6-2017

NON-PHARMACOLOGICAL TREATMENTS FOR CHILDREN AND ADOLESCENTS DIAGNOSED WITH ATTENTION-DEFICIT/ HYPERACTIVITY DISORDER

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A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Social Work

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ABSTRACT

This research project aims to identify and acknowledge the various non-pharmacological interventions and treatments for both children and adolescents diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). This review will highlight the non-pharmacological interventions that are discussed in current research, the significance and potential impact it has on the field of social work, and the way in which this research proposal will be conducted.

ADHD is a commonly known neurodevelopmental disorder that is often seen within children and adolescents. ADHD can be treated through prescription medication, non-pharmacological interventions, or a combination of both. Research indicates that non-pharmacological treatments/interventions have shown positive side effects or outcomes within children and adolescents diagnosed with ADHD. The data and research used for this research proposal will focus on current literature that discuss the various types of non-pharmacological interventions. In regards to the field of social work, this study will provide an insight to more holistic approach for social work practice rather than a pharmaceutical/medical one.

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CHAPTER ONE

INTRODUCTION

Problem Statement

Attention-Deficit/Hyperactivity Disorder (ADHD) is known as a more popular and common diagnosis that is given to children, adolescents, and even adults throughout the United States. ADHD is a neurodevelopmental disorder that has a specific set of criteria that can be observed through an individual's behavioral patterns as well as their functioning in various settings (American Psychiatric Association, 2013). Currently, ADHD diagnoses have been increasing in school-aged children and adolescents. Children and adolescents diagnosed with ADHD are often given treatments that commonly involve prescription medication. Additionally, these prescribed medications *may* have negative [long lasting] effects such as: cardiovascular risks and elevated blood pressure and heart rate (Nissen, 2006). Depending on the severity of an individual's ADHD diagnosis, alternative, non-pharmacological treatments should have an equal opportunity in being part of the intervention and treatment process. A non-pharmacological treatment approach can avoid the possibilities of prescription dependency and side effects.

The symptoms and behaviors of ADHD include and range from variations of fidgeting, inattention, squirming, forgetfulness, impulsivity, excessive talking, physically restless, difficulty in waiting, inattentive, lack of following through with

tasks/responsibilities, etc. (American Psychiatric Association, 2013). For meeting criteria in a diagnosis of ADHD, the observed symptoms must be present for at least six months and have a negative effect on aspects of their developmental course (American Psychiatric Association, 2013). These behavioral patterns are observable to others and can be seen in various settings but notably within the school environment and at home. In addition to the distinguishable symptoms and behaviors that are specific to ADHD, there are also levels of severity. ADHDs severity is very much dependent on the basis of each individual, however, there are three levels that categorizes the degree of symptoms; mild, moderate, and severe (American Psychiatric Association, 2013).

The National Resource on ADHD, Children and Adults with Attention Deficit Disorder (CHADD), reports that children and adolescents are often diagnosed during school-aged years (ages four-eighteen) because of the observable behaviors seen by parents, teachers, staff, etc. Children can be diagnosed as early as four or five years old for ADHD (2013). By 2011, it was reported that approximately 6.4 million school-aged children in the United States had been diagnosed with ADHD. Additionally, the diagnoses of ADHD are predominantly boys when compared to the portion of girls (Visser et al., 2014).

The most common form and option of treatment for children and adolescents diagnosed with ADHD is medication. ADHD medications take many forms and are often stimulants (National Institute of Mental Health, 2016). However, prescribed medicine, that are stimulants, have long lasting effects that

may cause damage to a child and/or adolescent's development (Nissen, 2006). Many of these side effects from stimulant medication can include the possibility of weight and appetite loss, lack of emotion regulation, and insomnia (Smith, 2011). It is apparent that ADHD is a mental health issue and needs to be treated accordingly. This is especially true in severe cases of ADHD where an individual's ability to function is dependent upon the use of medication. However, for children and adolescents who are diagnosed with ADHD mild-moderate, there should be other interventions available to them than being automatically prescribed heavy dosages of medication that has altering effects.

In contrast to stimulant medication type of treatment, non-pharmacological interventions and approaches include various therapies, tailoring of diet and nutrition, herbal treatments, meditation, yoga, etc. (Catalá-López et al., 2015). Non-pharmacological treatments would foster an environment catered to holistic medicine. Taking these types of interventions would allow social workers to work with the children/adolescents, parents, and teachers as a collective whole in order to increase the quality of life and well-being of the child/adolescent.

By providing more non-pharmacological treatments to this population, the usage of prescription medication may decrease as well as the stigma that follows ADHD within society, especially in school environments. A pharmacological treatment for these children and adolescents with ADHD allow them to proactive in their treatment and by not depending on stimulant medication. However, these types of "alternative treatment(s)" may actually increase a child/adolescent's

autonomy and self-efficacy by allowing them to be active participants in treating their diagnosis. Medication is often seen as a “quick-fix” and it is widely known that America’s way of dealing with illnesses whether they are mental or physical is to start with prescribing and pumping people with medication. Unfortunately, many of these people include children and adolescents, who are diagnosed with ADHD, and are still developing, cognitively and physically. Of children and adolescents (ages four to seventeen) diagnosed with ADHD, 6.1% of them were taking medication in a 2011 survey conducted by the Centers for Disease Control and Prevention. This same survey and study noticed an annual increase of 7% in medication usage (2014).

Purpose of Study

The purpose of this study is to identify the various levels, approaches, and interventions of non-pharmacological treatments for those diagnosed with ADHD. Instead of children and adolescents diagnosed with ADHD relying purely on medication, this study aims to address various interventions that can be the primary source of treatment or supplemental to prescribed medication.

Demographics

The population in which this study is targeting is specifically young children and adolescents (ages ranging from three to eighteen years old). The research gathered for this study will come from various settings as well as

sources. For example, these interventions can be implemented in a school, home, outpatient therapy setting, etc.

Rationale for Research Methods

Although this study is focused on identifying and bringing awareness to non-pharmacological treatments for ADHD in children/adolescents, the issue remains to be discussed on the prescription medication that is so readily available for these diagnoses. Since there is a gap and lack in literature regarding the long-term effects of stimulant prescription, specifically for ADHD in children/adolescents, it is crucial to bring awareness of the other methods that are non-pharmacological and available.

Furthermore, this study will be a review in order to provide a comprehensive list of non-pharmacological interventions for children and adolescents diagnosed with ADHD. This review's objective is to clearly identify non-pharmacological interventions and examine the effectiveness and feasibility of these approaches.

Significance of the Project for Social Work

This study is significant to social work because ADHD is such a prevalent diagnosis among this population (American Psychiatric Association, 2013). Although there are methods to treating ADHD on the pharmacological route, there needs to be a discussion for other options besides the commonly prescribed, "quick-fix" medication.

Micro Implications

On a micro social work practice level, it would be beneficial to children and adolescents diagnosed with ADHD to receive a non-pharmacological intervention, like therapy, before the option of medication is made. This approach could be beneficial because ADHD medication can become addictive as well as have negative physical and mental symptoms, which can be damaging to a child's development, especially for those of a younger age. (Smith, 2011). Therefore, by taking a holistic approach to treating ADHD, a child's cognitive development is less at risk and the possibility of negative symptoms is reduced.

Identifying non-pharmacological treatments can also allow children and adolescents to be active participants in their helping process. These interventions possibly have the ability to incorporate self-determination (for the client), strengths perspective, etc. because it allows the client to be proactive in their choices of treatment (whether it is non-pharmacological or non-pharmacological with medication).

Macro Implications

In addition to micro social work, there are also macro social work practice implications regarding this topic. Macro social work can be applied to this topic because it can provide additional research on treating ADHD. More specifically, macro social work can proceed in researching what non-pharmacological therapies are available and useful to children and adolescents. Macro social work

can also play a part in which non-pharmacological treatments work best when implemented within schools, homes, etc.

The most significant factor that this study has on macro social work is that there are many systems involved when discussing the non-pharmacological treatments for children and adolescents diagnosed with ADHD. Identifying what the multi-level systems (e.g. home, school, community, etc.) are for a client, may help in finding what interventions are suitable and appropriate for the environments they are living within.

CHAPTER TWO

LITERATURE REVIEW

Introduction

Before any further information is provided on the non-pharmacological and alternative treatments for children and adolescents diagnosed with ADHD, a discussion on ADHD as an overall diagnosis is essential.

Overview of Attention-Deficit/Hyperactivity Disorder as a Diagnosis

As previously stated, ADHD is a commonly known neurodevelopmental disorder. ADHD is most commonly treated by medication along with varying types of therapy. Out of the children and adolescents diagnosed with ADHD, it was reported that in 2011, 6.1% of them were taking prescribed medication (Centers for Disease Control & Prevention, 2014). However, this is a significant increase from 2007, which reported 4.8% of children and adolescents were using prescribed medication (Centers for Disease Control & Prevention, 2014).

Attention-Deficit/Hyperactivity Disorder Medication

There are two types of prescribed medication for children and adolescents diagnosed with ADHD. These include stimulant and non-stimulant drugs. The main difference between these drugs is that stimulant medication is a “controlled substance” because it is a form of psychotropic medicine whereas non-stimulant medication is simply not (CHADD, 2013).

Possible Side Effects and Symptoms of Prescription Medication

Prescribed medication for children and adolescents with ADHD has been researched over a short amount of time. Methylphenidate, a commonly used ADHD medication, was passed as a “safe” medication before more rigid clinical and testing trials were set in place (Graham et al., 2011). The same study also identified adverse side effects of prescription medication, including methylphenidate, for ADHD, which include: neurological, psychiatric, and gastroenterological effects (Graham et al., 2011). There are a range of side effects and symptoms that may surface while a child or adolescent is taking these types of prescriptions. Some of these specific side effects and symptoms include issues with sleeping, loss of appetite, emotion regulation, and physical symptoms like stomach and head aches, tics, and a delay in growth (Boorady, 2016).

Although medication, both stimulant and non-stimulant, are known to “alleviate” ADHD symptoms, children and adolescents are still left in dealing with negative side effects of the prescribed medication. Research is unfortunately scarce in regards to long lasting/term effects from prescribed medication for ADHD (Med Shadow, 2014). However, these side effects and symptoms do raise questions in whether long term prescription usage has a negative effect on a child/adolescents development that later impacts functioning in adulthood. More extensive research is needed to provide support (or lack thereof) in regards to long lasting effects that carry on to adulthood.

Non-pharmacological Treatment for Children and Adolescents Diagnosed with Attention-Deficit/Hyperactivity Disorder

Although medication is the most common form of treatment for children and adolescents diagnosed with ADHD, there are other treatments that take a holistic approach. Non-pharmacological treatments include but are not limited to behavioral therapies, training interventions for children, parents, and teachers, dietary and food modifications, and acupuncture (Rajwan, Chacko, & Moeller, 2012). In addition to these non-pharmacological treatments, having a child/adolescent participate in playing outside in "green areas" was deemed successful in alleviating the severity of ADHD symptoms (Faber-Tayker & Kuo, 2011). There are clearly various non-pharmacological treatments that children, adolescents, parents, teachers, etc. can implement to improve the symptoms of the ADHD diagnosis. A non-pharmacological and holistic approach to treating ADHD is truly strengths based, in that the child/adolescent actively participates during their treatment process.

Training Interventions

Teacher, parent, and child training interventions refers to implementing "behavioral intervention strategies" in the home and school setting. Additionally, when the teachers, parents, and child participated in implementing these "behavioral intervention strategies," there were positive outcomes in the reduction of ADHD behaviors and observable symptoms (Rajwan, Chacko, & Moeller, 2012). Although this study was specific to preschool aged children diagnosed with ADHD, it is still relevant information and data in regards to this

study. An additional study showed parents and teachers who implemented "behavior-management techniques" helped in reducing problematic symptoms and behaviors related to ADHD (Antshel et al., 2011).

Dietary Restrictions and Nutritional Supplements

Dietary restrictions and nutritional supplements is another form of non-pharmacological treatment for ADHD. Karpouzis and Bonello (2012) suggest that the ingesting and intake of certain herbs can help in alleviating ADHD symptoms. It was noted that the absence and presence of particular vitamins and/or amino acids concluded that there is a positive correlation in decreasing symptomatic behaviors of ADHD. Additionally, it was suggested that a change in an individual's dietary choices might have influence on decreasing behaviors stemming from ADHD. In fact, dietary restrictions were stated to be the most commonly used form of a non-pharmacological treatment (Karpouzis & Bonello, 2012). Similarly, Sonuga-Barke et al. (2013) found positive results in free fatty acid supplementation and artificial food color exclusion in diets when reducing ADHD symptoms. Although Dietary restrictions/exclusions, as well as the intake of nutritional supplements, should be based off an individual's varying needs.

Behavioral Therapies and Neurofeedback

Behavioral therapies are often used as a complementary treatment with the use of prescribed medication. However, the use of psychotherapy like, Cognitive Behavioral Therapy (CBT), was deemed to produce positive results for children and adolescents with ADHD (Weisz, Weiss, Han, Granger, & Morton,

1995). These positive results indicate that there was a reduction of observable ADHD symptoms and behaviors in the children and adolescents used for this past study example.

CBT is a widely known therapy that is used throughout the practice of social work. According to Young and Myanthi (2010), it is suggested that the implementation of CBT and social skills training for kids ranging from k-12 ages, would promote positive and beneficial outcomes. It was noted that CBT would be extremely useful for children and adolescents with ADHD because it addresses the main symptoms and behaviors of the neurodevelopmental disorder.

Social skills training is another type of intervention used for children and adolescents diagnosed with ADHD. It was noted that social skills training, with the participation of the individual with ADHD, was resulting in positive and effective results (Gol & Jarus, 2005). However, the individual with ADHD was not the only participant needed for a successful outcome. Parental involvement *while* the child/adolescent was receiving social skills training was crucial in producing the positive results. In this case, parental involvement referred to the parent reinforcing the new learned behaviors and mechanisms (Gol & Jarus, 2005). Given the stated research, behavioral therapies like CBT and social skills training, can produce a reduction in observed ADHD symptoms.

In addition to behavioral therapies and trainings, neurofeedback is another option for non-pharmacological treatment. Neurofeedback focuses on having the individual, in this case a child or adolescent, “control particular brainwave

patterns” to increase self-control and regulation (Hodgson, Hutchinson, & Denson, 2014). Like CBT and social skills trainings, research has shown that neurofeedback, as a treatment for children and adolescents diagnosed with ADHD, was efficacious in reducing related symptoms and behaviors (Hodgson, Hutchinson, & Denson, 2014).

Conflicting Evidence

Unfortunately, there is conflicting research on whether a pharmacological or non-pharmacological approach is most effective and appropriate in treating ADHD amongst children and adolescents. Research suggests that alternative treatments (e.g. non-pharmacological, homeopathic, and/or alternative solutions) should never be the “sole” treatment for ADHD. Rather, this approach should be a “complementary” treatment in addition to the prescribed medication for the child or adolescent (Brown, 2005). Since research is limited on using only a non-pharmacological treatment to children and adolescents with ADHD, medication is still being urged for usage because of the more extensive research when comparing the two approaches (Brown, 2005). Additionally, a review measuring the outcomes of pharmacological versus non-pharmacological interventions showed that a pharmacological treatment was more effective in treating ADHD (Jadad, Boyle, Cunningham, Kim, & Schachar, 1999).

Theories Guiding Conceptualization

Two theories that are most appropriate and applicable to this research study include, Problem Solving Theory and Systems Theory. These two theories assist in understanding the issue of using non-pharmacological/alternative treatments for children and adolescents diagnosed with ADHD.

Problem Solving Theory

Problem Solving Theory is described as identifying and enhancing a client's capability to acknowledge their individual problems and work within a supportive therapeutic relationship while doing so (Turner, 2011). Problem Solving Theory (PST) is applicable to this study because it implements a process in the treatments for clients, in this case, children and adolescents. PST takes a strengths based approach in having the client be an active participant and use "problem solving" in their treatment process (Turner, 2011). More specifically, PST would allow children and adolescents to be active in their treatment process because they are given the control.

Applying PST to this research study would allow a child or adolescent to choose their treatment plan rather than just being prescribed medication. In fact, PST encourages clients to be proactive in exploring, solving, and finding a solution to their problem. Additionally, the PST seeks for overall long-term treatment rather than a short term one (Turner, 2011). PST would allow children and adolescents diagnosed with ADHD to discover other methods of treatment rather than just prescription medication. PST is relevant to this research study

because it assumes the self-determination of children and adolescents as well as promoting independence and autonomy. Rather than having prescribed medication as a primary and front-of-the-line treatment for children and adolescents, applying PST in this situation can help in understanding that through rational problem solving, there are other effective methods in which to "fix" this problem.

Systems Theory

Systems Theory, a rather common theory used in the field of social work, is also helpful in understanding this research study. Systems Theory can be defined as the relationship people have between their own physical and social environments and the interactions they face within those said environments (Zastrow & Kirst-Ashman, 2015). Systems theory is designed to take into account of all the different levels of interactions, environments, and functions an individual is operating within.

In order for an individual, in this case a child or adolescent with ADHD, to reach homeostasis, all of the systems and subsystems in their life must be cohesive by working together (Hepworth, Rooney, Dewberry Rooney, & Strom-Gottfried, 2013). A child or adolescent who is diagnosed with ADHD must achieve homeostasis, not just by taking prescribed medication but also by intervening with all of the systems within their life to optimize their treatment process.

Systems Theory is applicable to this research study in regards to how children and adolescents can benefit from more interventions than just prescribed medication. Children and adolescents live within multiple environments (e.g. home, school, recreational setting, etc.) as they are developing. On a social level, children and adolescents with ADHD are interacting with parents, teachers, peers, etc. Having proactive and participating parents and teachers for these children and adolescents, may positively enhance their treatment process because of the added support and involvement (Bussing et al., 2012). In having all of these entities come together to work in the treatment process, a child/adolescent can receive the additional support for multiple interventions from these relationships.

Summary

There are many approaches when implementing a non-pharmacological treatment for a child/adolescent with ADHD. However, the holistic treatment should be specialized to the individual seeking treatment. Additionally, extensive research is needed in furthering our understanding of pharmacological and non-pharmacological treatments for these children and adolescents diagnosed with ADHD. When relating Problem Solving Theory and Systems Theory to children/adolescents with ADHD, it provides a clear framework on why proper treatment is needed on multiple levels for this population.

Furthermore, this review will aim in addressing this question: What does current literature provide on the options and effectiveness of non-pharmacological and alternative treatments for children and adolescents who are diagnosed with ADHD?

CHAPTER THREE

METHODS

Introduction

This chapter will discuss the data used for this study, where the data was retrieved, and the methods in which the data was used. More specifically, this chapter will discuss the purpose of the study within the study design, the method of sampling that was used in retrieving data, specific data and instruments used while retrieving data, the procedures in which the data was collected, the protection in human subjects throughout the study, the concepts used with the study for the data analysis, and an overall summary.

Study Design

The purpose of this study will be in identifying non-pharmacological treatments and the effectiveness of non-pharmacological types of interventions for children and adolescents with ADHD by reviewing literature reviews, systematic and meta-analytic reviews. This research paper will be formulated as a review in order to provide general as well as specialized research in regards to this topic. A review is necessary in this case because the research question is not requiring in depth interviews or hard numbers in order to retrieve data. Instead, this study will rely on retrieving research and data from current published works and known interventions. This study will acknowledge non-

pharmacological treatments/interventions, discuss the utilization and availability of this approach, and discuss the potential benefits of treating ADHD through non-pharmacological approaches and interventions.

In addition, this study will be explanatory for various reasons. The study is explanatory because there has been research conducted and provided yet it is not generally recognized. Additionally, research is still being conducted and interventions/approaches are still being analyzed for effectiveness and availability. This study will acknowledge a multitude of sources of research on this topic in order to collectively bring together the most relevant and useful data. Although there is research regarding this topic, there are limitations in the research that is available. Considering that this topic is fairly current, there is not an abundance of research regarding non-pharmacological interventions for children and adolescents diagnosed with ADHD. Another limitation to this study design is the lack of human participation. Having human participation regarding this research project would allow insight and personal perspectives on non-pharmacological interventions/treatments for children and adolescents diagnosed with ADHD. An explanatory study will allow further research into finding the additional benefits, social work involvement, and/or possible ramifications that this question seeks to discover regarding this topic. Lastly, this review aims to provide a comprehensive review of the many non-pharmacological interventions that can be utilized for children and adolescents diagnosed with ADHD.

Sampling

The data that was retrieved for this study is exclusively from peer-reviewed journals that pertain to non-pharmacological interventions specific to a ADHD diagnosis for children and adolescents. In order to provide a comprehensive review on non-pharmacological interventions for children and adolescents diagnosed with ADHD, sources have met the criteria of keywords that will be further discussed within the procedures. The scholarly journals and articles that will be used to provide the research and understanding of the topic will be retrieved from academic libraries as well as online academic databases. Academic databases include EBSCOhost, psycINFO, and Google Scholar, which are all accessible through California State University, San Bernardino's (CSUSB) online library. The accessibility of data through online academic databases, related texts, and government/academic websites allows this study to be very feasible. Additionally, all of the data gathered for this project will be from academic sources in order to uphold credibility in this study.

Data Collection and Instruments

Considering this research study is designed to be a review, there will not be any independent or dependent variable(s) present within the research topic and overall study. In addition to the lack of independent and dependent variables, no qualitative questions (e.g. interviews) will be conducted or used within the

research process for this study. Therefore, this study's data is not dependent upon retrieving research through interviews, questionnaires, or surveys.

There are few materials needed to complete this review. Specific materials include Internet access, access to the Pfau library at CSUSB, and a student identification number in order to retrieve data from particular academic databases. This study does not require any special tools or instruments used for data collection or testing reliability/validity.

Procedures

Retrieving data from online databases, textbooks, and government/academic sites will be conducted online as well physically utilizing CSUSB's library. Specifically, data collection will be retrieved through online databases (EBSCOhost, Google Scholar, and Google.) with keywords that will be entered in order to filter through research that is related to this study. Keywords include: ADHD, diagnosis, children and adolescents, non-pharmacological interventions, therapy, ADHD medication, holistic interventions, holistic strategies, non-stimulant treatment, non-medication treatment, medication ramifications, and side effects. Keywords are used in order to extract data that pertains to non-pharmacological interventions used for children and adolescents diagnosed with ADHD. The criteria for the literature that will be used have to be academic based (from verified academic databases/university libraries), have reliable sources/research that support the research within the articles/journals,

from verifiable organizations (federal/state government), and most importantly, provides valid information regarding non-pharmacological treatments for ADHD. Additionally, a limitation that may occur in the data collection procedure is if there is prohibited access to articles and journals despite university and student affiliation.

The time period in which data collection will occur will be October 2016 to March 2017. Clara Delgado will conduct data collection from online databases as well as utilizing library resources within said time frame.

Protection of Human Subjects

The study does will not depend on or use human subjects for participation in data collection. There is no necessity for human subject participation because all of the retrieved data will be archival/known data. Although this study is not dependent upon human subjects for participation in data collection, it will still go through an initial Collaborative Institutional Review Board Training Initiative (CITI) IRB approval. The CITI IRB completion is to ensure that this study will follow IRB guidelines, ethics, and overall integrity.

Data Analysis

After an extensive period of data collection, the data will reflect a synthesis of the studies found within the reviews of the articles that pertain to this study. Additionally, the synthesis will be organized by the type of intervention and

effectiveness of the retrieved data from the various studies. This comprehensive review will recognize the options of non-pharmacological interventions for children and adolescents diagnosed with ADHD, the tested effectiveness of these interventions/treatments, and the implications this topic has on the field of social work. In addition to creating a comprehensive review, this study has included relative theories to assist in the conceptualization of this research topic.

Although this review will not be actively comparing research findings, it will aim to address the various levels of interventions and their effectiveness, and whether there are any trends within the collected data. Again, no comparisons will be made between research findings on non-pharmacological interventions or approaches.

A thorough discussion will be provided on the various non-pharmacological interventions/treatments and their effectiveness. The central purpose of this study is identify the many non-pharmacological interventions for children and adolescents diagnosed with ADHD (whether or not they have been proven to be effective interventions when implemented is dependent upon the retrieved data).

Summary

This study aims to provide a comprehensive review of the many non-pharmacological interventions that can be utilized for children and adolescents

with ADHD. This study will also identify major interventions as well as theories supporting the usage of a non-pharmacological approach.

CHAPTER FOUR

RESULTS

Introduction

In this chapter, the results of the study's findings will be presented. As mentioned before, this study is a review of other reviews on non-pharmacological treatments/interventions for children and adolescents diagnosed with ADHD. Within this review, it was concluded that three of the articles within the literature met the criteria of the study. Sonuga Barke et al. (2013), Hodgson, Hutchinson, and Denson (2014), and Karpouzis and Bonello (2012) were the articles that fit the appropriate criteria for this study. Each of these articles, present multiple interventions, the type of control used, the age of the sample, the percentage of males within the study, and the results of whether the intervention was effective or not. A chart of each intervention and the given information will be provided within the appendix section of this research project. For each study and the identified intervention, only the name of the first author will be provided within the chart. Additionally, the interventions and their effectiveness will be discussed within their specified categories. The specific categories of interventions that will be discussed include, diet/food modification, cognitive training, neurofeedback, and behavioral interventions. It must be noted that within this results section, an identified study within Hodgson, Hutchinson, and Denson (2014), did not provide any details to the specific intervention used and the effectiveness (Kapalka &

Bryk, 2007). Additionally, two separate studies by the same authors, similarly, did not produce/provide results to when their intervention was implemented (Goyette, Connors, Petti, & Curtis, 1978). Of the total seventy studies identified by the three articles, sixty-seven of them produced results that will be discussed.

Within each of these main categories are subcategories that each identified interventions will be placed under. As mentioned before, only three articles fit the criteria of the study, however, each of these articles will present an extensive list of identified interventions and their effectiveness for children and adolescents diagnosed with ADHD. Again, the studies presented within the three articles that matched this study's criteria, were examined in hopes to see which interventions were effective or not effective in decreasing symptomatology/behaviors of ADHD within diagnosed children and adolescents.

Diet/food Modification

The subcategories that the designated interventions within this category include: a restricted eliminations diet, artificial food color exclusions, free fatty acid supplementations, and Dietary/herbal supplements.

Restricted Eliminations Diet. Within this category, it was presented that the two studies who used an elimination diet as the tested intervention were both shown to be effective treatments (Pelsser et al., 2009; Pelsser et al., 2011). For the two studies using known antigenic foods, the two studies also concluded to being effective treatments (Boris & Mandel, 1994; Kaplan, McNicol, Conte, & Moghadam, 1989). Specific provoking food as an intervention concluded that the

two studies found this specific treatment to be effective (Carter et al., 1993; Egger, Carter, Graham, Gumley, & Soothill, 1985). Lastly, the one study using an Oligoantigenic diet provided the intervention to have mixed results (Schmidt et al., 1997). Within restricted eliminations diet, it was shown that the majority of the studies were shown to be effective treatments despite the Oligoantigenic diet which concluded with mixed results for its effectiveness.

Artificial Food Color Exclusions. Four studies using certified food colors as their type of intervention had varying results. Two studies, conducted by the same researchers, under this categorization did not provide the effectiveness of its treatment, therefore, making the effectiveness unknown/unavailable (Goyette, Connors, Petti, & Curtis, 1978). The last two studies using certified food colors as an interventions showed differing results. A study conducted by Harley, Matthews, & Eichman proved certified food colors to not be effective as a treatment (1978). Whereas Williams, Cram, Tausig, & Webster's study found "certified food colors to be effective as a treatment (1978). The last four studies used various specified interventions within this category. A Kaiser Permanente diet, a Feingold diet, the utilization of Tartrazine, and unspecified food colors. The Kaiser Permanente diet concluded with mixed results for treatment (Conners, Goyette, Southwick, Lees, & Andrulonis, 1976). Whereas the Feingold diet, utilization of Tartrazine, and unspecified food colors, concluded to not be effective as treatments (Harley et al., 1978; Levy & Hobbes, 1978; Adams, 1981).

Free Fatty Acid Supplementation. The studies using Omega-3 as intervention for a free fatty acid supplementation included varying results. Three articles presented in having Omega-3 to be an effective treatment to children and adolescents diagnosed with ADHD (Bélanger et al., 2009; Gustafsson et al., 2010; Johnson, Ostlund, Fransson, Kadesjö, & Gillberg, 2009). Whereas, a study conducted by Stevens et al. concluded its findings to have mixed results in regards to treatment being effective or not (2003). Additionally, Voigt et al. concluded that the treatment of Omega-3 was not effective as a treatment for its study (2001). Two studies using Omega-6 concluded that this specific intervention was proven to not be effective as a treatment (Aman, Mitchell, & Turbott, 1987; Arnold et al., 1989). Lastly four studies used an intervention of both Omega-3, -6. Two of the studies proved Omega-3, -6 as an intervention to be effective as a treatment (Manor et al., 2012; Sinn & Bryan, 2007). In contrast, the last two studies under this specified category deemed the Omega-3, -6 intervention to not be effective as a treatment (Hirayama, Hamazaki, & Terasawa, 2004; Raz, Carasso, & Yehuda, 2009).

Dietary/Herbal Supplements. The last distinguished intervention within this category is a mixture of dietary/herbal supplements. The herbal supplement of a Ningdong granule proved to be effective as a treatment (Li et al., 2011) and a compound herbal preparation also proved to be effective as a treatment (Katz, Levine, Kol- Degani, & Kav-Venaki, 2010). In addition, the last three studies using other unspecified dietary/herbal supplements as an intervention for children

and adolescents diagnosed with ADHD all proved to be effective as treatments (Harding, Judah, & Gant, 2003; Huss, Völp, & Stauss-Grabo, 2010; Richardson & Puri, 2002).

Cognitive Training

The cognitive training interventions include: attention training, working memory training, and one study of cognitive behavioral gameplay/biofeedback game play as distinct interventions within this category.

Attention Training. For the three studies involving attention training as the method of intervention, each of them proved this type of specific intervention to be effective as a treatment (Rabiner, Murray, Skinner, & Malone, 2010; Shalev, Tsal, & Mevorach, 2007; Steiner, Sheldrick, Gotthelf, & Perrin, 2011). These separate studies displayed the same results in that the intervention of attention training was deemed to be effective as a treatment to children and adolescents diagnosed with ADHD.

Working Memory Training. Working memory training as a method of intervention proved to be effective as a treatment within the three articles provided (Johnstone, Roodenrys, Phillips, Watt, & Mantz, 2010; Johnstone et al., 2012; Klingberg et al., 2005). Similar to attention training as an intervention, working memory training also proved to be effective as a treatment with each study that was presented.

Cognitive Behavioral Game Play/Biofeedback Game Play. Last within this category remains one study on cognitive behavioral game play/biofeedback

game play as an intervention. This intervention proved to have mixed results within the study (Kaduson & Finnerty, 1995).

Neurofeedback

Neurofeedback as an intervention for children and adolescents diagnosed with ADHD, was shown thrown specific interventions which included, Theta-beta training, slow cortical potential training, EEG biofeedback, and others.

Theta-beta Training. The five studies that used Theta-beta training as a distinct intervention all concluded the treatment to be effective for children and adolescents diagnosed with ADHD (Steiner, Sheldrick, Gotthelf, & Perrin, 2011; Bakhshayesh, Hänsch, Wyschkon, Rezai, & Esser, 2011; Beauregard & Lévesque, 2006; Holtmann et al., 2009; Linden, Habib, & Radojevic, 1996). As previously mentioned five out of five of the studies regarding Theta-beta training for an intervention were all deemed to be an effective treatment.

Slow Cortical Potential Training. In regards to slow cortical potential training as an intervention, the two studies examined their results to be effective as a treatment (Drechsler et al., 2007; Heinrich, Gevensleben, Freisleder, Moll, & Rothenberger, 2004).

Electroencephalogram Biofeedback. Two studies using EEG biofeedback as an intervention produced two different results. One study concluded its study with mixed results in regard to an effective/not effective treatment (Carmody, Radvanski, Wadhwani, Sabo, & Vergara, 2001). In contrast, the other study

using EEG biofeedback concluded it to be an effective treatment (Fuchs, Birbaumer, Lutzenberger, Gruzelier, & Kaiser, 2003).

Other Interventions within Neurofeedback. The last two studies regarding neurofeedback include one study using Theta-beta and slow cortical potential training combined and a study using IFBT. The study using Theta-beta in combination with slow cortical potential training proved to be an effective treatment (Gevensleben et al., 2009) and the study using IFBT as an intervention also proved to show that the treatment was effective (Lansbergen, van Dongen-Boomsma, Buitelaar, & Slaats-Willemse, 2011).

Behavioral Interventions

Lastly, various levels of behavioral interventions were identified within the three articles that fit the criteria of this study. The specific subcategories within behavioral interventions include, parent training, parent and child training, child, parent, and teacher training, and child training.

Parent Training. Eight separate studies provided insight to whether or not parent training was an effective treatment for children and adolescents diagnosed with ADHD. Five of the eight studies concluded that parent training was an effective treatment (Bor, Sanders, & Markie-Dadds, 2002; Hoath & Sanders, 2002; Jones, Daley, Hutchings, Bywater, & Eames, 2008; Sonuga-Barke, Daley, Thompson, Laver-Bradbury, & Weeks, 2001; Thompson et al., 2009). Lastly, two of the eight studies produced mixed results in regards to treatment (Pisterman et al., 1992; van de Hoofdakker et al., 2007) and the

remaining single study of the eight within parent training concluded that the treatment was not effective (Sonuga-Barke, Daley, Thompson, & Laver-Bradbury, 2004).

Parent and Child Training. Four studies examined parent and child training as a specified behavioral intervention. Two out of the four studies in parent and child training resulted in the treatment to be effective (Fehlings, Roberts, Humphries, & Dawe, 1991; Webster-Stratton, Reid, & Beauchaine, 2011). Whereas one study of the four for parent and child training was deemed to have mixed results (Evans, Schultz, Demars, & Davis, 2011) and the last remaining study of the four found the intervention of parent and children training to not be an effective treatment (Horn et al., 1991).

Child, Parent, and Teacher Training. The two studies within this subcategory had varying results. One study produced mixed results in regards to this intervention/treatment (Bloomquist, August, & Ostrander, 1991). In contrast, the second study resulted in being effective for treatment (MTA Cooperative Group, 1999).

Child Training. There were two studies identified using child training as an intervention. In the first study identified, mixed results were produced in regards to treatment effectiveness (Brown et al., 1986). The second study concluded child training to be an effective treatment for children and adolescents diagnosed with ADHD (Miranda, Jarque, & Rosel, 2006).

Other Interventions within Behavioral Interventions. Lastly, there were four other studies within behavioral interventions that each have tested a subcategory intervention. First, teacher training as an intervention was deemed to be an effective treatment (Miranda, Presentacion, & Soriano, 2002). Second, parent and child monitoring was also proven to be an effective treatment (Meyer & Kelley, 2007). Third, a study using a Multimodal psychosocial treatment in conjunction with methylphenidate resulted in the having the treatment not be effective. Lastly, a study implementing behavior therapy combined with methylphenidate as an intervention within behavioral interventions, ended in mixed results (Klein & Abikoff, 1997).

Summary

As stated above there were various interventions that were identified and concluded results with the treatment being effective, not effective, or having mixed results. Out of the seventy identified studies within the three articles fitting criteria, three studies (Goyette, Connors, Petti, & Curtis, 1978; Kapalka & Bryk, 2007), did not produce any available results. Of the sixty-seven remaining studies identified within Sonuga-Barke et al. (2013), Hodgson, Hutchinson, and Denson (2014), and Karpouzis and Bonello (2012), forty-four studies found treatment to be effective, twelve studies found treatment to not be effective, and the last eleven studies produced mixed results. In summation, among the various types of interventions, a large portion, specifically forty-four within the notable

sixty-seven studies, were deemed to be effective in decreasing symptomatology of ADHD.

CHAPTER FIVE

DISCUSSION

Introduction

As identified within the literature and results of this review, there are various non-pharmacological interventions that can be implemented/used to treat children and adolescents diagnosed with ADHD. As stated within the previous chapters, ADHD symptomatology varies from individual to individual. An ADHD diagnosis manifests differently within each child or adolescent, which then requires treatment to be personalized to the individual. A further review regarding the identified interventions/treatments and their effectiveness will be discussed.

Discussion

Within the results, it was noted that sixty-seven of the studies had identified the intervention as well as the effectiveness. As previously mentioned, three studies, two of which were conducted by the same author (Goyette, Connors, Petti, & Curtis, 1978; Kapalka & Bryk, 2007) did not produce results/effectiveness for their interventions. To further look at the trends by category, it is important to distinguish how many interventions were/were not effective as treatments.

Within the diet/food modification category, there were twenty-nine studies that produced results in regards to effectiveness. Seventeen of the studies within

diet/food modification resulted in the intervention/treatment being effective. In contrast, nine of the twenty-four were deemed to have the intervention not be effective as treatment and the last three within the category produced mixed results. To generalize, more than half of the twenty-nine studies using diet/food modification as an intervention were effective as a treatment to for children and adolescents diagnosed with ADHD.

Cognitive training as a category for non-pharmacological treatment to ADHD, had a total of seven studies testing effectiveness. Within these seven studies, six of them proved the intervention to be effective as a treatment for children and adolescents diagnosed with ADHD. The remaining single study within the category produced mixed results for the effectiveness of the intervention as a treatment. In summation, cognitive training as a treatment for ADHD proved to have the majority of the results to be effective despite the single study that produced mixed results.

The category of neurofeedback as a treatment for ADHD identified eleven studies. Within these eleven studies, ten of them produced results that concluded neurofeedback to be effective as a treatment. The single remaining study produced mixed results. To generalize, neurofeedback as a treatment had the majority of its specific interventions be effective as treatment, despite the single study having mixed results.

In regards to the category of behavioral interventions, there were twenty studies that produced results. Within these twenty studies, eleven were effective

as a treatment, six produced mixed results, and three concluded with this category of treatment to not be effective. Overall, half of the studies within behavioral interventions were concluded to have this type of treatment to be effective.

As the results in chapter four concluded, forty-four of the sixty-seven studies that produced results indicated that the non-pharmacological intervention utilized was effective as a treatment. Over half of the identified studies within the three articles concluded that non-pharmacological treatments were effective when used as a treatment to ADHD.

Unanticipated Results/Limitations

There were two unanticipated results/limitations that were apparent during this study. First, the most notable limitation was the fact that there were only three articles within this review that fit the specific criteria. Although only three articles fit the criteria, they were each able to identify a multitude of studies that were able to produce results for effectiveness/lack of effectiveness.

The second limitation/unanticipated results came from the three studies that did not provide information/accessibility to their results (Goyette, Connors, Petti, & Curtis, 1978; Kapalka & Bryk, 2007). Unfortunately, these three studies were unable to provide further insight into the effectiveness of their tested non-pharmacological intervention. The two studies provided by Goyette, Connors, Petti, and Curtis (1978) identified the type of intervention, control, and age of

sample. They did not provide any information regarding the percentage of males within the study and the results of the treatment being effective or not. In regards to the study conducted by Kapalka and Bryk (2007) no information was provided for the type of intervention, control, age in sample, percentage of males, or results. Therefore, this study was placed last within the chart, as it did not provide enough information to be placed within a specific intervention category.

Recommendations for Social Work Practice, Policy, and Research

As previously mentioned, ADHD symptomatology manifests differently based on the individual. In regards to social work practice, specifically the mental/behavioral health sector, knowing the various levels of interventions for ADHD is crucial for comprehensive, quality treatment. Whether a non-pharmacological or pharmacological approach is implemented for the child/adolescent with an ADHD diagnosis, the treatment needs to be individualized. Since many of these non-pharmacological interventions included family/parent involvement, like behavioral and diet/food modification interventions, the field of social work needs to continuously shed light on these approaches as they involve not only the individual but the family. In addition to the family involvement, having children and adolescents diagnosed with ADHD partake in their treatment using a non-pharmacological intervention, like child training (behavioral intervention), allows the individual to be proactive in their

treatment process. The social work field acknowledges strengths-based practices/treatment which a non-pharmacological approach incorporates.

Although this study provided sixty-seven non-pharmacological interventions/treatments for children and adolescents diagnosed with ADHD, additional and extensive research is still needed. Since there is a stigma of holistic/non-pharmacological interventions not being seen as highly as the pharmacological approaches, furthering research in non-pharmacological interventions may help in decreasing stigma and increasing awareness of the potential effectiveness for treating ADHD. As research continues to grow within this particular topic, more data on the effectiveness of non-pharmacological interventions would be beneficial to clinical and academic fields.

Conclusions

This review was able to take from the three articles that fit within the needed criteria. Within these three articles, sixty-seven studies gave results in terms of non-pharmacological interventions being effective or not effective in decreasing ADHD symptomatology. Although there were various non-pharmacological interventions/treatments tested for effectiveness, again, more research is needed in regards to the benefits and effectiveness of non-pharmacological interventions. However, this is not to dismiss that this review found there to be more than half of the non-pharmacological interventions to be effective in treating ADHD symptomatology.

In conclusion for this review, the results demonstrate that forty-four of the identified studies out of the total sixty-seven, resulted in having the non-pharmacological treatment be effective. This review was able to identify and recognize multiple types of non-pharmacological interventions that can be utilized by children and adolescents diagnosed with ADHD. The purpose of the review was to identify and address the potential non-pharmacological interventions and whether or not research has indicated particular studies to be effective and decrease ADHD symptomatology.

APPENDIX A

NON-PHARMACOLOGICAL INTERVENTIONS CHART

Non-Pharmacological Interventions Chart

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Pelsser (2011)	Restricted elimination diet; Elimination diet	Waiting list	3-9	86	Treatment effective
Boris (1994)	Restricted elimination diet; Known antigenic foods	Placebo	7.5	69	Treatment effective
Kaplan (1989)	Restricted elimination diet; Known antigenic foods	Placebo	3-6	100	Treatment effective
Carter (1993)	Restricted elimination diet; Specific provoking food	Placebo	3-12	74	Treatment effective
Egger (1985)	Restricted elimination diet; Specific provoking food	Placebo	3-12	88	Treatment effective
Pelsser (2009)	Restricted elimination diet; Elimination diet	Waiting list	3-9	81	Treatment effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Schmidt (1997)	Restricted elimination diet; Oligoantigenic diet	Control diet	7-12	96	Mixed results
Goyette (1978)	Artificial food color exclusions; Certified food colors	Placebo	4-12	n.a.	n.a.
Goyette (1978)	Artificial food color exclusions; Certified food colors	Placebo	3-10	n.a.	n.a.
Harley (1978)	Artificial food color exclusions; Certified food colors	Placebo	9.2	100	Treatment not effective
Williams (1978)	Artificial food color exclusions; Certified food colors	Placebo	6-14	93	Treatment effective
Conners (1976)	Artificial food color exclusions; Kaiser Permanente diet	Control diet	6-13	n.a.	Mixed results
Harley (1978)	Artificial food color exclusions; Feingold diet	Control diet	6-13	100	Treatment not effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Levy (1978)	Artificial food color exclusions; Tartrazine	Placebo	5.2	88	Treatment not effective
Adams (1981)	Artificial food color exclusions; Unspecified food colors	Placebo	4-12	83	Treatment not effective
Belanger (2009)	Free fatty acid supplementation; Omega-3	Placebo	8.3	69	Treatment effective
Gustafsson (2010)	Free fatty acid supplementation; Omega-3	Placebo	7-12	80	Treatment effective
Johnson (2009)	Free fatty acid supplementation; Omega-3	Placebo	8-18	85	Treatment effective
Stevens (2003)	Free fatty acid supplementation; Omega-3	Placebo	6-13	87	Mixed results
Voigt (2001)	Free fatty acid supplementation; Omega-3	Placebo	6-12	78	Treatment not effective
Aman (1987)	Free fatty acid supplementation; Omega-6	Placebo	8.9	87	Treatment not effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Arnold (1989)	Free fatty acid supplementation; Omega-6	Placebo	6-12	100	Treatment not effective
Hirayama (2004)	Free fatty acid supplementation; Omega-3, -6	Placebo	6-12	80	Treatment not effective
Manor (2012)	Free fatty acid supplementation; Omega-3, -6	Placebo	6-13	70	Treatment effective
Raz (2009)	Free fatty acid supplementation; Omega-3, -6	Placebo	7-13	60	Treatment not effective
Sinn (2007)	Free fatty acid supplementation; Omega-3, -6	Placebo	7-12	74	Treatment effective
Katz (2010)	Dietary supplements; Compound herbal preparation	Placebo	6-12	n.a.	Treatment effective
Li (2011)	Dietary supplements; Ningdong granule	Methylphenidate group	n.a.	n.a.	Treatment effective
Harding (2003)	Dietary supplements; Nutraceutical	Ritalin group	7-12	n.a.	Treatment effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Huss (2010)	Dietary supplements; ESPRICO	Treatment as usual	5-12	71	Treatment effective
Richardson (2002)	Dietary supplements; HUFA	Placebo	8-12	85	Treatment effective
Rabiner (2010)	Cognitive training; Attention training	Waiting list	n.a.	69	Treatment effective
Shalev (2007)	Cognitive training; Attention training	Computer game	6-13	83	Treatment effective
Steiner (2011)	Cognitive training; Attention training	Waiting list	12.4	52	Treatment effective
Johnstone (2010)	Cognitive training; Working memory training	Easy training	8-12	85	Treatment effective
Johnstone (2012)	Cognitive training; Working memory training	Waiting list	7-12	86	Treatment effective
Klingberg (2005)	Cognitive training; Working memory training	Easy training	7-12	82	Treatment effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Kaduson (1995)	Cognitive Training; Cognitive behavioral game play & biofeedback game play	Game group	8-12	92	Mixed results
Steiner (2011)	Neurofeedback; Theta-beta training	Waiting list	12.4	52	Treatment effective
Bakhshayesh (2011)	Neurofeedback; Theta-beta training	EMG biofeedback	6-14	74	Treatment effective
Beauregard (2006)	Neurofeedback; Theta-beta training	No treatment	8-12	55	Treatment effective
Holtmann (2009)	Neurofeedback; Theta-beta training	Cognitive exercise	7-12	91	Treatment effective
Linden (1996)	Neurofeedback; Theta-beta training	Waiting list	5-15	n.a.	Treatment effective
Heinrich (2004)	Neurofeedback; Slow cortical potential training	Waiting list	7-13	95	Treatment effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Drechsler (2007)	Neurofeedback; Slow cortical potential training	Group therapy program	9-13	77	Treatment effective
Fuchs (2003)	Neurofeedback; EEG biofeedback	Methylphenidate group	8-12	97	Treatment effective
Carmody (2001)	Neurofeedback; EEG biofeedback	Waiting list	8-10	n.a.	Mixed results
Gevensleben (2009)	Neurofeedback; Theta-beta and slow cortical potential training	Cognitive exercise	8-12	82	Treatment effective
Lansbergen (2011)	Neurofeedback; IFBT	Placebo neurofeedback	8-15	93	Treatment effective
Bor (2002)	Behavioral interventions; Parent training	Waiting list	3.6	73	Treatment effective
Hoath (2002)	Behavioral interventions; Parent training	Waiting list	5-9	76	Treatment effective
Jones (2008)	Behavioral interventions; Parent training	Waiting list	3.8	68	Treatment effective
Pisterman (1992)	Behavioral interventions; Parent training	Waiting list	4.1	91	Mixed results

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Sonuga-Barke (2001)	Behavioral interventions; Parent training	Attention control	2-4	62	Treatment effective
Sonuga-Barke (2004)	Behavioral interventions; Parent training	Waiting list	2-4	n.a.	Treatment not effective
Thompson (2009)	Behavioral interventions; Parent training	Waiting list	2-6	73	Treatment effective
van de Hoofdakker (2007)	Behavioral interventions; Parent training	Treatment as usual	4-12	76	Mixed results
Evans (2011)	Behavioral interventions; Parent and child training	Treatment as usual	11-13	71	Mixed results
Fehlings (1991)	Behavioral interventions; Parent and child training	Nondirective therapy and/or support	8-11	100	Treatment effective
Horn (1991)	Behavioral interventions; Parent and child training	Placebo	7-11	n.a.	Treatment not effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Webster-Stratton (2011)	Behavioral interventions; Parent and child training	Waiting list	6.4	75	Treatment effective
Bloomquist (1991)	Behavioral interventions; Child, parent, and teacher training	Waiting list	8.5	69	Mixed results
MTA (1999)	Behavioral interventions; Child, parent, and teacher training	Treatment as usual	8.3	80	Treatment effective
Brown (1986)	Behavioral interventions; Child training	Nondirective therapy and/or support	5-13	85	Mixed results
Miranda (2006)	Behavioral interventions; Child training	No treatment	8	88	Treatment effective
Hechtman (2004)	Behavioral interventions; Multimodal psychosocial treatment (MPT) & methylphenidate	Methylphenidate group	7-9	n.a.	Treatment not effective

Non-Pharmacological Interventions Chart Continued

Author(s) & Year	Type of Intervention	Type of Control	Age of Sample, in Years (mean or range)	Male (%)	Results (treatment effective; treatment not effective)
Klein (1997)	Behavioral interventions; Behavior therapy & methylphenidate	Placebo	6-12	n.a.	Mixed results
Meyer (2007)	Behavioral interventions; Parent and child monitoring	Waiting list	n.a.	n.a.	Treatment effective
Miranda (2002)	Behavioral interventions; Teacher training	No treatment	8-9	82	Treatment effective
Kapalka (2007)	n.a.	n.a.	n.a.	n.a.	n.a.

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
SCHOOL OF SOCIAL WORK
Institutional Review Board Sub-Committee

Researcher(s) Clara Delgado

Proposal Title Non-Pharmacological Treatments for Children and Adolescents Diagnosed with ADHD

SU17317

Your proposal has been reviewed by the School of Social Work Sub-Committee of the Institutional Review Board. The decisions and advice of those faculty are given below.

Proposal is:

__✓__ approved

_____ to be resubmitted with revisions listed below

_____ to be forwarded to the campus IRB for review

Revisions that must be made before proposal can be approved:

_____ faculty signature missing

_____ missing informed consent _____ debriefing statement

_____ revisions needed in informed consent _____ debriefing

_____ data collection instruments missing

_____ agency approval letter missing

_____ CITI missing

_____ revisions in design needed (specified below)

_____

_____

_____

_____

_____

_____

_____ 12/20/2016

Committee Chair Signature Date

Distribution: White-Coordinator; Yellow-Supervisor; Pink-Student

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