Patient-Centered Medical Homes

and Attention-Deficit Hyperactivity Disorder Medication Beliefs and Adherence

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Doctor of Philosophy - Health Psychology

Prospectus: Patient-Centered Medical Homes
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**Problem Statement**

Roughly 10% of children in the United States have been diagnosed with Attention-Deficit Hyperactivity Disorder (ADHD; Centers for Disease Control and Prevention [CDC], 2013), which costs up to $44 billion per year, and is largely attributed to healthcare and education (Doshi et al., 2012). ADHD is a neurodevelopmental disorder that involves the inability to control impulsive behaviors and includes difficulty with paying attention (CDC, 2013). ADHD can lead to clinically significant academic and social impairment (Bussing et al., 2012; Express Scripts, 2014; Visser et al., 2014), increased occurrence of grade retention and failure to graduate (Robb et al., 2011), increased emergency room visits and unintended injuries (Merrill, Lyon, Baker, & Gren, 2009; Schwebel et al., 2011), increased risk of unsafe driving, suicidal behavior, eating disorders and parenthood at an early age (Barkley, Fischer, Smallish, & Fletcher, 2006; Reimer, Mehler, D’Ambrosio, & Fried, 2010).

Medication may provide children and adolescents with ADHD with a significant opportunity to achieve long-term treatment success if they adhere to the treatment regimen (Chacko, Newcorn, Feirsen, & Uderman, 2010). However, as many as half of all patients who have been prescribed medication, are non-adherent, resulting in over $100 billion in avoidable hospitalizations each year (Cutler & Everett, 2010; Sajatovic, Velligan, Weiden, Valenstein, & Ogedegbe, 2010). Medication non-adherence for mental illness can adversely affect treatment effectiveness and increase morbidity, hospitalizations, and relapse rates (Sajatovic, Velligan, Weiden, Valenstein, & Ogedegbe, 2010). Reasons attributed to medication adherence (which is only around 50%) are
patient-related (e.g., socioeconomic status; Brown & Bussell, 2011), medication-related (e.g., efficacy; Barner, Khoza, & Oladapo, 2011), and environment-related (e.g., parental beliefs; Ferrin & Taylor, 2011, Garbe et al., 2012; Zetterqvist, Asherson, Halldner, Långström, & Larsson, 2013). Dawood, Isham, Ibrahim, and Palaian (2010) contend that for children with chronic illness, the lack of parental understanding of their child’s illness, reticence about therapy efficacy, and concern about adverse effects of medication, impact children’s adherence. Thus, parents have the largest impact on their child’s medication initiation and adherence (Bai, Wang, Yang, & Niu, 2015).

Attempts to increase medication adherence include enhancing parental knowledge and information regarding ADHD, educating parents on the safety and the social acceptability of medication, behavior therapy, and psychoeducation (Bussing et al., 2012). The literature reveals that while some of these interventions (psychoeducation and behavior therapy) may have some incremental impact on increased medication adherence in the short term, substantial increases in medication adherence remain a challenge (Dean, Walters, & Hall, 2010; Hebert, Polotskaia, Joober, & Grizenko, 2013, Sitholey, Agarwal, & Chamoli, 2011). Methods to reduce the economic loss, social impairment, and poor clinical outcomes related to inadequate ADHD medication adherence are of significant importance to healthcare professionals and researchers (Bussing, et al., 2012, Lehmann et al., 2014, Schwebel et al., 2011).

The introduction of the Patient Centered Medical Homes (PCMH) in 1967 was designed to address some of these issues and has shown to reduce pediatric resource utilization (DeVries, Sridhar, Hummel, Breidbart, & Barron, 2012). PCMHs are pediatric or primary care physician offices that approach care delivery through the
provision of the following: (a) patient-centered care, (b) comprehensive care, (c) coordinated care, (d) compassionate care, (e) accessible care, including after hours, and (f) care that is committed to quality and safety (Patient-Centered Primary Care Collaborative, 2013). Emphasis is placed on the patient as a whole, and PCMHs integrate other medical and pharmacy personnel into the decision-making process of patient care. The PCMH offers services such as medication review, coaching and advice, as well as peer support and encouragement to patients, which, assist with their overall care experience.

Brown and Bussell (2011) suggest that PCMHs should contribute to increased medication adherence due to the type of patient-centered care delivered in a PCMH. However, parental beliefs and attitudes can be a barrier to adherence and persistence. Corkum, Bessey, McGonnell and Dorbeck (2015) argue parental perceptions of ADHD, as well as their acceptability of treatment options, are the central barriers to medication adherence. Researchers found when parents are provided with relevant information around ADHD treatment, adherence to medication can be increased (Bai et al., 2015; Corkum, Rimer, & Schachar, 1999). Current research indicates lack of knowledge about ADHD and its treatment, and poor emotional support, are the primary obstacles for medication initiation and persistence (Bai et al., 2015). PCMHs will be evaluated in this research to determine their influence on parental beliefs toward ADHD medication and their impact on medication adherence.

Purpose
The purpose of this study will be to determine if PCMHs have an impact on parental beliefs related to ADHD medication and ADHD medication adherence. To address this gap, I will conduct a quantitative study to survey parents of children with ADHD who do and do not have a PCMH and assess parents’ beliefs related to ADHD medication and their adherence to prescribed medication.

**Significance**

This research will help fill a gap in the literature by determining if PCMHs impact parental beliefs related to ADHD medication and medication adherence. Positive social change will result from this study by providing valuable outcomes data on PCMHs and contribute to what is known about ADHD medication adherence in youth. If this research demonstrates that PCMHs positively influence parental beliefs about ADHD medication and increase medication adherence, PCMHs could become the standard for healthcare for children with ADHD. These results would also have the potential to decrease ADHD-related healthcare spending, improve health outcomes, and increase school performance for this population. Additionally, this research will be important for those who make policies regulating healthcare and influence healthcare policy, such as the American Academy of Pediatrics and the National Committee for Quality Assurance.

**Background**

Selected articles related to the PCMH and their benefits, factors correlated with medication adherence, persistence in children with ADHD, parental attitudes and beliefs about ADHD medication, the theory of planned behavior, and support for research on ADHD are described here:
1. Ahmed and Aslani (2013), Charach and Fernandez (2013), Cutler and Everett (2010), Hebert, Polotskaia, Joober, and Grienzendo (2013), Luga and McGuire (2014), and O’Brien, Crickard, Lee, and Holmes (2013) provided research that discussed the influence of parents, family, and/or social circle on medication adherence.

2. Ajzen (1991) provides information and an explanation of the theory of planned behavior, which posits that a person’s attitude, subjective norm, and perceived behavioral control influence their intention to perform the targeted behavior.

3. Bai, Wang, Yang, and Liu (2015) and Hebert, Polotskaia, Joober, and Grizenko (2013) utilized the theory of planned behavior as the theoretical framework for their research around medication adherence in children with ADHD.

4. Bai, Wang, Yang, and Liu (2015) reported parents are the greatest influencers on medication initiation.

5. Corkum, Bessey, McGonnell, and Dorbeck (2015) provide information on the barriers to ADHD treatment and assert parental perceptions of ADHD as well as their acceptability of treatment options are the central barriers to medication adherence.

6. Corkum, Rimer, and Schacher (1999) provide data that suggests parental education related to ADHD treatment may positively impact treatment adherence.

7. Cutler and Everett (2010), Hamilton, Lerner, Presson, and Klitzner (2013), McGrady and Hommel (2013), and Toomey, Chan, Ratner, and Schuster (2011) asserted that medication non-adherence contributes to the use of healthcare
services and increased healthcare spending, while PCMH use is associated with improved outcomes and decreased healthcare utilization.

8. Sajatovic, Velligan, Weiden, Valenstein, and Ogedegbe (2010) suggested the need for more research that explores the relationship between medication adherence and clinical outcomes.

**Framework**

The Theory of Planned Behavior (TPB) (Ajzen, 1991) is an extension of the Theory of Reasoned Action (Fishbein & Ajzen, 1975). The theory asserts the intention of a person to perform a specific behavior is a reflection of the motivational influences on that behavior (Ajzen, 1991). According to Ajzen, the three components that influence behavior are: a) attitude, b) subjective norm, and c) perceived behavioral control. Ajzen further posits that the stronger one’s intention to engage in a behavior, the higher the probability that the behavior will occur. Subjective norms are indicative of a person’s beliefs related to how individuals in their social network perceive the behavior in question. A person’s belief in their ability is referred to as their perceived behavioral control (Azjen, 1991). Therefore, the more positive a person’s attitude and subjective norm, the greater one’s perceived control as well as the likelihood of the person’s intention to perform the targeted behavior. Parental beliefs and their adherence to ADHD medication will be assessed to determine if there are differences between the PCMH and non-PCMH groups. Because PCMHs are associated with improved patient outcomes, it is hypothesized that parents whose children have a PCMH, will also have more favorable beliefs toward ADHD and medication, and thus, are more likely to adhere to medication.
Research Questions

1. RQ1 – Quantitative: Is there an association between beliefs about medications, as measured by the Beliefs About Medicines Questionnaire, and the use of Patient Centered Medical Homes (PCMHs)?

   \( H_0 \): There is no significant difference in parental beliefs about medication between PCMH and non-PCMH groups.

   \( H_a \): There is a significant difference in parental beliefs about medication between PCMH and non-PCMH groups.

2. RQ2 – Quantitative: Is there an association between adherence to medication, as measured by parent’s Reported Adherence to Medication (RAM), and the use of Patient Centered Medical Homes (PCMHs)?

   \( H_0 \): There is no significant difference in parental adherence to medication between PCMH and non-PCMH groups.

   \( H_a \): There is a significant difference in parental adherence to medication between PCMH and non-PCMH groups.

Nature of the Study

The nature of this study will be quantitative and utilize a self-report survey to determine if PCMHs influence parental beliefs and adherence to ADHD medication. I will have one independent variable: Patient-Centered Medical Home, and two dependent variables: parental beliefs and parental ADHD medication adherence. I plan to use multivariate analysis of variance to evaluate the data. A quantitative survey will be the most effective method to obtain this data from a large number of parents.
Possible Types and Sources of Data

Survey data from the 2007 National Survey of Children’s Health will be used to determine whether the parent utilizes a PCMH or a non-PCMH for their child’s healthcare (NSCH; Toomey, Chan, Ratner, & Schuster, 2007). The NSCH is an accepted method for determining PCMH status and has been used in several peer-reviewed studies. The Beliefs About Medicines Questionnaire will be used to measure parent’s beliefs about medication (BMQ, Horne, Weinman, & Hankins, 1999). The BMQ questionnaire has been reviewed and demonstrates high reliability and validity for assessment of the beliefs about medicines construct. The parent’s reported adherence to medication will be used to assess the parent’s adherence to ADHD medication, and has shown high reliability and correlation with the BMQ (RAM, Horne, Weinman, & Hankins, 1999). The inclusion criteria are parents of children between 5 and 12 years of age who have received an ADHD diagnosis, and who have been prescribed ADHD medication for at least 3 months. The survey will be distributed through Survey Monkey.

Possible Analytical Strategies

A multivariate analysis of variance (MANOVA) will be used for data analysis in this study. MANOVA is appropriate for this study because it allows the researcher to determine if the independent variable has an effect on the dependent variables in each of the groups.
References


