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## Enhancing Parental Compliance in Managing Attention Deficit Hyperactivity Disorder

Claudia E. K-Ackah  
*Walden University*

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# Walden University

College of Nursing

This is to certify that the doctoral study by

Claudia Kwakye-Ackah

has been found to be complete and satisfactory in all respects,  
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## Review Committee

Dr. Edna Hull, Committee Chairperson, Nursing Faculty

Dr. Deborah Lewis, Committee Member, Nursing Faculty

Dr. Jonas Nguh, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost  
Sue Subocz, Ph.D.

Walden University  
2021

Abstract

Enhancing Parental Compliance in Managing Attention Deficit Hyperactivity Disorder

by

Claudia Kwakye-Ackah

MS, University of Maryland, School of Nursing, 2009

BS, Johns Hopkins University, 2006

BA, University of Maryland, Baltimore County, 2005

Project Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Nursing Practice

Walden University

December 2020

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## Abstract

Medication adherence in children is essential in ensuring that treatment approaches are successful and lead to positive health outcomes for the patient. However, with the young child largely dependent on the abilities and drive of parents and caregivers, adherence to the treatment regimen for children diagnosed with attention-deficit/hyperactivity disorder (ADHD) can be challenging. A systematic literature review using the preferred reporting items for systematic reviews and meta-analysis (PRISMA) model was used to locate, analyze, and synthesize sources to identify current evidence-based strategies used by health care providers for enhancing parental compliance in managing the child with ADHD. Reported in themes, evidence-based strategies for enhancing parental compliance include family engagement, behavioral intervention strategies, pharmacological interventions, and specific healthcare provider strategies. This project will impact positive social change by providing evidence-based guidelines on best practices to help parents whose children are diagnosed with ADHD adhere to their medication and treatment regimen. Parental medication compliance also has the potential for improving ADHD symptoms such as impulsiveness, overactivity, and inattention and as such improve the child's performance in school. Additionally, improved treatment compliance has the potential for reducing the number of hospital readmissions and visits to the emergency department. Last, if children with ADHD are managed effectively, they will grow to become productive members of society.

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## Dedication

This project is dedicated to my parents, who have been my rock throughout my life and my three sons: Brandon (10 years), Aiden (7 years), and Ryan (5 years). You three always motivate me to be a better version of myself.

## Acknowledgments

Special thanks to Dr. Edna Hull, my project chair, who guided me in developing this project. Without her guidance, this project would not have manifested. Dr. Deb Lewis for her guidance, and to the faculty of the DNP program at Walden University who enriched my learning.

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## Section 1: Nature of the Project

### **Introduction**

Attention-deficit/hyperactivity disorder (ADHD) is a form of mental illness that affects school-going children (Ahmed & Aslani, 2013). Described as a disorder, ADHD is managed through pharmacological and psychosocial approaches. There are three main class of symptoms that patients with ADHD experience, and these include behavioral (aggression, impulsivity, hyperactivity, fidgeting), cognitive (short attention span, absent-mindedness, forgetfulness), and mood (anger, mood swings, excitement, boredom; Ahmed & Aslani, 2013). Medication adherence in children is essential in ensuring that treatment approaches are successful and result in positive health of the patient. However, adherence to a treatment regimen is difficult, as the young patient entirely depends on the abilities and drive of their parents or guardians (Chiang et al., 2019). Parents and caregivers need to be provided with first-rate information regarding the illness condition of the child, treatment approach, medication, and the clinical expectations of healthcare workers. The barriers to medication adherence must be well identified to enable clinicians to develop appropriate strategies to improve adherence.

This is a doctorate in nursing practice (DNP) project. Its primary aim was to identify current evidenced-based approaches used by healthcare practitioners in improving parental medication and treatment adherence in children diagnosed with ADHD. Using a systematic review process for this project, I reviewed, analyzed, and appraised current strategies through which parental compliance positively affects treatment of the child. This project was designed to align with DNP Essentials I and III:

Scientific Underpinnings for Practice and Clinical Scholarship and Analytical Methods for Evidence-based Practice (American Association of Colleges of Nursing [AACN], 2006). Determining evidence-based policies and guidelines to improve parental compliance will lead to more successful management of the disease and improve the quality of life for children diagnosed with ADHD.

### **Problem Statement**

The gap in practice observed at my practice site, a psychiatric clinic, is that evidence-based guidelines for teaching parents and caregivers on measures for managing ADHD are inconsistent, not standardized, and at times outdated. Onsite observations indicate that information relayed to patients and caregivers is dependent on the individual provider and what they deem important. For example, once-a-day dosing versus dosing multiple times a day for treatment of ADHD varies among healthcare providers. Using evidence-based findings, researchers have determined that parents prefer daily dosing (Nafees et al., 2014) – a change in practice necessitating that providers consider prescribing long-acting drug therapy for ADHD. This DNP project was launched to address this gap in practice.

As reported in the literature, concise, reliable, and accurate information in guiding parents during the treatment of ADHD is needed (see Ahmed et al., 2014). If accurate information of ADHD is communicated by healthcare providers, treatment compliance has the potential for improving. The inference being made here was that parents of children diagnosed with ADHD need to understand the importance of the treatment regimen and be (a) given an opportunity to verify understanding, (b) encouraged to ask

questions, and (c) allowed to provide feedback on their experience on the treatment regimen.

Identifying evidence-based strategies for enhancing treatment compliance is important to nursing because if parents and caregivers adhere to treatment on a consistent, regular basis, compliance will aid in improving symptomology of the child being treated. Thus, treatment compliance could mean improved academic performance and improved self-confidence in the child. Adherence could also mean improved social behavior both at home and in school.

### **Purpose Statement**

Recognizing the lack of evidence-based strategies used by healthcare providers in this practice setting, the primary purpose of this DNP project was to identify current evidence-based strategies used by healthcare providers for improving parental medication adherence in children diagnosed with ADHD. More precisely, this DNP project employed a systematic review of the literature to identify and appraise current evidence-based strategies for enhancing treatment adherence in the management of ADHD. Findings from this literature review can lead to clear policies and guidelines that will guide clinicians in transmitting information to parents and caretakers. These policies and recommendations can be added to current clinical practice settings to ensure that treatment adherence rates increase. This doctoral project provides a means through which directives can be established and maintained as well as approaches to educate parents on ADHD. Hence, improving treatment adherence was the primary aim of this project.

### **Practice-Focused Question**

Recognizing the lack of evidence-based strategies used by healthcare providers for enhancing parental compliance in managing ADHD, the following question was used to guide this DNP project: What evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD? For the purpose of this DNP project, healthcare providers included psychiatric nurse practitioners, psychiatrist, and therapist.

### **Nature of the Doctoral Project**

To answer the practice-focused question, I carried out a systematic literature review using scholarly articles and books as well as primary research studies conducted in line with offering evidence-based findings for the mentioned problem statement. Additionally, reference lists of all articles, book chapters, and primary research papers were reviewed. The literature used in development of the project focused on the quadruple agenda of improved patient experience, improved population health, reduced cost, and improved care experience. Clinical databases including CINAHL, MEDLINE, and PubMed were used as primary sources of evidence for the project. Keywords such as *ADHD*, *caregivers*, *parents*, *treatment approaches*, and *treatment management* were used in the search for relevant literature.

To answer the practice-focused question, I conducted a systematic literature review. A systematic literature review is defined as a “review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyze data from the



studies that are included in the review” (Wright et al., 2007, p.1). More specifically, a systematic literature review was used to answer the practice-focused question on evidence-based strategies that have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD. The procedural steps that helped in obtaining the required data and resources for completing the project included selecting a systematic review process model, identifying inclusion and exclusion criteria, identifying sources, selecting sources, extracting data, conducting quality assessment of the sources reviewed, data analysis and presentation, and interpreting the results by identifying gaps in the literature (Connelly, 2009). Additionally, to carry out the DNP project, I obtained permission from Walden University’s Institutional Review Board (IRB). Then, sources of evidence were reviewed to identify evidenced-based treatment compliance strategies. Lastly, a systematic appraisal of the selected sources was completed.

As stated previously, the primary purpose of this DNP project was to identify current evidence-based strategies used by healthcare providers for improving parental medication and treatment adherence in children diagnosed with ADHD.

### **Significance**

The main stakeholders affected by the results of the project include ADHD patients, parents, and medical personnel. Establishing guidelines to aid clinicians in transferring vital information regarding ADHD will help improve the delivery of care as well as improve patient satisfaction (Bai et al., 2015). The recommendations designed in the doctoral project can be integrated into mainstream clinical practice to boost adherence

to treatment regimens for pediatric patients diagnosed with ADHD. Nursing in its current state requires significant improvement in the delivery of services, and this is achievable by employing a systematic approach with the identification of evidence-based strategies to address practice problems.

Findings generated from this DNP project have the potential for impacting social change by providing a basis for discussing issues that promote positive health outcomes and improve measures for providing quality care through enhanced approaches for medication treatment regimen. This project also recognizes important roles that advance practice nurses play in the improvement of healthcare. Thus, implications from this project have the potential for achieving positive social change by updating the current approaches used by healthcare providers for guiding parents and caregivers in achieving treatment compliance.

### **Summary**

In summary, this section served as an introduction to the DNP project. Its goal was to define the purpose of the DNP project. Adhering to the treatment regimen prescribed by clinicians is essential for ensuring that patients receive adequate treatment for ADHD. For children, this in part has to be initiated and implemented by the parent or guardian. Parental noncompliance results from various reasons, including lack of knowledge concerning treatment regimens. Parents and caregivers need guidance so as to follow treatment approaches prescribed by clinicians. Stakeholders must each fulfill their specific roles in ensuring compliance to treatment. Section 2 includes models/frameworks

for the DNP project, relevance of the problem to nursing practice and role of the DNP student.

## Section 2: Background and Context

### **Introduction**

The effectiveness of drug interventions is important in achieving treatment outcomes with children diagnosed with ADHD (Charach & Fernandez, 2013). As reported in the literature, a crucial reason for the suboptimal outcome in the management and treatment of ADHD is related to poor medication management (Charach & Fernandez, 2013). The implication here, and thus the impetus for this DNP project, is that the first step in managing ADHD begins with the information given to parents and caregivers by the healthcare provider. Thus, this DNP project was designed to answer the question, what evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD?

The purpose of this DNP project was to identify current evidence-based strategies used by healthcare providers for improving parental treatment adherence in children diagnosed with ADHD. Symptoms of ADHD are managed using both pharmacological and non-pharmacological measures (Thompson & Thompson, 2020). For children, it is the role of parents to ensure that symptoms of the illness are managed well by proper and timely intake of medication (Lange et al., 2018). This section focuses on models that inform the DNP project. Additional topics include relevance of the practice problem, the local background of the problem as it is applied to the practice site, and last, the role of the DNP student in developing the project.

## **Concepts, Models, and Theories**

Nursing practice is based on certain approved concepts, models, and theories that mainly explain nursing procedures practiced by nurses in various situations. The concepts, models, and theories described in this evidenced-based project highlight some of the practices related to medication and treatment adherence in children diagnosed with ADHD. This DNP project was guided by four models: The health belief model (HBM), the theory of reasoned action and planned behavior, the transtheoretical model of change and the illness career model. The sections that follow provide descriptions of the models along with a discussion and summary of primary writings by key developers of the models.

### **The HBM**

The HBM is an early model that was designed to explain health-related behavior. The model was developed by several social psychologists, including include Howard Leventhal, Godfrey Hochbaum, Irwin Rosenstock, and Stephen Kegeles, who all worked in the Public Health Service in the United States (Champion & Skinner, 2008). The primary constructs explained in this theory are taken from various cognitive theorists. Some of these constructs include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, modifying variables, cues to action, and self-efficacy (Sulat et al., 2018). Perceived susceptibility refers to a patient being subjective in assessing the possibility of contracting a certain ailment, thus taking precautions to avoid getting the disease. Perceived severity refers to a view by an individual in assessing the severity of the disease by reviewing whether it is life-threatening or causes plenty of pain. Perceived

barriers refer to the challenges an individual encounters while trying to make a change in behavior to avoid contracting a particular disease.

The modifying variables of the HBM include certain characteristics such as age, race, or sex that indirectly or directly influence health-related behaviors that may affect perceived seriousness, barriers, and susceptibility (Champion & Skinner, 2008). Cues to action refer to certain actions or triggers that influence an individual to make behavior changes. There are two types of cues. These are physiological and external cues (Champion & Skinner, 2008). Self-efficacy was recently added, it describes how an individual views their ability to engage in an action that aids them to avoid the contraction of a disease (Champion & Skinner, 2008). The HBM primarily focuses on the preference of accepting or rejecting the use of ADHD medication for children based on the family's understanding of risks and benefits associated with following a treatment regimen.

The severity of symptoms exhibited by the child influences a parent's decision to allow their child to take the prescribed medication. The HBM can be applied especially when trying to educate parents as well as their children. This is done by sharing the right information about ADHD medication and demystifying some myths regarding the application of the prescribed treatment regimen (Sulat et al., 2018). Discussing potential risks and benefits of the prescribed medication and treatment will help providers identify parent's beliefs and attitudes towards treatment management and thus educate accordingly. The majority of patients are concerned about the long-term psychological side effects of the medication, as it's believed that children may lose their cognitive

abilities with continued use of ADHD medications (Au & Gunzenhauser, 2017). The role of healthcare providers is to enlighten parents and patients on the best possible approach for managing symptoms and also educate on crucial matters, such as medication side effects (Au & Gunzenhauser, 2017).

The various concepts described in the HBM are utilized in explaining what influences parents to aid in ensuring treatment adherence for children with ADHD. The concepts developed by the theorists also aid clinicians in developing appropriate medication and treatment adherence strategies that parents and their children can adopt. The concepts give a personal view of what influences treatment adherence by the ADHD patient, especially adolescents who may have a degree of control on how and when they take ADHD medication. The HBM supports the clinical problem I face as it offers clinicians an appropriate way to obtain a patient's or parent's view regarding health-related behaviors and, in this instance, medication adherence.

### **Theory of Reasoned Action and Planned Behavior (TRAPB)**

The theory of planned behavior was first developed by Icek Ajzen, whereas the theory of reasoned action was introduced by Martin Fishbein (Steinmetz et al., 2016). The theory of reasoned action and planned behavior began as the model of reasoned action, which was initially an attempt to explain how an individual intends to engage in particular health-related behaviors at a specific time and place (Montano & Kasprzyk, 2015). Additionally, the theory reviewed behaviors that an individual exercises self-control, as well as pointing out that behavior is influenced by intentions and ability. The model is based on six constructs: attitudes, behavior intention, subjective norms, social

norms, perceived power, and perceived behavioral control (Montano & Kasprzyk, 2015). Attitude refers to the negative or positive evaluation one has in engaging in certain behaviors. Behavioral intention refers to motivational influences that may determine if one engages in a behavior. Subjective norms entail the general belief of whether a large part of the community approves or disapproves of certain behavior. Perceived power refers to an individual's ability to overcome factors that may influence them to engage in certain behaviors. Last, perceived behavior control refers to one's view on the ease or difficulty in engaging in certain behavior.

The TRAPB theory contains an aspect of the HBM model, although this theory primarily focuses on a patient's or parent's intention to adhere to the treatment plan and the pill-taking behavior practiced. An essential component of the theory discusses the unique role of routine pill-taking habits to the adherence of treatment and medication regimen. It is necessary to engage the child and parent in activities that will remind them of the medication to take. This action will promote adherence and hence develop into a routine activity. Actions such as parental supervision, memory aids, and daily routines will aid the child and parent to maintain treatment compliance and monitor the change in behavior after taking the prescribed medication (Furukawa et al., 2017).

The TRAPB also explains the transition of responsibilities when treating the adolescent patient. Managing symptoms in adolescents requires that the clinician and parent understand the point of view of the patient, as it directly influences their decision to adhere to the treatment. In youth, the adverse effects of ADHD medication may include embarrassment, stigma, and peer pressure, which can all lead to medication



refusal. Adjusting medication and medication dosages may result in a balance of effectiveness and side effect profile. The majority of families point out that accepting medication treatment is the most challenging decision (Furukawa et al., 2017). The model is essential in trying to predict medication adherence by reviewing the various constructs of the theory. The theory is vital as it enables clinicians to determine whether parents will aid their children in adhering to the treatment regimen based on their motivation. Thus, clinicians can employ the knowledge offered by the various model constructs to predict if parents will aid in managing treatment for children with ADHD.

### **Trans-Theoretical Model of Change (TTM)**

The TTM was established in 1977 by two theorists, namely James Prochaska and Carlo Di Clemente (1994). The model is aimed at assessing the readiness of an individual to engage in certain health-related behaviors and further notes the process one can adopt while trying to make behavioral changes. The TTM offers insight into the ability of a patient's health behavior to change over time (Prochaska & DiClemente, 1994). There is a difference in terms of readiness for a transition between the parent and the patient. The first step a clinician should take is to evaluate the level of motivation of the patient when they introduce the idea of using medication when beginning the treatment and during the treatment period.

The TTM model is based on a variety of models that include the stages of change, which entail a process individuals undergo while trying to make behavioral changes (Prochaska & DiClemente, 1994). The steps include precontemplation (not ready), contemplation (getting ready), preparation (ready), action, maintenance, and termination

(Prochaska & DiClemente, 1994). The second construct is a decisional balance, where an individual considers the positive and negative effects of adopting a particular behavior before adopting it for good. The self-efficacy construct is based on Bandura's self-efficacy model, which describes a certain degree of confidence that one may engage in certain risky behaviors and not relapse to the negative behaviors they are avoiding. Levels of change is the last final construct that describes the complexity of problem presentation concerning five levels that include situational problems, current maladaptive cognitions, system conflicts, and extended interpersonal conflicts (Prochaska & DiClemente, 1994).

A clinician must determine the appropriate time to suggest the use of medication. In most cases, offering a solution that includes the use of medication before the parent considers other options and understanding the diagnosis is met with stern rejection. The inclusion of the child in decision-making also means that medications should be given when the patient has understood the change (Furukawa et al., 2019). The model can be used to predict the readiness of a child, especially teenagers, in accepting certain medications as their input is necessary to determine how simple or complex adherence to medication may materialize. Initiating medication treatment with a short trial may assist in reassuring parents on the effectiveness of using psycho-stimulant medicine. The use of immediate-release medication offers greater clarity to parents on the benefits of adopting the medication treatment approach.

The constructs of the **ICTM** can be used to initiate the process of change systematically to both patient and their parents to guarantee medication adherence. This

will aid in perhaps gearing the mindset of the parent towards using medication (Steinmetz et al., 2016). Monitoring of the child's response should be followed after initiating medication treatment to keep track of medication side effects. Both parents and patients may have difficulties adapting to the change, which comes with a diagnosis of ADHD and hence taking of psychotropic medications. The constructs of the model can be applied, especially in accepting the new normal of the family.

### **Illness Career Model**

The illness career model is well illustrated by Pescosolido (2011) in her publication of how social networks and settings affect mental illness and the use of medical services to better care of the ill members of society. The social network can significantly influence medication adherence for patients with ADHD, depending on the stand a certain society takes on mentally ill patients. Access to service is also influenced by the attitudes of clinical staff or the availability of mental health services. Parents who are at the center of most social constructs and systems may influence medication adherence and the long-term well-being of a child with ADHD.

The illness career model works on illustrating behavior change over time and the relationship between the child and parent, school, family, and the entire community. Friends, family members, and neighbors usually question the decision to use medication for the management of ADHD symptoms and can influence the timing of decisions. The decision process is also complicated due to the sentiments of influential members of the community, such as religious leaders and media. Hence, decision-making and following

the treatment regimen will require the clinician or the family's therapist to be easily accessible to offer assistance.

The main argument of the illness career model is that society will directly determine how a mentally ill patient will be taken care of both at home and the hospital (Pescosolido, 2011). A society that abhors and shuns mentally ill individuals will likely influence a parent to not adhere to the medication regimen recommended for their child. The model explains the nature of assistance a mentally ill patient may receive while residing in a particular societal construct.

### **Relevance to Nursing Practice**

The DNP project sought answers to the question, 'what evidence-based strategies have emerged in the literature in the past ten years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD?' A review of the literature on this practice has largely focused on the factors that influence certain health-related behaviors that include medication adherence for ADHD patients (Ahmed et al., 2014). If accurate information on ADHD is communicated by healthcare providers, treatment compliance has the potential for improvement. There appears to be a need for concise, reliable, and accurate information in guiding parents during the treatment of ADHD (Ahmed et al., 2014). The inference being made here is that parents of children diagnosed with ADHD need to understand the importance of the treatment regimen and be given an opportunity to verify understanding, encouraged to ask questions, and allowed to provide feedback on their experience on the treatment regimen. Identifying evidence-based strategies for enhancing treatment compliance is important to nursing

because if parents and caregivers adhere to treatment on a consistently regular basis, compliance will aid in improving symptomology of the child being treated. Thus, treatment compliance could mean improved academic performance and improved self-confidence in the child. Adherence could also mean improved social behavior both at home and in school.

Nurses play a significant role in ensuring the adoption and adherence of medication. Nurses and other clinicians have been trained to communicate effectively, which aids in the first step in accepting medication treatment. There is, however, a gap in practice where most nurses fail to follow-up on the patient after the parents have accepted the treatment option (Shafrin et al., 2017). Most nurses may place efforts in championing for treatment approaches but fail to make follow-ups and evaluate the effects and efficiency of the treatment. Concise follow-up policies should be initiated to ensure that the treatment regimen prescribed effectively manages the symptoms of ADHD in children. Nurses should aid parents and their children in preparing for change.

### **Local Background and Context**

This project began with observations made by the DNP student on the lack of current evidence-based strategies used by healthcare providers for enhancing parental medication and treatment compliance in children diagnosed with ADHD. Since the project was a systematic review of the literature, there was not a specific setting for accomplishing it. My current workplace, a psychiatric outpatient clinic, has a population of 150 patients. We specialize in providing mental health services, including ADHD to

patients across the lifespan. The clinic aims at establishing a means to promote adherence to treatment to improve the lives of mentally ill patients.

Failing to adhere to the treatment regimen of children diagnosed with ADHD can lead to the development of new symptoms and increased negative views related to stigma, the inability to perform well academically, lack of positive social life, and possible development of new psychological illnesses. Medication and treatment adherence lead to the development of positive change in the lives of patients. There is evidenced-based literature indicating that medications prescribed for children diagnosed with ADHD are useful, and in most cases, has more significant benefits than risks (Shafrin et al., 2017). Failure to educate parents on the importance of medication and treatment adherence can develop into more significant societal problems.

The American Nurses' Association has a responsibility for ensuring that parents adhere to treatment regimen. Society has a liability to ensure that children with ADHD are well accommodated in the community and given a chance to live relatively normal lives, even if it involves the use of psycho-stimulant medications (Livesley, 2018). Similarly, healthcare institutions have a role in ensuring quality delivery of services to children. This consists of initiating follow-up policies for medication treatment of children diagnosed with ADHD (Esbjørn et al., 2019). The majority of healthcare institutions have a unique vision and mission of creating treatment approaches that are feasible for vulnerable individuals in the community, such as children. Offering superior nursing services is part of the vision and mission of healthcare institutions (Esbjørn et al., 2019). This DNP project exemplifies how healthcare providers can implement specific

evidence-based policies to aid parents in managing and adhering to medication management in treating children diagnosed with ADHD.

### **Role of the DNP Student**

As a psychiatric nurse practitioner, I have a professional connection to this DNP project. This connection is based on the fact that I offer mental health services to individuals across the lifespan, which includes children diagnosed with ADHD. The primary reason for developing this evidenced-based project was to identify current evidenced-based approaches used by nurses in improving parental treatment compliance in children diagnosed with ADHD. Using a systematic literature review approach, this student reviewed, critically appraised and synthesized literature on current evidence-based strategies used by health care providers to enhance treatment compliance by parents or caregivers of children diagnosed with ADHD. Nurses have a unique role in providing personalized health services, as nurses often work closely with patients and their families during illness. The close relationship nurses create with patients puts them in a unique position to oversee issues such as patient progress during treatment.

My chief role in the DNP project was to query evidenced-based literature on best practices for improving medication and treatment adherence of parents who have children diagnosed with ADHD. Information obtained from the review will then be recommended to my practice site to improve medication adherence and, thus, the quality of care of patients and their families. My motivation to pursue this project is that there is a gap in practice at my place of employment, a psychiatric clinic. More specifically, is that observations indicate that evidence-based guidelines for teaching parents and caregivers

on measures for managing ADHD are inconsistent, not standardized, and at times outdated. Onsite observations suggest that information relayed to patients and caregivers is dependent on the individual provider and what he/she deems necessary. For example, once a day, dosing versus dosing multiple times a day for the treatment of ADHD varies among healthcare providers. Using evidence-based findings, parents prefer daily dosing (Nafees et al., 2014) - a change in practice necessitating the need for providers to consider prescribing long-acting drug therapy for ADHD.

While I work in a psychiatric clinic, I had no personal bias tied to the project. Last, while this clinic serves as my practice setting, I had no personal biases tied to the findings. The content of this project enhances clinical practice with children diagnosed with ADHD. To avoid biases, a doctorate-prepared nurse was utilized to identify and assess the quality of the sources used in the review.

### **Summary**

Adhering to the treatment regimen prescribed by health care providers is essential for ensuring that patients receive adequate treatment. Various theories and models were discussed to offer scholarly evidence on approaches used to aid parents in managing and adhering to medication treatment regimens prescribed by providers. The project also provided insights into the importance of providing best practices that aid in the improvement of medication and treatment adherence of children diagnosed with ADHD. This section dived into the relevance of the DNP project to nursing practice, its local background, and finally, my role as it relates to this evidenced-based project. Section 3



addresses the steps used to carry out the systematic literature review and to answer the practice-focused question.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

The effectiveness of drug interventions is vital in achieving treatment outcomes with children diagnosed with ADHD (Charach & Fernandez, 2013). Parental compliance has been reported as among the essential factors that may aid in the management of ADHD symptoms among children (Charach & Fernandez, 2013). Children primarily depend on their parents in adhering to a treatment regimen, thus, parents need to focus on medication and treatment compliance (Masiran et al., 2019). Medication adherence in children is essential in ensuring that treatment approaches are successful and result in positive health care outcomes of patients. However, adherence to treatment is difficult, as pediatric patients entirely depend on the abilities and drive of their parents or guardians (Chiang et al., 2019). According to Treuer et al. (2016), education is essential for parents or caregivers as well as their families in understanding the basics of the child's illness and the treatment plan so as to encourage adherence. Bai et al. (2015) also supports the argument by noting that understanding the illness state and the negative consequences of uncontrolled ADHD promotes treatment adherence. However, despite these assertions, there remained a gap in the literature on best approaches employed by healthcare providers for addressing medication and treatment compliance among parents and caregivers. If accurate information on ADHD is communicated by healthcare providers, treatment compliance has the potential for improving.

### **Practice-Focused Question**

There appeared to be a need for concise, reliable, and accurate information in guiding parents during the treatment of ADHD (Ahmed et al., 2014). If accurate information on ADHD is communicated by healthcare providers, treatment compliance has the potential for improving. The inference being made here was that parents of children diagnosed with ADHD need to understand the importance of the treatment regimen and be given an opportunity to verify understanding, encouraged to ask questions, and allowed to provide feedback on their experience on the treatment regimen.

The gap in practice observed at my practice site, a psychiatric clinic, was that evidence-based guidelines for teaching parents and caregivers on measures for managing ADHD are inconsistent, not standardized, and at times outdated. Onsite observations revealed that information relayed to patients and caregivers is dependent on the individual provider and what they deem necessary. For example, once-a-day dosing versus dosing multiple times a day for the treatment of ADHD varies among healthcare providers. Despite advances in the treatment of children with ADHD, there remained a gap in the literature on best approaches for addressing medication and treatment compliance among parents and caregivers. Because of the lack of evidence-based strategies used by healthcare providers for enhancing parental compliance in managing ADHD, the following question was used to guide this DNP project: What evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD? Recognizing the lack of evidence addressing this practice problem, I conducted a

systemic review of the literature. Broadly speaking, a systematic review of the literature is defined as “review of the evidence on a formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research” (Wright et al., 2007, p.1).

### **Sources of Evidence**

Working in collaboration with the Walden University Library Liaison, I located sources for this project that included both primary and secondary resources to answer the practice-focused question. Both primary and secondary sources of data were used to highlight and answer the practice-focused question, what evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD? To answer this question, I carried out a systematic literature review using scholarly articles and books as well as primary research studies conducted in line with offering evidence-based findings for the identified problem statement. Additionally, reference lists of all articles, book chapters, and primary research papers were reviewed. The literature used in the development of the project focused on the quadruple agenda of improved patient experience, improved population health, reduced cost, and improved care experience. Clinical databases including CINAHL, MEDLINE, and PubMed were used as primary sources for the project. A review of previously conducted research reports specific to the practice problem offered insights into addressing the primary question of this evidence-based project. Previous research provided an accurate history of what form of strategies clinicians have been utilizing (ten Ham-Baloyi & Jordan, 2016). Data were obtained from

evidence-based sources related to the practice problem. It was feasible to accomplish this project in the identified context since findings were based on sources collected and reported using a systematic literature review approach. This project focused on the identification and critical appraisal of current evidenced-based strategies on parental factors that influence compliance to treatment. Inclusion criteria for the project were evidenced-based sources focusing on patients ages 6-17 years old and clinically diagnosed with ADHD. To address currency, sources published in the last 10 years were reviewed with sources written in English. A review of previously conducted research offered insights into addressing the primary question of the DNP project. Previous research also provided an accurate history of what form of strategies clinicians have employed in practice (ten Ham-Baloyi & Jordan, 2016).

### **Published Outcomes and Research**

The use of established sites, databases, and search engines enabled me to locate a wide range of sources for obtaining information regarding the practice-focused question in this evidence-based paper. Various databases and search engines were used in the search including Circumpolar Health Bibliographic Database (CHBD), Cumulative Index to Nursing and Allied Health (CINAHL), MEDLINE Plus, PubMed, JURN, and Google Scholar. The majority of the databases and search engines used were related to medicine, as the primary question focused on issues related to medicine and treatment procedures. The selected databases and search engines provided accurate information about current and previous evidence-based treatment options used by healthcare providers in ensuring children and adolescents adhere to medication with the aid of their parents (Wink &

Todd, 2018). Selected databases provided evidence needed to answer the practice-focused question. The databases additionally contained information that is provided by established institutions such as the U.S. Department of Health and Human Services and U.S. National Library of Medicine.

Search terms are the keywords used in searching for information related to the evidence-based practice question. Keywords such as ADHD, caregivers, parents, treatment approaches, and treatment management were used in the search for relevant literature. Other search terms used in various databases included “children with ADHD,” “management of ADHD in children,” “symptoms management in ADHD patients,” “role of parents in ADHD symptom management,” “clinical strategies in ADHD symptom management,” “evidence-based medication adherence strategies” and “medication adherence history in ADHD children.” The search of databases and search engines spanned as far back as 10 years. The rationale for this approach was to ensure that a wide range of information across the decade was quarried regarding the practice-focused question. Also, the reason for searching the databases spanning a decade was that the healthcare field is a continuous revolving field. Thus, strategies used in improving medication and treatment adherence of ADHD symptoms is ever evolving as the field of nursing and healthcare evolves. Both primary and secondary sources were used to answer the practice-focused question guiding this project. Primary sources included original research designed to address the practice problem. Secondary sources included published reports written by authors other than the originator. For this project, secondary sources included summaries of research, literature reviews, descriptions of clinical projects, and

discussions of models and theories reported in articles, books and other sources as reported by authors other than the original author. The goal was to conduct an exhaustive and comprehensive review of the literature by identifying, appraising, and synthesizing evidence-based sources. Specifically, the search focused on strategies that have emerged in the literature on best practices used by healthcare providers to enhance parental compliance in managing ADHD. The search of the databases was specific by ensuring the inclusion of specific key terms, searching appropriate databases, and sourcing evidenced-based research papers.

### **Protections**

As this was a systematic review of the literature, there were no human subjects or partner organization. However, Form A of the DNP Scholarly project manual was completed and submitted as a requirement for obtaining approval for carrying out the project. The form was submitted to the Walden University IRB. Researcher bias was addressed by following the established parameters of the literature search (i.e., inclusion and exclusion criteria) and publication of all information, whether favorable or not, based on the focus of the literature search (Pannuci & Wilkins, 2010).

### **Analysis and Synthesis**

A systematic literature review was used to answer the practice-focused question on evidence-based strategies that have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD. This project did not involve the practical use of human subjects for data collection. However, it was important to ensure ethical practices were followed. The

reviewed work was treated accurately and fairly without bias or prejudice. This process was done through a comprehensive search of evidence-based literature which I analyzed and synthesized objectively. To avoid biases, a doctorate-prepared nurse was consulted to identify and assess the quality of the sources used in the review.

Using the University's DNP Approved Manual for Systematic Reviews as a guide, procedural steps for carrying out the project included selecting a systematic review process model, identifying inclusion and exclusion criteria, identifying, and selecting sources. The PRISMA model was used to show the number of sources reviewed for the project (Moher et al., 2009). More specifically, I used the PRISMA model to document the phases of the review, number of sources identified in each phase, number included and excluded, and final number of sources analyzed and synthesized for the review.

I analyzed the selected studies by extracting data; conducting quality assessment of the sources reviewed, data analysis, and presentation; and interpreting the findings (see Connelly, 2009). Additionally, selected sources included in the review were assessed, evaluated, and assigned levels of hierarchy evidence according to Fineout-Overholt et al.'s (2010a, 2010b, 2010c) criteria. A literature review matrix table was created and used to document evidence-based sources included in the systematic review. And while working under the direction of my DNP committee, I also sought assistance from the university research library liaison to assist with bibliographic database searches and in locating evidence-based sources that were used to answer the practice-focused question. Last, the final report was developed using the Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0 Guidelines, 2017) criteria.



## **Summary**

This section highlights the sources of evidence that were used to answer the practice-focused question. The section described sources of evidence that were used in the collection and analysis of evidence. The sourcing of evidence entails identifying published outcomes and research. Section 4 serves as a report of findings and recommendations for clinical practice along with strengths and weaknesses of the DNP project.

## Section 4: Findings and Recommendations

### **Introduction**

This DNP project was undertaken to address the local problem of inconsistent use of evidence-based measures used by health care providers in managing ADHD, a form of mental illness that affects mostly school-age children. Medication adherence in children is essential in ensuring that treatment approaches are successful and result in positive health of the child. However, adherence to the treatment regimen is difficult, as the young child entirely depends on the abilities and drive of parents and caregivers. Thus, employing a systematic literature review, the purpose of this DNP project was to identify current evidenced-based strategies used by healthcare providers for improving parental medication and treatment compliance in children diagnosed with ADHD.

Section 4 of this DNP serves as a report on the findings and recommendations generated from the systematic literature review. This section begins with details of the search strategy used for selecting and analyzing sources included in the review. A report of findings and implications generated from the review is also included. Section 4 ends with recommended solutions to address the practice problem along with strengths and limitations of the project.

### **Search Strategy**

A detailed search strategy was used to carry out this DNP project. Beginning with a clear statement of purpose and practice-focused question, the search strategy also included application of the model used to locate sources and identification of resources used to analyze and synthesize sources included in the final report.

### **Purpose and Practice-Focused Question**

As stated previously, the primary purpose for conducting this DNP project was to identify current evidence-based strategies used by healthcare providers for improving parental medication and treatment adherence in children diagnosed with ADHD. The practice-focused question guiding this systematic literature review was the following: What evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD?

### **PRISMA Model**

PRISMA served as the model for identifying and extracting sources included in the review (Moher et al., 2009). Specific steps for applying the PRISMA model included establishing eligibility criteria, selection of databases and key words, followed by the selection of sources included in the final review.

Eligibility criteria used to select sources for inclusion in this review were restricted to literature published between 2010 to 2019. These years were selected to meet the goal of locating current evidence-based sources that meet the objective of the DNP project and answer the practice-focused question. Additional criteria used to locate relevant sources included evidence-based sources focusing on patients ages 6-17 years old and clinically diagnosed with ADHD. Last, all sources had to meet the criteria of being written in English.

Working in consultation with the university library liaison, I selected electronic databases for the review. The following databases were searched: CHBD, CINAHL,

Medline Plus, PubMed, JURN, and Google Scholar. A systematic search was carried out of all six databases using terms and subject matter headings defining the practice problem and practice-focused question.

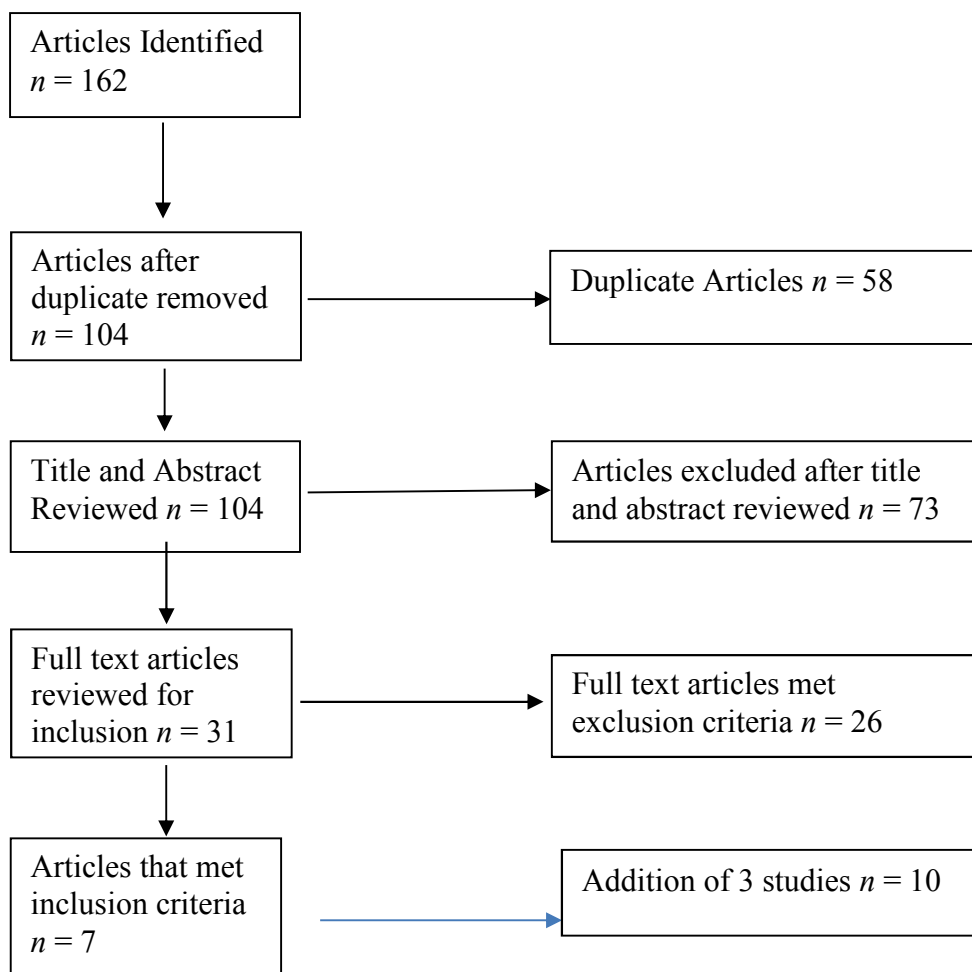
Key terms used to search each database included ADHD, caregivers, parents, treatment approaches, and treatment management. Combination of terms were used to refine the search including the terms *children with ADHD*, *management of ADHD in children*, *symptom management in ADHD patients*, *role of parents in ADHD symptom management*, *clinical strategies in ADHD symptom management*, *evidence-based medication adherence strategies*, and *medication adherence history in ADHD children*. The search also included hand-searching the table of contents of books and reference lists of all articles with the intent of locating additional sources.

Detailed steps for locating and eliminating sources for the review, based on the PRISMA flowchart model, are reflected in Figure 1. More precisely, the initial search employed to answer the practice-focused question yielded 162 articles. Removal of 58 duplicate publications left 104 articles for review. Titles and abstracts of these articles were then printed and reviewed with 73 articles removed for failure to meet inclusion criteria. These abstracts included opinion articles and articles on challenges in managing ADHD without the identification of evidence-based strategies to address the practice problem. The 31 full-text articles remaining were then reviewed with the goal of meeting the inclusion criteria for the project. This step led to the removal of 26 sources, which were eliminated as these sources did not include a description of evidence-based sources or interventions used by health care providers for enhancing medication and treatment

compliance of parents managing children diagnosed with ADHD. Leaving a total of seven sources, a decision was made to consult with the committee chair on the need for locating additional sources. Recognizing nurses as essential providers in the care of patients diagnosed with ADHD, the Boolean search term *AND nursing* was added. This step led to the addition of three sources, resulting in a total of 10 sources included in the review. A complete list of the sources selected for the review were compiled and included in a literature review matrix table (see Table 1).

**Figure 1**

*Inclusion Process Flowchart*



**Table 1***Literature Review Matrix Table*

Sources	Purpose	Research Question	Findings
Treuer et al. (2016). Factors affecting treatment adherence to atomoxetine in ADHD: a systematic review. <i>Neuropsychiatric disease and treatment</i> , 12, 1061.	Factors affecting treatment adherence to atomoxetine in ADHD.	What affects the reduced adherence to atomoxetine in ADHD Patients?	Miscommunication between parents and clinicians on how to use the medication is part of <b>treatment plan</b> .
Eccleston et al. (2019). Adolescent experiences of living with a diagnosis of ADHD: a systematic review and thematic synthesis. <i>Emotional and behavioral difficulties</i> , 24(2), 119-135.	Determining the living experience of teenagers with ADHD.	How does the experience of different teenagers with ADHD affect treatment adherence?	Stages of adolescent, disruption of social life and home support given to teenagers affects how they respond to ADHD treatment.
Charach & Fernandez (2013). Enhancing ADHD medication adherence: challenges and opportunities	Find out the challenges of ADHD treatment adherence and opportunities to improve adherence.	What hurdles affect medication adherence in ADHD patients and what opportunities may be explored to improve adherence?	Practices by clinicians and the unpreparedness of parents may hinder medication adherence.
Bai et al. (2015). Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: improvement of medication adherence and symptoms. <i>Neuropsychiatric disease and treatment</i> , 11, 2721.	Determining the psychoeducation effectiveness of programs for parents.	How can parental programs aid in improvement of medication adherence.	Parental programs have been beneficial in aiding parents to improve medication adherence in their children.
Ahmed, R., Borst, J. M., Yong, C. W., & Aslani, P. (2014, May). Do parents of children with Attention-deficit/hyperactivity disorder (ADHD) receive adequate information about the disorder and its treatments? A qualitative investigation. <i>Patient preference and adherence</i> , 8, 661–670. doi:10.2147/PPA.S60164	Patient preference and adherence in ADHD medication.	Do parents of children with Attention-deficit/hyperactivity disorder (ADHD) receive adequate information about the disorder and its treatments?	In most cases, parents don't receive adequate or consistent information regarding ADHD.
Furukawa et al. (2017). Behavioral sensitivity of Japanese children with and without ADHD to changing reinforcer availability: an experimental study using signal detection methodology. <i>Behavioral and Brain Functions</i> , 13(1)	An experimental study using signal detection methodology about behavioral sensitivity.	How do behavior sensitivity influence the type of reinforcement to be used on children.	Children with ADHD portray different type of behaviors from normal children thus they ought to be treated uniquely.
Leahy (2018). Diagnosis and treatment of ADHD in children vs adults: What nurses should know	A study to guide nurses' clinical practice in improving ADHD treatment outcomes	Should there be a difference between treatment and diagnosis of adult and child patients?	A difference in handling both adults and children is important, as they have differences in terms of diagnosis and treating them as well as the behaviors they manifest.
Jones & Hesse (2014). Adolescents With ADHD: Experiences of Having an ADHD Diagnosis and Negotiations of Self-Image and Identity. <i>Journal of Attention Disorders</i> , 1(11).	Experiences of Having an ADHD Diagnosis and Negotiations of Self-Image and Identity.	How does ADHD affect the self-image and identity of an adolescent with ADHD?	Adolescents with ADHD struggle with self-image and identity.
Hiscock et al. (2019). Impact of a Behavioral Intervention, Delivered by Pediatrics or Psychologists, on Sleep Problems in Children with ADHD: A Cluster-randomized Translational Trial.	Impact of a behavioral intervention on sleep problems in children with ADHD	What is the impact of behavioral intervention on sleep problems in children with ADHD.	behavioral sleep intervention is effective in improving sleep problems
Paidipati et al. (2020). Family Management in Childhood Attention Deficit Hyperactivity Disorder: A Qualitative Inquiry.	A study to understand how caregivers and families manage childhood Attention Deficit Hyperactivity Disorder (ADHD) in their everyday lives.	Which family management factors are most relevant to child outcomes?	Family management is essential as it enables children with ADHD to feel accommodated.

### **Analyzes and Synthesis of Sources**

I analyzed selected sources included in the final review by extracting and reviewing data that met the inclusion criteria for the review: sources published between 2010 to 2019, evidence-based sources focusing on patients ages 6-17 years old and clinically diagnosed with ADHD, and sources written in English. Outcomes of this process are reflected in Table 1. Analysis and synthesis of selected sources were then critiqued and appraised using Fineout-Overholt et al.'s (2010c) hierarchy of evidence. Presented in Table 2, Fineout-Overholt et al.'s standards for assigning levels of evidence were used to grade and rank all sources included in the final review. Using this grading system, three of the sources reviewed were assigned the highest level of Level I: systematic review or meta-analysis. Two sources were reported as randomized controlled trials and thus assigned Level II. One study was defined as a systematic review descriptive study and was assigned Level V. Three studies included in the review were reported as qualitative or descriptive studies and ranked as Level VI. Last, one study was defined as an expert opinion or consensus report and ranked as level VII using the standards set by Fineout-Overholt et al., (2010c)

**Table 2***Levels of Evidence for Data Sources*

Source	Level of Evidence	Type of Evidence
Treuer et al. (2016) Eccleston et al. (2019).	I	Systematic review/meta-analysis
Bai et al. (2015). Furukawa et al. (2017). Hiscock et al. (2019)	II	Randomized controlled trial
NA	III	Controlled trial without randomization
NA	IV	Case-control or cohort study
Leahy (2018)	V	Systematic review of qualitative or descriptive studies
Ahmed et al. (2014) Jones & Hesse (2018) Paidipati et al. (2020)	VI	Qualitative or descriptive study
Charach, & Fernandez, (2013)	VII	Expert opinion or consensus

*Note.* Adapted from Fineout-Overholt (2010c).

### **Findings and Implications**

While a literature review matrix (see Table 1) was used to organize and present sources included in the review, a literature map was added and used to sort and identify themes. According to Creswell, a literature map (see Figure 2) is a visual or figure of the literature on a topic that illustrates how a particular study contributes to what's known on a research topic (2014). Thus, findings for this project are reported in themes drawn from a synthesis of the literature focusing on sources collected to answer the practice-focused question: What evidence-based strategies have emerged in the literature in the past 10



years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD? Primary findings of the review using the sources of evidence selected pointed to the fact that specific evidence-based strategies have been reported over the past 10 years with regards to improving parental medication and treatment adherence in patients diagnosed with ADHD. These strategies have been documented and applied in an effort to ensure that parents can guide patients diagnosed with ADHD in adhering to medication and treatment compliance. These strategies are presented and discussed under the themes (a) family engagement strategies, (b) behavioral intervention strategies, (c) pharmacological interventions, and (d) strategies specific to the work of healthcare providers.

### **Family Engagement Strategies**

Family engagement refers to making use of family bonds to ensure patients get maximum support during times they are treated for ADHD (Paidipati et al., 2019). A theme among all 10 sources included in the review, family engagement was noted to be a recurring approach used by health care providers for enhancing parental treatment compliance in managing ADHD. Hence, recognition of the essential role of the family is an essential strategy used by providers in managing care of the ADHD patient (Paidipati et al., 2019).

Seeking a better understanding of how families and caregivers manage childhood ADHD in their everyday lives, Paidipati et al. (2019) used the Family Management Style Framework as a guide for exploring family management factors that affect outcomes of the child. Part of a larger mixed method study, investigators interviewed 50 children, ages

5 to 12 years old diagnosed with ADHD. Asserting family management as an important concept in pediatrics, major themes supporting the importance of family in managing ADHD included the significant effort required by caregivers in managing the child with ADHD, how caregivers contextualized the child's condition in everyday family life, how they perceived their ability to manage the child's condition and the impact of ADHD on the child and family's future (Paidipati et al., 2019). Citing implications for nursing practice, Paidipati et al. emphasized that management of the child diagnosed with ADHD begins with family assessment such as assessing the parent's understanding of the condition. Additional strategies for enhancing parenteral compliance as cited by investigators include establishing an active partnership between healthcare providers and caregivers in managing childhood ADHD (Paidipati et al., 2019). Recognizing the demands in managing a child with ADHD, it is also important for nurses, as frontline providers, to assess the psychosocial and emotional needs of parents (Paidipati et al., 2019). Using this approach, it is recommended that nurses offer encouragement, support and solutions for both the patient with ADHD and the parent/caregiver in living with ADHD.

Asking the question "Do parents of children with ADHD receive adequate information about the disorder and its treatment?" Ahmed et al. (2014) conducted three qualitative focus group interviews with 16 Australian parents. Narrative findings as reported by investigators indicate that a diagnosis of ADHD can not only impede academic and social progress of the patient but also strain family relationships (Ahmed et al., 2014). Family dynamics can include victimization of siblings. A diagnosis of ADHD

in a child or adolescence can also lead to strain and depression among family members (Ahmed et al., 2014). Providing parents with concise, tailored information about the diagnosis along with medications used for treatment was viewed as major strategies for enhancing parental compliance in managing ADHD (Ahmed et al. 2014).

In a descriptive review on understanding the diagnosis and treatment in children diagnosed with ADHD compared to adults, Leahy (2018) emphasized the important role of nurses in managing ADHD. Citing the critical role of family in managing ADHD, Leahy emphasized the role of nurses in educating patients and caregivers, and in monitoring medication side effects and resolving family crisis. Also, recognizing the specialized knowledge and skills of the advanced nurse practitioner (APN), Leahy cited the role of the APN in managing individual and family therapies, as well as behavior modification strategies that can be used at home as well as in school. As asserted by Leahy, the treatment of ADHD is a complex process that includes pharmacological therapies, behavioral interventions and caregiver education. Key in achieving long-term patient outcomes in managing ADHD includes the collective efforts of not only the APN, but also RNs, therapists, the patient, family members and caregivers (Leahy, 2018).

With an interest in understanding the meanings and consequences of living with ADHD, Jones and Hesse (2018) conducted qualitative interviews with nine youth ages 6 to 16 years, on transitioning from childhood to adolescence. Narrative meanings supporting family engagement was the finding of ‘a new understanding of ADHD as adolescence in comparison to ADHD as a child (Jones & Hesse, 2018). As reported by youth participating in the study, a move from living with ADHD as a child to life with the

illness as an adolescence, participants gained acceptance of the ADHD diagnosis that had been poorly understood or shielded from them by parents and health care providers (Jones & Hesse, 2018). This finding further supports the importance of assessing and understanding how family dynamics can affect patient response to treatment as reported earlier by Ahmed et al. (2014) and later by Paidipati et al. (2019).

While family engagement was seen as a predominate theme in four out of ten sources included in the review, other sources extracted and analyzed from the literature emphasized the important role of families in managing the lives of children diagnosed with ADHD. For example, in a clinical practice publication, Charach and Fernandez (2013) assert that while medication is a key component of evidence-based treatment of ADHD during adolescence, management should include acknowledging shared decision-making in managing the condition by both patient and family members. Also, using a cluster randomized control design, Bai et al., (2015) was able to demonstrate how parental participation in an education program can improve medication and treatment compliance in managing ADHD. Similarly, conducting a systematic review of the literature, Treuer et al. (2016) asserted that treatment adherence of ADHD should be regarded as a shared agreement between the patient or patient's family, and the health care provider. Last, reporting findings from a quasi-experimental study conducted with 41 school-aged children with 19 included in a control group, Furukawa et al., (2017) indicated the importance of frequent, immediate and consistent rewards provided by family and caregivers as a strategy for enhancing parental compliance in managing ADHD. Finally, while societal pressures such as stigma and rejection were reported as

problems reported in a systematic review conducted by Ecclestone et al., (2019), sources indicate that adolescents found that their views and opinions were dismissed by persons in power such as parents. To enhance parental compliance, Ecclestone et al. (2019), suggested that the ADHD adolescence be taken seriously and have their experiences be acknowledged. In summary, with qualitative interviews (Ahmed et al., 2014; Jones & Hesse, 2018; Paidipati et al., 2019) providing rich, thick, informative data supporting the importance of family engagement, additional support for this theme is noted in quantitative studies as well (Bai et al., 2015; Eccleston et al., 2019; Furukawa et al., 2017; Hiscock, 2019; Treuer et al., 2016) and in clinical practice publications (Charach & Fernandez, 2013; Leahy, 2018).

### **Behavioral Intervention Strategies**

Defined as a neurodevelopmental disorder, ADHD affects children, adolescents and adults. Major symptoms of ADHD include hyperactivity-impulsivity and inattentiveness (Leahy, 2018). These symptoms are associated with functional impairments that negatively affect the lives of the ADHD patient and family members. Treatment for ADHD includes medication, behavioral interventions and parent/caregiver education (Paidipati et al., 2019). Behavior therapy in managing ADHD in childhood are interventions that help children learn to better control their own behavior and in particular, behaviors affecting functional impairments. Several interventions have emerged in the literature in the past 10 years demonstrating behavioral intervention strategies developed for the purpose of managing symptoms so that the ADHD patient can live an everyday life. With a focus on managing ADHD in childhood and

adolescence, these studies employed experimental and non-experimental research designs to study interventions that can enhance parental and caregiver compliance in managing ADHD.

Using the theory of planned behavior as a framework, Bai et al. (2015) developed a psychoeducation program to enhance understanding and raise illness awareness in parents and caregivers of children diagnosed with ADHD ages 6 to 16. Defined as a “specific therapeutic program, psychoeducation focuses on didactic communication of information providing patient and families with coping skills” (Bai et al, 2015 p. 2722), participants of the study were randomly assigned to an intervention (n=44) or control group (n=45). While the control group received only general clinical counseling, participants assigned to the intervention group received well-structured psychoeducation programming carried over three months that included expert-guided lectures, a parent manual and group sessions with a clinical assistant. Findings indicate that the psychoeducation program had a positive impact on both medication and treatment adherence of clinical symptoms of ADHD children (Bai et al., 2015). Hence, greater improvements in parental/caregiver knowledge about ADHD and many components of the theory of planned behavior model were observed in the intervention group (Bai et al., 2015).

Recognizing the role of parental and caregiver praise and rewards for behavior, Furukawa et al. (2017) evaluated the behavioral sensitivity of Japanese children with and without ADHD. Testing the variable of behavioral sensitivity, 41 school-aged participants were evaluated on unequal frequency of rewards and to changing

reinforcement availability. Study findings suggest the need for frequent, immediate and consistent rewards for appropriate behavior in children diagnosed with ADHD. Using a cultural lens as a guide, investigators determined that Japanese children diagnosed with ADHD adjust their behavioral responses to changing reinforcer behavior/action than their western peers (Furukawa et al., 2017)

Employing a cluster-randomized translation study, Hiscock et al. (2019) employed a sleep hygiene intervention to assess improvement in child sleep patterns and ADHD symptom severity. With a sample size of 361 Australian children ages 5 – 13, parents in the intervention group ( $n = 183$ ) participated in training that involved assessment of the child's sleep problem while parents assigned to the control group ( $n = 178$ ) received no treatment. Information about normal sleep, sleep cycles and sleep hygiene strategies along with development of a behavioral sleep management plan served as the intervention and was provided by pediatricians and psychologists (Hiscock et al. 2019). Responding to the Children's Sleep Habits Questionnaire at 3- and 6-month intervals following the intervention, parents receiving the sleep hygiene instructions reported reduced sleep problems and improved child and family well-being (Hiscock et al., 2019). Investigators concluded that a low-cost brief behavioral sleep intervention is effective in improving sleep problems when provided by community health care providers such as pediatricians and psychologists of ADHD children (Hiscock et al., 2019).

In summary, while the literature (Bai et al., 2015; Furukawa et al., 2017; Hiscock et al., 2019) indicates behavioral interventions provide evidence of strategies used by

health care providers for enhancing medication and treatment compliance in parents managing ADHD, there are limited sources that include both patients and parents/caregivers as study participants. This finding is interesting as current interventions aimed at improving parental/caregiver compliance using are essential yet scarce.

### **Pharmacological Intervention Strategies**

As extracted from reviews included in this DNP project, medication is the most common treatment for ADHD in children with two categories of drugs noted: stimulants and nonstimulants (Ahmed et al., 2014; Charach & Fernandez, 2013). To date there have been limited evidence-based sources aimed at identifying specific strategies to support parents and caregivers in managing ADHD when the primary treatment is by medication. As noted in this review, one of five sources generated qualitative findings on strategies for enhancing medication adherence in parents/caregivers (Ahmed et al., 2014). Findings from two sources are based on findings generated from systematic literature reviews (Eccleston et al., 2019; Treuer et al., 2016). The remaining two sources addressing strategies for enhancing parental medication compliance are defined as clinical practice sources (Charach & Fernandez, 2013; Leahy, 2018).

Examining challenges and opportunities for enhancing ADHD medication adherence, Charach and Fernandez (2013) reported that discontinuation in the first few months of treatment is due to adverse effects of medications such as decreased appetite, insomnia, stomach aches or headaches. Additional reasons for discontinuation include the family's reported experience that the medication is not effective and a belief that ADHD is not a disorder (Charach & Fernandez, 2013). Strategies for enhancing parental



compliance include helping families develop realistic expectations for how ADHD medications can help (Charach & Fernandez, 2013). Clinicians should also provide frequent monitoring of adverse drug side effects in the early stages of the illness (Charach & Fernandez, 2013).

Acknowledging that parental knowledge of ADHD is largely associated with negative media reports and awareness of the stimulant drug methylphenidate (Ritalin), Ahmed et al. (2014) reported that the use of medications for treating ADHD is contentious. This factor puts parents in a difficult position when deciding to initiate and or continue the child's treatment. Recognizing that media reports can portray medications for treating ADHD in a negative light and thus misleading, Ahmed et al. (2014) utilized qualitative interviews with parents to examine information needs of parents and children diagnosed with ADHD. To overcome negative information regarding drug therapy, Ahmed et al. (2014) assert the importance of parents having access to appropriate sources of information in order to clarify misunderstandings and concerns related to the use of prescription medications for ADHD.

Similar to reports by Charach and Fernandez (2013) and Ahmed et al. (2014), Treuer et al., (2016), reported that poor medication adherence of ADHD in children stems from the parents' initial hesitancy in having the child treated with medication. Perceiving that ADHD is a social, emotional or psychological problem, many parents believe that pharmacological treatment is not necessary (Treuer et al.,2016). Using a systematic literature review approach to examine factors affecting medication adherence, investigators suggested that providers identify patients who do not adhere to medication

schedules and their reason for nonadherence (Treuer et al., (2016). Providers should then identify strategies to assist parents and caregivers in overcoming barriers in achieving medication compliance (Treuer et al., 2016).

In a descriptive study, Leahy (2018) emphasized the importance of all nurses being familiar with the differences between treating ADHD in the pediatric patient versus the adult patient. Reporting that ADHD symptoms change as the child matures, Leahy (2018) cites that timely diagnosis and treatment of ADHD during early childhood can lead to long-term positive outcomes in adulthood. Strategies to enhance parental compliance in managing ADHD as suggested by Leahy include basing the decision to start medications following a confirmed diagnosis of ADHD along with recognition of the presence of symptoms that are severe enough to cause social and functional impairment (2018). Clinicians should also take cultural factors and comorbidities into consideration when medication for ADHD is prescribed (Leahy, 2018).

A systematic review with thematic synthesis served as the approach used by Eccleston et al., (2016) to explore adolescence experience of living with a diagnosis of ADHD. Bending to societal pressures as a theme and meeting the expectations of others as a subtheme, Eccleston et al. (2016) reported that parents and adolescents work in opposition to each other. Hence, sources included in the review indicate that adolescents hid their decision to stop taking medication for ADHD while their parents pressured them to take it. While strategies for parental compliance are not clearly articulated in the review, Eccleston et al. (2016) reported a failure by healthcare providers to recognize and address reported problems of medication side effects.

In summary, evidence from this review indicate that medication is the most common treatment for managing ADHD. Also evident is that the choice for using medications as a treatment of ADHD is complex with factors related to the severity of the illness, acceptance of parents and caregivers of the ADHD diagnosis and in assisting parents in overcoming barriers.

### **Healthcare Provider Strategies**

A central theme noted among sources included in this review were specific strategies or measures health care providers should consider when working with parents and caregivers managing a child diagnosed with ADHD. These strategies can be defined as interventions that have the potential for improving treatment adherence in childhood ADHD to ensure long-term outcomes in adulthood.

A best practice for enhancing parental treatment compliance in managing ADHD as noted in the sources included in this review is the importance of taking a developmental approach. Broadly speaking, taking a developmental approach requires an understanding that ADHD is not confined to childhood alone but does persist into adolescence and later adulthood. Thus, while inclusion criteria for the selection of sources included in this review focused on children 6 to 17 years old, several sources in the review addressed management of ADHD from the developmental transitioning periods such as childhood to adolescence and childhood to adulthood. Leahy (2018) stated that all nurses should familiarize themselves with the differences between pediatric and adult ADHD along with the management approaches for each stage of development.

In contrast, Bai et al. (2015) tested the use of psychoeducation as an intervention for improving medication adherence in children. Furukawa et al. (2017) conducted an experimental study to examine the impact of a reward system as a behavioral intervention strategy for changing responsive behavior in children. Eccleston et al., (2019) report that validation, support, empowerment and autonomy of the adolescent patient are needed for the adolescent to gain autonomy and independence in managing the illness. Additionally, using a qualitative approach, Paidipati et al. (2019) explored family management in childhood ADHD and encouraged that behavioral management strategies be introduced as early as possible to caregivers of children with ADHD. The implication is that health care providers consider the fact that treatment for ADHD changes as the patient diagnosed in childhood transitions to adolescence and later to adulthood. Treatment includes an understanding of transitional changes experienced by the ADHD patient as he/she matures.

A separate but equally important strategy for health care providers is addressing ADHD as a chronic condition. For this reason, specific strategies for practice should be considered. For example, Charach and Fernandez (2013) warn that for a chronic condition such as ADHD, successful outcomes are more likely to occur with continued medication use, with expected challenges arising as the child becomes an adolescent. Paidipati et al. (2019) and others encouraged healthcare providers utilize professional practice guidelines when developing a plan of care and when updating treatment for the ADHD patient. Professional guidelines can be those provided by the American Academy of Pediatrics and the latest version of the Diagnostic and Statistical Manual of Mental

Disorders (Charach & Fernandez, 2013; Jones & Hesse, 2018; Paidipati et al., 2019). Parents concerned about their child's safety should be referred to local or national community organizations such as the Children and Adults with Attention Deficit / Hyperactivity Disorder (Ahmed et al. 2014; Paidipati et al. 2019).

Last, similar to other pediatric conditions, ADHD can affect impairments in functioning across life domains including school, peer relationships and family-life. Charach and Fernandez (2013) emphasized that a therapeutic partnership with patient, parent and health care provider be maintained through ongoing patient-provider transaction over time as this is essential for long-term treatment adherence of ADHD.

As suggested by study participants, Ahmed et al. (2014) recommended that parents and caregivers be given written information such as leaflets and pamphlets to supplement verbal instructions provided by health care providers. Using a quasi-experimental approach, Bai et al. (2015) was able to demonstrate how a psychoeducation program could positively impact the lives and symptoms of children living with ADHD. Exploring the experiences of youth diagnosed with ADHD, Jones and Hesse (2018) reported that a diagnosis of ADHD should be approached with attention given to problems related to self-image and identity. Recommending that health care providers also be aware of young peoples' experiences of ADHD, Jones and Hesse (2018) raised questions on functioning of the child and adolescence in school. Seeing school as a domain of life, Jones and Hesse (2018) suggested patient/family assessment include questions such as 'how has the young person functioned in terms of education and how have he/she managed school?'

In summary, health provider strategies served as a central theme in providing answers to the practice-focused question guiding this DNP project. Recognizing that there is a gap in parent's knowledge about ADHD and its treatment, health care providers should understand that narrowing or closing this gap begins with employing evidence-based strategies when managing the care of the ADHD patient.

**Figure 2**

*Literature Map on Enhancing Parental Compliance in Managing ADHD*

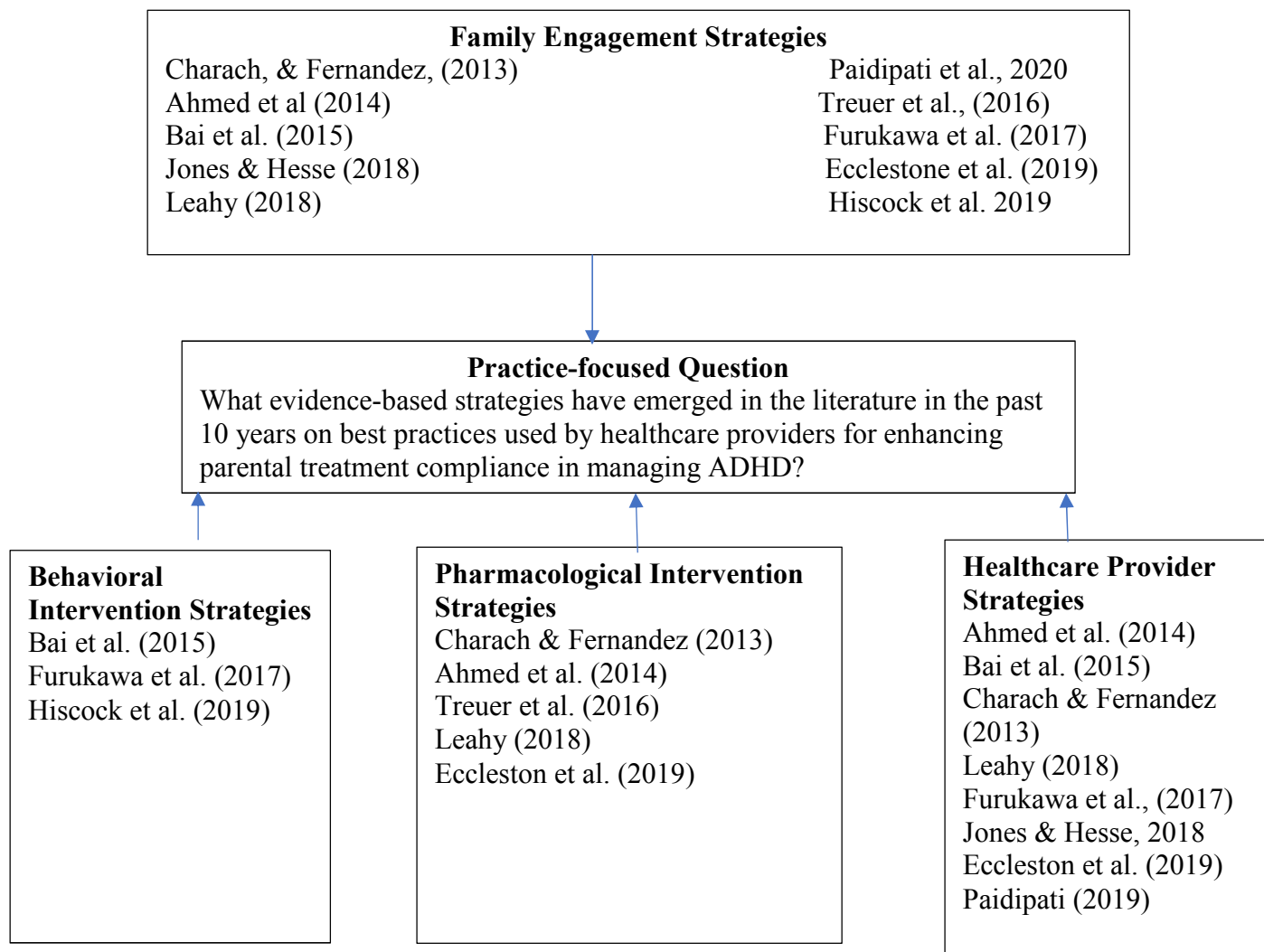


Figure 2: Adapted from Creswell, (2014)

## **Implications**

Findings from this systematic literature review have important implications for patients and families, education, practice, policy, and social change. Parents/caregivers and families' education, practice, policy and social change. Parents/guardians/family can understand that adherence to medication and treatment is dependent on particular factors such as understanding the behaviors of the child, trying as best as possible to have a positive influence on the behavior in the family that may be brought about by the presence of a child with ADHD. Clinicians can understand that compliance is also based on understanding the role of the family in managing the long-term issues of the condition and parents on the other hand should understand their role and contribution to medication and treatment adherence of their child.

### **Implications for Patients and Families**

Both patients and families can benefit from the findings generated from this project. The findings provide strategies and approaches that can be utilized by parents, caregivers and families in managing ADHD and ensure that medication and treatment adherence are achieved. Findings also portray the roles of both patient and their families in managing the illness and ensuring the responsibility that a good medication regimen is achieved. Factors that affect medication adherence such as stress levels (Ecclestone et al., 2019; Furukawa et al., 2017) within the family are widely discussed and provide plenty of useful information that can be used by parents of ADHD children. Parents and caregivers should also be informed of the importance of undergoing training and education which helps in understanding their children and influencing them to adhere to



their medication and treatment regimens (Ahmed et al, 2014; Bai et al., 2015). Adherence to medication and treatment regimens can lead to improved behavior of the child, a better workday for the parent and family members.

### **Implications for Healthcare Providers and Prescribers**

Findings generated from this review indicate measures in which other clinicians have been practicing and studying within the past decade. Thus, clinicians can avoid strategies that have proven to be ineffective. Healthcare providers could establish an information center which will enable clinicians to offer uniform information regarding management and medication treatment of ADHD. Improved medication adherence implies improved success rate and thus increased job satisfaction for the prescriber. It also improves the respect and trust gained by healthcare providers. Nurses in clinical settings can make use of these findings to shape their approach to clinical practice. Nurses in school settings can make use of the findings generated from this project for ensuring that the child takes his/her medication while at school and for enhancement of academic performance for both the child and family (Charach & Fernandez, 2013; Jones & Hesse, 2018). Thus, school nurses can act as advocates for the child at school and at home. For instance, school nurses can utilize the findings to determine the best and fact-based strategies to improve medication adherence in children while at school and hopefully in the home settings. It is important that clinicians monitor patient responses and establish a consistent and patient-specific medication regimen that will be effective for patients with ADHD. The findings can be used as a source of developing healthcare policies that will serve as a guide to clinicians and parents in improving medication

adherence. These findings also provide suggestions for prescribing medications and defining roles of clinicians and administrators in improving medication and treatment adherence.

### **Implications for Communities/Institutions/Systems, Policy Makers, Hospital Administrators**

When highlighting schools, teachers can adopt findings such as specialized training to better understand behaviors of the ADHD patient and tackle discussions on factors that influence medication and treatment adherence. Policy makers should consider establishing new and evidence-based guidelines and approaches that aid in approaching medication non-adherence. The policies may highlight the importance and the role of each individual involved in the process of managing ADHD in children. Hospital administrators nationwide can adopt similar changes that will improve their response to treating ADHD and do so in a uniform manner that will ensure that each patient obtains current evidence-based treatment. Healthcare institutions can adopt findings from this project to ensure that medication adherence becomes the ideal standard when treating children diagnosed with ADHD. The adoption of the above strategies can improve medication and treatment adherence. The findings can be used as a source of developing new evidence-based healthcare policies that will guide clinicians and parents to accept new strategies that improve medication adherence in ADHD patients. The policies may provide suggestions for prescribing medications based on the case of the patient and define roles of clinicians, parents and family members in improving medication adherence.

### **Implications for Social Change**

The implication for positive social change includes the fact that findings generated from this project could be used to raise awareness on several key factors. For example, clinicians like myself, could use this project as a way of changing practice. More specifically, insights gained from this project provides rationales for needed changes in how ADHD patients are viewed as patients and most certainly how they are treated. Viewed from the perspective of living with ADHD, understanding parental and caregiver perspectives in regard to illness management is essential in managing ADHD.

### **Recommendations**

Onsite observations of the practice setting of this DNP student indicated that information relayed to patients and caregivers was dependent on the individual provider, with what he/she deems important. Hence, limited attention was given to the impact of ADHD on the lives of the patient and family. This observation provided validity for the practice problem of inconsistent measures used by healthcare providers for enhancing medication and treatment adherence by parents and caregivers managing children with ADHD. Models and theories (Champion & Skinner, 2008; Montano & Kasprzk, 2015; Proschaska & DiClemente, 1994) guiding this project along with findings generated from the systematic literature review serve as the basis for recommended solutions for addressing the gap in practice observed in the clinical practice setting:

- meet parents and caregivers where they are and begin each clinic visit with an assessment of the family on living and managing ADHD. The recommendation is that clinicians should make parents a significant part of the

journey and seek information regarding how children react to certain medications and treatment.

- providers should work to improve the knowledge of parents regarding treatment of ADHD. This is particularly true on what to expect and how to manage challenges that may arise with the child.
- the clinic should have available instructional material such as brochures that can be given to parents and caregivers. For example, parents, guardians and family members should be provided a small brochure on ADHD, medications and its side effects, commonly asked questions and concerns.
- using an evidence-based approach, initiatives should be implemented to ensure instructional material for parents and caregivers be routinely updated to support practice changes.
- it may be beneficial to undertake training of clinicians focused on understanding and influencing behaviors of children who have ADHD as well as reducing stress in a family environment.
- more specifically, my main recommendation is training and educating parents on ADHD.
- I would further recommend protocols and procedures whereby the parents are connected with resources in the community and with support groups in regard to ADHD. Resources can be in the form of referral to therapy and support groups with other parents and guardians which will enable the parents to find other parents in similar positions.

- Community connection with government resources should be made available. Resources such as application paperwork for parents when they take time off work to bring the child to appointments or when they have to leave work and go to the school due to the child's unruly behavior, should be explored.
- I would recommend that the strategies discussed on how to improve patient adherence with medications be applied in healthcare institutions so as to improve continuity of care across health care systems.
- I would also recommend that various stakeholders such as clinicians and school-based nurses take into account the perspectives shared by parents of children with ADHD when trying to understand how to treat them.
- Last, as with any changes to clinical practice, evaluation of changes should follow. Hence, the suggestion here is to continually monitor the practices of clinicals directing the care of patients diagnosed with ADHD. Input should also be obtained from parents and caregivers on the care management practices of providers.

### **Strengths and Limitations of the Project**

This project was based on a systematic literature review using evidence-based sources selected purposely to answer the practice question, 'what evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing parental treatment compliance in managing ADHD? While findings generated from this review are based on an exhaustive and comprehensive

review of the literature, there are strengths, limitations and recommendations for future projects.

The review adhered to PRISMA guidelines for reporting systematic reviews (Moher et al., 2009). Another strength is that the systematic literature review provided me an opportunity to review and analyze reliable information from fairly recent diverse sources from the literature. The extracted resources provided evidence-based sources that were graded on the hierarchy of evidence published by Fineout-Overholt et al. (2010). Additionally, a literature map served as a useful tool (Creswell, 2014) for synthesizing sources that led to identified themes. Another strength is that standards for quality improvement excellence (SQUIRE) were used to ensure that the final report was written with sufficient details for readers to understand the practice problem along with the methodology for conducting the review and findings generated from the review (Davies et al., 2015).

In contrast to identified strengths, there were limitations. For example, there were a limited number of sources eligible for inclusion in this systematic literature review. Thus, conclusions drawn need to be considered within the context of this clinical practice setting. Future research studies and evidence-based projects should focus on evidence-based strategies that have the potential for enhancing parental compliance according to gender and other demographic variables.

In summary, section 4 presented findings extracted from the literature to answer the practice focus question of what evidence-based strategies have emerged in the literature in the past 10 years on best practices used by healthcare providers for enhancing

parental treatment compliance in managing ADHD?’ Major themes with implications and recommendations were addressed. Section 5 addresses plans for disseminating findings generated from this project and an analysis of self.

## Section 5: Dissemination Plan

Because of the lack of evidence-based strategies used by healthcare providers in this practice setting, the primary purpose of this DNP project was to examine current evidence-based strategies used by healthcare providers for improving parental medication adherence in children diagnosed with ADHD. More precisely, this DNP project employed a systematic review of the literature to identify and appraise current evidence-based strategies for enhancing treatment adherence in the management of ADHD. This evidenced-based project describes the role of various individuals, such as clinicians and parents, in ensuring that medication and treatment adherence are forefront of any treatment. Section 5 includes plans for dissemination of the project and an analysis of self.

### **Dissemination of Findings**

A plan for dissemination is an essential step for communicating findings generated from a scholarly project. Thus, my plans for dissemination include seeking publication through several peer-reviewed journals including those of the American Nurses Association, Public Health Nursing, and special interest groups whose aim is to ensure development of solutions that will aid in improving treatment regimens. I will also present my findings as a conference presentation specifically to nursing students who will eventually be in the field working with parents whose children are diagnosed with ADHD. My hope is that my findings will be used in clinical practice settings as a way of offering guidance to clinicians who wish to ensure that their patients achieve medication and treatment adherence in the management of ADHD.



### **Analysis of Self**

This DNP project enabled me to gather evidence-based sources systematically to address a problem that has not been given the attention it deserves. This project reveals the importance of medication and treatment compliance of ADHD and offers strategies that can be applied in the real nursing world to improve adherence and quality of life for patients. I delved into an issue that was witnessed in my practice setting and developed workable solutions that may revolutionize how the entire nursing and wider community view the management of children with ADHD. Through the use of simple methods to manage patients, a diagnosis of ADHD can cease being viewed as a burden to the parent and or caregiver. Medication stigma can also be minimized if the recommendation of administering effective, patient-specific, and efficient medication regimens are followed. I was able to engage with clinicians in my practice setting and understand that the majority do not have a specific approach when treating children with ADHD. Thus, the clinicians report inconsistent rates of medication adherence. The parents do not have access to consistent, reliable information regarding mental illness and strategies that can be applied to improve treatment and management of ADHD. Findings from this systematic review provided answers that can be applied in the healthcare system with the aim of improving medication and treatment adherence of ADHD patients.

With this DNP project, I have improved my writing, research, and interpersonal skills through the many interactions I have had with different people and stakeholders. I have additionally learned to believe in myself and now consider myself a solution-oriented individual. This DNP project has aided me, as a practitioner-scholar, in

understanding the importance of research to unravel evidence-based practice. The DNP project has enabled me to identify means to best practices on medication and treatment adherence.

### **Summary**

Parents and clinicians are the key stakeholders in ensuring medication adherence when treating children diagnosed with ADHD. I have outlined evidence-based strategies that the two parties can adopt to manage this mental illness and improve the quality of life of the children and all those involved in their lives. This DNP project is an example that there exist solutions for problems related to nursing practice and remedies for parents who provide care to children diagnosed with ADHD.

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