access to BHCs and number of consultations/intakes that BHCs completed for the provider. As

noted previously, 16 providers worked in the practice over the course of data collection. Between

9 and 12 providers completed provider satisfaction surveys each month, a return rate of 56-75%.

Across all returned provider measures, 96.1% (n = 76) indicated access to a BHC. Twelve

percent (n=9) reported 0-1 intakes or consultations completed by BHCs; 38.7% (n=29) reported

2-3; 29.3% (n=22) reported 4-5; 10.7% (n=8) reported 6-7; 2.7% (n=2) reported 8-9; 4% (n=3)

reported 10-11; and lastly 1.3% (n=1) reported 12-13 and 14-15, respectively. Most providers

surveyed therefore had access to a BHC, with the majority number of contacts being 2-3 per

provider each month.

Table 6 presents the PCP satisfaction scores for each month as well as averaged across

the study months. Taken as a whole the PCPs generally agreed that they were more efficient (M

= 5.75, SD = .52, range 4-6), that patients were receiving improved care with BHCs in the

practice (M = 5.81, SD =.39, range 5-6), that they were likely to refer to BHCs (M = 5.92, SD =

Table 6

Provider Satisfaction Across Months

Month		Satisfaction Question #1 (More Efficient)	Satisfaction Question #2 (See more patients)	Satisfaction Question #3 (Improved Care)	Satisfaction Question #4 (Likely to Refer)	Satisfaction Question #5 (Recommend Services)
October	*M*	5.73	4.40	5.67	5.92	5.92
	n	11	10	12	12	12
	SD	.647	1.350	.492	.289	.289
November	*M*	5.70	4.40	5.60	5.90	5.90
	n	10	10	10	10	10
	SD	.483	1.578	.516	.316	.316
December	*M*	5.67	4.89	5.78	5.89	5.89
	n	9	9	9	9	9
	SD	.500	.928	.441	.333	.333
January	*M*	5.75	5.25	5.83	5.83	5.83
	n	12	12	12	12	12
	SD	.452	1.215	.389	.389	.389
February	*M*	5.80	5.20	5.90	6.00	6.00
	n	10	10	10	10	10
	SD	.632	.919	.316	.000	.000
March	*M*	5.89	5.11	6.00	6.00	6.00
	n	9	9	9	9	9
	SD	.333	1.167	.000	.000	.000
April	*M*	5.75	5.25	5.92	5.92	5.92
	n	12	12	12	12	12
	SD	.622	.866	.289	.289	.289
Total	*M*	5.75	4.94	5.81	5.92	5.92
	n	73	72	74	74	74
	SD	.521	1.174	.394	.275	.275

.28, range 5-6), and that they were likely to recommend BHC services to others (*M* = 5.92, *SD* =.28, range 5-6). These results suggested overall high satisfaction with BHC services. It was interesting that the omnibus mean for statement #2 ("I see more patients now that the BHC is a part of our practice"), was high but about a point lower (*M*= 4.94, *SD* =1.17, range 2-6) than for the other items. Thus, while PCPs may have felt more efficient thanks to BHCs, they did not report an equal impact in number of patient contacts. It is possible that with the PCPs each

initiating, on average, 2-3 contacts with the BHC per month, that this number was too low to result in a noticeable felt experience of serving more patients. It is worth noting, however, that while most provider reports did not appear to differ much over time, item #2 showed a gradual increase from its lowest means (4.40) in October and November (the first 2 months of data collection) and to a high of 5.25 in April (the last month of data collection).

DISCUSSION

Using descriptive data collected by behavioral health consultants (BHCs) embedded in primary care, the current study sought to document implementation of, and satisfaction with, integrated behavioral health services in a pediatric practice, as well as to demonstrate increased provider productivity. BHCs recorded 109 patient contacts over the course of 6 months, demonstrating a broad range of patient presenting problems from infancy to young adulthood. Consultations (both initial and follow-up) constituted the majority of patient contact, followed by intakes with the former taking a briefer, and more problem-focused approach. Intervention strategies were based upon empirically-supported treatments from behavioral/cognitive-behavioral traditions and generally linked to the identified presenting problem. Satisfaction data indicated overall favorable views of BHCs by both patients and providers across time. The potential economic impact of BHCs was indirectly measured through PCP report of productivity and indicated a modest influence in this area.

Central to the primary care behavioral health model is the use of consultations: contact with BHCs that typically occurs immediately after or during appointments with primary care providers and that involve brief, targeted interventions, also known as "warm hand-offs." Over the course of data collection, BHCs saw 51% of patients through consultations, both initial and follow-up, with initial sessions lasting on average around 30 minutes, consistent with

recommendations by experts in the field (O'Donohue, Byrd, Henderson, & Cummings, 2005; Robinson & Reiter, 2016) and the current literature on BHC model implementation, which has documented typical appointment lengths between 30 and 40 minutes (Cerdena-Meko et al., 2016; Funderburk et al., 2013; 2010). This is contrasted with intakes – patient contact that was designed to be lengthier and more evaluative in nature – which, not surprisingly, were on average around 60 minutes in length and made up 48% of all patient contact.

It could be argued that consultations, follow-up consultations, and medication checks should have occurred more frequently over the course of 6 months, given the incidence of behavioral health problems reported in primary care (Costello et al., 1988; Horwitz et al., 1992) and the model of care that this practice was based upon (Robinson & Reiter, 2016). Intakes in this practice were scheduled weekly and were a guaranteed patient contact, while other patient contact was, as the model prescribes, spontaneous. There are a variety of reasons why consultations may not have occurred more frequently in this practice, including PCP difficulties in identifying behavioral health problems, lack of availability of BHCs (part-time and only a few days a week), and/or an unclear referral system. These barriers to implementation have been discussed previously by others in the field (see Cerdena-Meko et al., 2016) and are common among newly integrated care practices. It is noted that over the course of data collection, the Medical Director of Behavioral Health Services and BHCs met often to brainstorm solutions to potential barriers, including increasing visibility, shadowing providers, and providing education on services. Our dataset, unfortunately, does not indicate whether these interventions improved access to BHCs across time and are therefore worthy of future study.

Data pertaining to identified problems demonstrated that most patients were seen for some sort of externalizing behavior problem. This was particularly the case for intakes, where a

large percentage of patients presented with inattention and hyperactivity, in addition to school concerns. Consultations had a broader range of identified problems (i.e., stress, sleep, toileting, health issues), but also a high rate of behavior problems. These data can be interpreted within the context of the current study's BHC consultation/referral system. As described above, intakes were typically the product of parent-driven referrals that were called in independently. It thus appears that most parents are seeking out their pediatrician for concerns with ADHD symptoms and associated school problems. In contrast, consultations were often provider-initiated and occurred during or after appointments with pediatricians and included more internalizing and health-related or developmental concerns (e.g., toileting, stress) in addition to behavior problems. The relative prevalence of disruptive behavior problems is not surprising given that these are the most common reasons that youth are typically referred to mental health services (Kazdin, 2003). However, the range of additional problem areas for which consultation was sought emphasizes the generalist skill set BHCs must have while working within a primary care setting (Hunter et al., 2009; Robinson & Reiter, 2016; Talmi et al., 2016). BHCs must able to move seamlessly from helping a parent identify the positive opposites of a school-age child's problem behavior to selectively reinforce, to implementing scheduled bathroom visits to facilitate the potty-training of a preschooler, to developing an activity schedule for a teen with depressive symptoms. The data suggest that BHCs were utilized in this manner, and arguably, given that many patients likely present with subclinical and/or age-appropriate developmental concerns, could have been sought out even more frequently.

What interventions did BHCs utilize? Given that the majority of identified problems indicated in all BHC contact were some sort of externalizing behavior problem, it comes as no surprise that the most frequent interventions were behavior management strategies (e.g., token

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economies, labeled praise, ignoring). General therapy strategies—interviewing, supportive listening, and psychoeducation—were also frequently reported, although it could be argued that BHCs were utilizing these strategies in almost every patient contact given the nature of the clinical work. As discussed previously, it is suspected that supportive listening, interviewing, and rationale provision were used to some degree in every BHC contact and were omitted due to BHCs emphasizing the most "dominant" or readily apparent targeted strategies. Interestingly, general therapy strategies were reported more frequently during consultations than intakes. This may simply be a reporting bias, but could also indicate a greater reliance on foundational strategies during this respective BHC contact. It is noted that previous descriptive studies in the adult literature (i.e., Funderburk et al., 2011; Bridges et al., 2015) also demonstrated high percentages of psychoeducation and supportive listening by BHCs during very similar types of patient contact, indicating that these approaches may be more typical "stand alone" interventions in integrated care models than expected. However, our data suggests that BHCs were not generally utilizing foundational strategies as a stand alone intervention during consultations, and were most often using them with more targeted intervention strategies.

It is notable that two interventions were not used at all: cognitive restructuring and defusion. This aligns with research conducted by Bridges et al. (2015), which showed that behaviorally-based interventions, such as behavioral activation and exposure, were most likely to be utilized in primary care for depressive and anxiety disorders, respectively. It is possible that BHCs felt that cognitive interventions were too time-consuming or difficult to implement during brief, problem-focused patient contact. It is also possible that there was a bias to utilize more concrete behavioral strategies, as a result of the clinical training of BHCs (i.e., emphasis on contemporary behavioral approaches). Given that internalizing problems occurred less frequently

than externalizing and that the average age of the child seen was 9 years old, it is perhaps also an artifact of incidence and/or developmental level of the patient.

Of relevance to evidence-based practice, the data suggest that BHCs were generally using empirically-supported strategies that aligned with the presenting problem, as has been demonstrated in descriptive adult studies (Funderburk et al., 2011; Bridges et al., 2015). There were some instances of discordance that, based upon the method of data collection, could be due to more than one identified problem being targeted in a consult (e.g., anxiety and noncompliance) or simply a BHC utilizing an inappropriate intervention (e.g., exposure for an externalizing behavior problem). Given that over half of all consultations involved more than one identified problem and that this discrepancy occurred infrequently, it is suspected that multi-problem presentations explain this finding.

Were patients and providers satisfied with the services provided? Surveys suggested overall high rates of satisfaction from both parties, consistent with satisfaction data collected by adult BHC practices (Funderburk et al., 2012; 2010) and further indicating the palatability of integrated care models in general. Although patient consultation satisfaction data were numerically higher than intakes, the differences between the two contacts were not statistically significant. Patients were therefore just as satisfied during a briefer, targeted contact as when they were with a BHC for a 60-minute intake session. Similarly, patients were equally satisfied whether they had seen a BHC previously or just seeing them for the first time.

The majority of providers reported having contact with a BHC over the course of data collection and their satisfaction scores were generally stable. Interestingly, the lowest satisfaction question was related to seeing more patients, suggesting that BHCs were having less of an impact on provider productivity. However, this score did appear to increase over time,

suggesting an improvement in BHC reach across the data collection period. As noted previously, there are several potential reasons why BHCs may not be utilized in an optimal way (e.g., provider inability to detect concerns or BHC availability). In the case of this study, only 109 patient contacts were recorded over 6 months. A recent study in pediatric primary care demonstrated that 204 patients were seen by BHCs over the course of 2.5 years, with a total of 244 patient encounters (Cerdena-Meko, et al., 2016). Thus, it appears that our practice was similar to, or potentially even more productive, than other pediatric BHC practices. Future research could delineate the ideal patient contact rate that meaningfully impacts PCP productivity and is additionally economically sustainable.

There were several limitations to this study. Electronic medical record data were not collected, which limited our ability to track patient contact more specifically. This data may have allowed us to better demonstrate economic productivity, as well as provided additional scope of practice data over a longer period of time. Further, although care was taken to record all patient contact, the fast-paced nature of integrated care made it likely that many patient contacts were not recorded, limiting the generalizability of the scope of practice and patient satisfaction data. It is unknown how many patient contacts were either not recorded or recorded inaccurately.

As with all survey data, there are limitations with patient and provider satisfaction questionnaires. Care was taken to make the data anonymous and voluntary, but we cannot rule out demand characteristics that may have influenced reporting of satisfaction with services by both patients and providers. Particularly with provider satisfaction, where there was a 56-75% return rate, completed questionnaires were based upon provider willingness to complete them. Therefore, it is possible that satisfaction scores are based upon highly motivated and/or satisfied

providers, as opposed to a representative sample. This does not, however, appear to be the case for patient satisfaction questionnaires, which had a return rate of 98%.

Additionally, given the method of data collection (i.e., paper-based recording) there was not enough information to calculate the complete economic impact of the BHCs in the practice over time. Further complicating this manner was the fact that BHCs were not billing for their services in this study, which substantially weakens any generalizability to real-world practices. To indirectly measure this aspect, provider self-reported increased productivity (i.e., seeing more patients) was used, indicating a small impact in this area (and in fact, the overall lowest satisfaction score across all questions). It remains to be seen if and how a fully integrated care model can be economically viable in pediatric primary care; that is, by saving money in the long-term (including yearly, but also across the lifetime of a patient), decreasing overall health care utilization, and increasing PCP efficiency and practice (Reiss-Brennan et al., 2016; Strosahl, 2002).

As suggested by Stancin and Perrin (2014), research in pediatric integrated care should attempt to target the following three goals: demonstrate clinical effectiveness of interventions, the cost effectiveness of the services, and the ability to expand the reach of care – the so-called triple-aim (Berwick, Nolan, & Whittington, 2008). By providing patient and provider satisfaction with services and outlining scope of practice of BHCs this study was a first step in researching quality of care. Future studies could continue to provide descriptive data on pediatric BHC practices, adding to the literature on what integrated care looks like in actual practice, while also monitoring behavioral health outcomes, cost efficiency improvements, and the capacity of a practice to treat more patients. Continued focused across this range of dependent variables is consistent with the population-health perspective that is the foundation of primary care

(Robinson & Reiter, 2016). Recently some authors have recognized a fourth aim; an aim that emphasizes the quality of a provider's work life (Bodenheimer & Sinsky, 2014). The results from the PCP satisfaction questionnaires are a first, indirect step in suggesting the presence of a BHC improved their work life. More direct measures related to burn-out/work stress would be useful, as would gathering such data across the range of care providers: PCPs, RNs, LPNs, CMAs, BHCs, etc. An integrated care team with all members functioning to the full extent of their scope of practice should not only be an effective team, but also a team whose members experience less burn-out.

In conclusion, this study provided preliminary data on the BHC practices employed in a large pediatric practice. They show how BHCs worked in an integrated care model, the patients they were seeing, the interventions they were utilizing, and what patients and providers thought of their services. The results illustrate much of what is considered promising about integrating BHCs into pediatric primary care, but also some of the challenges and the areas where additional data are needed as the field seeks to understand how to best offer collaborative medical and behavioral health care to the population.

REFERENCES

American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, & American Osteopathic Association (2007). *Principles of the patient centered medical home.* Retrieved from http://www.aafp.org/practice-management/transformation/pcmh.html.

Asarnow, J. R., Jaycox, L. H., Duan, N., LaBorde, A. P., Rea, M. M., Murray, P., Anderson, M., Landon, C., Tang, L., & Wells, K.B. (2005). Effectiveness of a quality improvement intervention for adolescent depression in primary care clinics: A randomized controlled trial. *Journal of the American Medical Association, 293,* 311-319.

Asarnow, J. R., Rozenman, M., Wiblin, J, & Zeltzer, L. (2015). Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: A meta-analysis. *Journal of the American Medical Association Pediatrics, 169,* 929-937.

Beach, S. R., Walker, J., Celano, C. M., Mastromauro, C. A., Sharpe, M., & Huffman, J. C. (2015). Implementing collaborative care programs for psychiatric disorders in medical settings: A practical guide. *General Hospital Psychiatry, 37,* 522-527.

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: Care, health, and cost. *Health Affairs, 27,* 759-769.

Blount, A. (2003). Integrated primary care: Organizing the evidence. *Families, Systems, & Health, 21,* 121-134.

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *Annals of Family Medicine, 12,* 573-576.

Bridges, A. J., Gregus, S. J., Rodriguez, J. H., Andrews, A. R., Villalobos, B. T., Pastrana, F. A., & Cavell, T. A. (2015). Diagnoses, intervention strategies, and rates of functional improvement in integrated behavioral health care patients. *Journal of Consulting and Clinical Psychology, 83,* 590-601.

Bryan, C. J., Corso, M. L., Corso, K. A., Morrow, C. E., Kanzler, K. E., & Ray-Sannerud, B. (2012). Severity of mental health impairment and trajectories of improvement in an integrated care primary care clinic. *Journal of Consulting and Clinical Psychology, 80,* 396-403.

Bryan, C. J., Morrow, C. E., & Appolonio, K.K. (2009). Impact of behavioral health consultant interventions on patient symptoms and functioning in an integrated family care clinic. *Journal of Clinical Psychology, 65,* 281-293.

Cerdena-Meko, C. L., Ellens, R. E. H., Burrell, K. M., Perry, D. S., & Rafiq, F. (2016). An exploration of behavioral health productivity and billing practice within pediatric primary care. *Journal of Pediatric Psychology, 41,* 1133-1143.

Chiles, J. A., Lambert, M. J., & Hatch, A. L. (1999). The impact of psychological interventions on medical cost off-set: A meta-analytic review. *Clinical Psychology: Science and Practice, 6,* 204-220.

Corso, K. A., Bryan, C. J., Corso, M. L., Kanzler, K. E., Houghton, D. C., Ray-Sannerud, B., & Morrow, C. E. (2012). Therapeutic alliance and treatment outcome in primary care behavioral health model. *Family, Systems, & Health, 30,* 87-100.

Costello, E. J. (1986). Primary care pediatrics and child psychopathology: A review of diagnostic, treatment, and referral practices. *Pediatrics, 78,* 1044-1051.

Costello, E. J., Edelbrock, C., Costello, A. J., Dulcan, M. K., Burns, B. J., & Brent, D. (1988). Psychopathology in pediatric primary care: The new hidden morbidity. *Pediatrics, 82,* 415- 424.

Croft, B., & Parish, S. L. (2013). Care integration in the patient protection and affordable care act: Implications for behavioral health. *Administration and Policy in Mental Health and Mental Health Services Research, 40,* 258-263.

Cummings, N. A., Kahn, B. I., & Sparkman, B. (1962). *Psychotherapy and medical utilization: A pilot study.* Oakland, CA: Annual Reports of Kaiser Permanente Research projects.

Cummings, N. A., O'Donohue, W. T., & Cummings, J. L. (2009). The financial dimension of integrated behavioral/primary care. *Journal of Clinical Psychology in Medical Settings, 16,* 31-39.

Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science, 196,* 129-136.

Fisher, L., & Ransom, D. C. (1997). Developing a strategy for managing behavioral health care within the context of primary care. *Archives of Family Medicine, 6,* 324-333.

Funderburk, J. S., Dobmeyer, A. C. Hunter, C. L., Walsh, C. O., & Maisto, S. A. (2013). Provider practices in the primary care behavioral health (PCBH) model: An initial examination in the Veterans Health Administration and United States Air Force. *Families, Systems, & Health, 31,* 341-353.

Funderburk, J. S., Fielder, R. L., DeMartini, K. S., & Flynn, C. A. (2012). Integrating behavioral health services into a university health center: Patient and provider satisfaction. *Families, Systems, & Health, 30,* 130-140.

Funderburk, J. S., Sugarman, D. E., Labbe, A. K., Rodrigues, A., Maisto, S. A., & Nelson, B. (2011). Behavioral health interventions being implemented in a VA primary care system. *Journal of Clinical Psychology in Medical Settings, 18,* 22-29.

Funderburk, J. S., Sugarman, D. E., Maisto, S. A., Ouimette, P., Schohn, M., Lantinga, L., Wray, L., Batki, S., Nelson, B., Coolhart, D., & Strutynski, K. (2010). The description and evaluation of the implementation of an integrated healthcare model. *Families, Systems, & Health, 28,* 146-160.

Gabbard, G. O., Lazar, S. G., Hornberger, J., & Spiegel, D. (1997). The economic impact of psychotherapy: A review. *American Journal of Psychiatry, 154,* 147-155.

Gatchel, R. J., & Oordt, M. S. (2003). Clinical health psychology in the primary care setting: An overview. In R. Gatchel & M. Oordt (Eds.), *Clinical health psychology and primary care: Practical advice and clinical guidelines for successful collaboration* (pp. 3-19). Washington, DC: American Psychological Association.

Gilbody, S., Bower, P., Fletcher, J., Richards, D., & Sutton, A. J. (2006). Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. *Archives of Internal Medicine, 27,* 2314-2321.

Groth-Marnat, G., & Edkins, G. (1996). Professional psychologists in general health care settings: A review of the financial efficacy of direct treatment interventions. *Professional Psychology: Research and Practice, 27,* 161-174.

Guck, T. P., Guck, A. J., Brack, A. B., & Frey, D. R. (2007). No-show rates in partially integrated models of behavioral health care in a primary care setting. *Families, Systems and Health, 25,* 137-146.

Horwitz, S. M., Leaf, P. J., Leventhal, J. M., Forsyth, B., & Speechley, K.N. (1992). Identification and management of psychosocial and developmental problems in community-based, primary care pediatric practices. *Pediatrics, 89,* 480-485.

Hunter, C. L., Goodie, J. L., Oordt, M. S., & Dobmeyer, A. C. (2009). *Integrating behavioral health in primary care: Step-by-step guidance for assessment and intervention.* Washington, DC: American Psychological Association.

Katon, W. (2012). Collaborative depression care models: From development to dissemination. *American Journal of Preventative Medicine, 42,* 550-552.

Katon, W., Robinson, P., Von Korff, M., Lin, E., Bush, T., Ludman, E., Simon, G., & Walker, E. (1996). A multifaceted intervention to improve treatment of depression in primary care. *Archives of General Psychiatry, 53,* 924-932.

Katon, W., Von Korff, M., Lin, E., Simon, G., Walker, E., Unützer, J., Bush, T., Russo, J., & Ludman, E. (1999). Stepped collaborative care for primary care patients with persistent symptoms of depression: A randomized trial. *Archives of General Psychiatry, 56,* 1109-1115.

Katon, W., Von Korff, M., Lin, E., Walker, E., Simon, G. E., Bush, T. Robinson, P., & Russo, J. (1995). Collaborative management to achieve treatment guidelines: Impact on depression in primary care. *Journal of the American Medical Association, 273,* 1026-1031.

Kazdin, A. E. (2003). Problem-solving skills training and parent management training for conduct disorder. In A. E. Kazdin & J. R. Weisz (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 241–262). New York: Guilford Press.

Kelleher, K. J., Hohmann, A. A., & Larson, D. B. (1989). Prescription of psychotropics to

    children in office-based practice. *American Journal of Diseases of Children, 143,* 855-

    859.

Kessler, R. C., Demler, O., Frank, R. G., Olfson, M., Pincus, H. A., Walters, E. E., Wang, P.,

    Wells, K. B., & Zaslavsky, A. M. (2005). Prevalence and treatment of mental disorders,

    1990 to 2003. *The New England Journal of Medicine*, *352,* 2515-2523.

Kessler, R., & Stafford, D. (2008). Primary care *is* the de facto mental health system. In R.

    Kessler & D. Stafford (Eds.), *Collaborative medicine case studies: Evidence in*

    practice (pp. 9-21). New York, NY: Springer.

Kolko, D. J., Campo, J. V., Kelleher, K., & Cheng, Y. (2010). Improving access to care and

    clinical outcome for pediatric behavioral problems: A randomized trial of a nurse-

    administered intervention in primary care. *Journal of Developmental & Behavioral*

    Pediatrics, 31, 393-404.

Kopta, S. M., & Lowry, J. L. (2002). Psychometric evaluation of the Behavioral Health

    Questionnaire-20: A brief instrument for assessing global mental health and the three

    phases of psychotherapy outcome. *Psychotherapy Research, 12,* 413-426.

Kroenke, K., & Mangelsdorff, A. D. (1989). Common symptoms in ambulatory care: Incidence,

    evaluation, therapy, and outcome. *American Journal of Medicine, 86,* 262-266.

Landis, S. E., Barrett, M., & Galvin, S. L. (2013). Effects of different models of integrated

    collaborative care in a family medicine residency program. *Family, Systems, & Health,*

    31, 264-273.

Mark, T. L., Levit, K. R., & Buck, J. A. (2009). Datapoints: Psychotropic drug prescriptions by

    medical specialty. *Psychiatric Services, 60*, 1167.

McDaniel, S. H., & deGruy, F. V. (2014). An introduction to primary care and psychology. *American Psychologist, 69,* 325-331.

Mumford, E., Schlesinger, H. J., Glass, G. V., Patrick C., & Cuerdon, T. (1984). A new look at evidence about reduced cost of medical utilization following mental health treatment. *American Journal of Psychiatry, 141,* 1145-1158.

Norquist, G. S., & Regier, D. A. (1996). The epidemiology of psychiatric disorders and the de facto mental health care system. *Annual Review of Medicine, 47,* 473-479.

O'Donohue, W. T., Byrd, M. R., Henderson, D. A., & Cummings, N. A. (Eds.). (2005). *Behavioral integrative care: Treatments that work in the primary care setting.* New York: Brunner-Routledge.

Peek, C.J. (2013). Integrated behavioral health and primary care: A common language. In M. R. Talen and A. Burke Valeras (Eds.), *Integrated behavioral health in primary care: Evaluating the evidence, identifying the essentials,* (pp. 9-31). New York: Springer.

Power, T. J., Mautone, J. A., Marshall, S. A., Jones, H. A., Cacia, J., Tresco, K., Cassano, M. C., Jawad, A. F., Guevara, J. P., & Blum, N. J. (2014). Feasibility and potential effectiveness of integrated services for children with ADHD in urban primary care practices. *Clinical Practice in Pediatric Psychology, 2,* 412-426.

Ray-Sannerud, B., Dolan, D. C., Morrow, C. E., Corso, K. A., Kanzler, K. E., Corso, M.L., & Bryan, C. J. (2012). Longitudinal outcomes after brief behavioral health intervention in an integrated primary care clinic. *Family, Systems, & Health, 30,* 60-71.

Reiss-Brennan, B., Brunisholz, K. D., Dredge, C., Briot, P., Grazier, K., Wilcox, A., Savitz, L., & James, B. (2016). Association of integrated team-based care with health care quality, utilization, and cost. *Journal of the American Medical Association, 316,* 826-834.

Richardson, L. P., Ludman, E., McCauley, E., Lindenbaum, J., Larison, C., Zhou, C., Clarke, G.,

Brent, D., & Katon, W. (2014). Collaborative care for adolescents with depression in

primary care: A randomized clinical trial. *Journal of the American Medical Association,*

312, 809-816.

Robert Graham Center: Center for Policy Studies in Family Medicine and Primary Care (2007).

The patient centered medical home: history, seven core features, evidence, and

transformational change. Washington, DC: Author.

Robinson, P. J., & Reiter, J. T. (2007). *Behavioral health consultation and primary care: a guide*

to integrating services. New York: Springer.

Robinson, P. J., & Reiter, J. T. (2016). *Behavioral health consultation and primary care: A guide*

to integrating services (2nd ed.). New York: Springer.

Rushton, J., Bruckman, D., & Kelleher, K. (2002). Primary care referral of children with

psychosocial problems. *Archives of Pediatric and Adolescent Medicine, 156,* 592-598.

Simon, G. E. (1992). Psychiatric disorder and functional somatic symptoms as predictors of

health care use. *Psychiatric Medicine, 10,* 49-59.

Smith, G. R., Rost, K., & Kashner, T. M. (1995). A trial of the effect of a standardized

psychiatric consultation on health outcomes and costs in somatizing patients. *Archives of*

 General Psychiatry, 52, 238-243.

Stancin, T., & Perrin, E. C. (2014). Psychologists and pediatricians: Opportunities for

collaboration in primary care. *American Psychologist, 69,* 332–343.

Strosahl, K. (1998). Integrating behavioral health and primary care services: The primary mental

health care model. In A. Blount (Ed.), *Integrated primary care: The future of medical*

 and mental health collaboration (pp. 139-166). New York: W.W. Norton.

Strosahl, K. (2002). Identifying and capitalizing on the economic benefits of primary behavioral

    health care. In N. A. Cummings, W. T. O'Donohue, & K. E. Ferguson (Eds.), *The impact*

    of medical cost offset on practice and research: Making it work for you (pp. 57-89).

    Reno, NV: Context Press.

Talen, M. R., & Burke Valeras, A. (2013). Introduction and overview of integrated behavioral

    health in primary care. In M.R. Talen & A. Burke Valeras (Eds.), *Integrated behavioral*

    health in primary care: Evaluating the evidence, identifying the essentials (pp. 3-8). New

    York, NY: Springer.

Talmi, A., Muther, E. F., Margolis, K., Bucholz, M., Asherin, R., & Bunik, M. (2016). The

    scope of behavioral health integration in a pediatric primary care setting. *Journal of*

    Pediatric Psychology, 41, 1120-1132.

Ward-Zimmerman, B., & Cannata, E. (2012). Partnering with pediatric primary care: Lessons

    learned through collaborative colocation. *Professional Psychology: Research and*

    Practice, 43, 596-605.

Appendix A

Behavioral Health Consultation Form

Behavioral Health Consultation Form

Age: _____   **Sex:** _____   **Ethnicity/Race:** _____

Type of Patient Contact (please circle):   Consultation   Follow-up consultation   Intake

Medication check   Telephone Consultation

Has the patient received BHC services before?   Yes   No   Don't Know

Reason for Referral (please circle):   Aggression   Anxiety   Defiance   Depression   Feeding

Health Issues   Hyperactivity   Inattention   Noncompliance   School Problems   Self-Harm

Sleep   Social Difficulties   Suicidal Ideation   Tantrums   Toileting   Other: _____

Intervention (please circle):   Acceptance/Mindfulness   Activity Scheduling   Cognitive Restructuring

Defusion   Differential Reinforcement   Effective Commands   Exposure   Goal Setting   Ignoring

Interviewing   Labeled Praise   Psychoeducation   Relaxation Skills   Removal of Privileges

Self-Monitoring   Sleep Hygiene   Special Time   Supportive Listening   Time-Out   Token Economy

Other: _____

Session Length: _____

---

1. How satisfied are you with the help you received from the BHC?

1	2	3	4	5	6
Extremely dissatisfied	*Moderately dissatisfied*	*Mildly dissatisfied*	*Mildly satisfied*	*Moderately satisfied*	*Extremely satisfied*

2. How satisfied are you with the amount of time you had with the BHC?

1	2	3	4	5	6
Extremely dissatisfied	*Moderately dissatisfied*	*Mildly dissatisfied*	*Mildly satisfied*	*Moderately satisfied*	*Extremely satisfied*

3. How likely are you to follow through on the plan discussed with the BHC?

1	2	3	4	5	6
Extremely unlikely	*Moderately unlikely*	*Slightly unlikely*	*Slightly likely*	*Moderately likely*	*Extremely likely*

4. How likely would you be to use the services of a BHC again?

1	2	3	4	5	6
Extremely unlikely	*Moderately unlikely*	*Slightly unlikely*	*Slightly likely*	*Moderately likely*	*Extremely likely*

Appendix B

Behavioral Health Consultation Activity Log

BHC Activity Log

BHC: _____ **Date:** _____

Type of Patient Contact (please circle): Consultation   Follow-up consultation

Telephone consultation   Intake   Medication check

Has the patient received BHC services before?   Yes   No   Don't Know

Age: _____ **Sex:** _____ **Ethnicity/Race:** _____

Reason for Referral (please circle): Aggression   Anxiety   Defiance   Depression

Feeding   Health Issues   Hyperactivity   Inattention   Noncompliance

School Problems   Self-Harm   Social Difficulties   Sleep   Stress   Suicidal Ideation

Tantrums   Toileting   Other: _____

Intervention (please circle): Acceptance/Mindfulness   Activity Scheduling

Cognitive Restructuring   Defusion   Differential Reinforcement   Effective Commands

Exposure   Goal Setting   Ignoring   Interviewing   Labeled Praise   Psychoeducation

Relaxation Skills   Removal of Privileges   Self-Monitoring   Sleep Hygiene

Special Time   Supportive Listening   Time-Out   Token Economy

Other: _____

Session Length: _____

Follow-up (please circle or elaborate): None   Provider   BHC

Referral: _____

Appendix C

Behavioral Health Consultation Provider Satisfaction Form

Behavioral Health Consultation: Provider Satisfaction

Please circle:

1. Have you had access to a BHC within the past month?   Yes   No

2. Approximately how many consults or intakes have the BHCs completed for you within the past month?

   0-1   2-3   4-5   6-7   8-9   10-11   12-13   14-15   16-17   18-19   20+

Please rate your level of agreement with the following statements:

1. The addition of a BHC in our practice has made my work more efficient.

1	2	3	4	5	6
Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

2. I see more patients now that the BHC is a part of our practice.

1	2	3	4	5	6
Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

3. My patients are receiving improved care now that the BHC is a part of our practice.

1	2	3	4	5	6
Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

4. I am likely to refer my patients to the BHC.

1	2	3	4	5	6
Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

5. I would recommend the services of the BHC to my colleagues.

1	2	3	4	5	6
Strongly disagree	*Disagree*	*Somewhat disagree*	*Somewhat agree*	*Agree*	*Strongly agree*

Appendix D

WMU Human Subjects Institutional Review Board (HSIRB)
Approval Letter

Date: December 2, 2015

To: Scott Gaynor, Principal Investigator
         Rachel Petts, Student Investigator for dissertation

From: Daryle Gardner Bonneau, Ph.D., Vice Chair

Re: HSIRB Project Number 15-12-10

This letter will serve as confirmation that your research project titled "Implementing the Primary Care Behavioral Health Model in a Pediatric Setting: Description, Satisfaction, and Potential Economic Outcomes" has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may **only** be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., *you must request a post approval change to enroll subjects beyond the number stated in your application under "Number of subjects you want to complete the study")*. Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: December 1, 2016

Appendix E

Bronson Methodist Hospital Institutional Review Board Approval

⊕ BRONSON
Methodist Hospital

February 1, 2016

Scott Gaynor, PhD
Department of Psychology
Western Michigan University
1903 W Michigan Ave
Kalamazoo MI 49008-5439

Dear Dr. Gaynor:

Subject: Approval for exempt review

Reference: **BMH-2015-0843** "Implementing the Primary Care Behavioral
               Health Model in a Pediatric Setting: Description, Satisfaction,
               and Potential Economic Outcomes"

The referenced protocol has been reviewed by James W. Carter, MD, FACP,
Chairman of the Bronson Methodist Hospital Institutional Review Board (IRB)
and determined to be exempt from IRB review. Exempt protocols do not
require annual continuing review by the IRB; however, **the investigator
must notify the IRB once the research project is complete for
appropriate closure.**

You are reminded that you may only conduct the research project as it is
currently written. Should the project change in any way, please notify the IRB
office immediately as the review and approval requirements may also change.

Should you have any questions or concerns, please do not hesitate to contact
the IRB office.

Thank you,

Lisa Beverwyk

Lisa Beverwyk, BS
IRB Coordinator
Bronson Methodist Hospital

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FAX: (269) 341-8675

enc.
cc: IRB File