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MEDICATION'S EFFECT ON CLASSIFIED STUDENT'S  
SELF-ESTEEM AND ACADEMIC PERFORMANCE

by:  
Rachel S. Grizer

A Thesis

Submitted in partial fulfillment of the requirements of the  
Master of Arts Degree  
of  
The Graduate School  
at  
Rowan University  
May 6, 2009

Approved by \_\_\_\_\_  
Advisor

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## ABSTRACT

Rachel S. Grizer

### MEDICATION'S EFFECT ON CLASSIFIED STUDENT'S SELF-ESTEEM AND ACADEMIC PERFORMANCE

2008/09

Dr. Roberta Dihoff and Dr. John Klanderman  
Master of Arts in School Psychology

The purpose of this study was to determine how medication affects self-esteem and academic performance in classified students. This study intended to focus on various disorders found in childhood to allow for an understanding of the effects of medication on self-esteem and academic performance in general. Specifically, it was hypothesized that children who receive medication for a disorder would have higher self-esteem and superior academic performance compared to children who do not receive medication. The self-concept scores from previously administered Beck Youth Inventories (BYI) and average academic grades were obtained from 50 students, 25 medicated and 25 not medicated, enrolled in a local school district. Results were analyzed using an independent samples t-test and a Mann-Whitney test, within subjects. The results from each test were compared to the standard BYI scores and average age appropriate academic grades to demonstrate the differences seen in special education students. Results indicated that, while a slight improvement was seen in the self-esteem scores in the medication group, a statistical difference was not found; however, a highly significant statistical difference (.000) was found for academic performance.

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## CHAPTER I

### The Problem

#### Need

Over the years, the use of medication has become more prevalent for treating various psychological disabilities in children. Medical treatment has been shown to have many beneficial effects on the child's social, emotional, and academic capabilities. Many parents, however, are skeptical about giving their child any form of oral medication. Fears about social stigmas and lack of opportunities that arise for children with psychological disabilities create an unwillingness to accept the fact that their child actually has a disability (Hinshaw & Stier, 2008). This lack of acceptance creates an unwillingness to seek medical treatment and places the child in a difficult situation. Few studies exist that examine children's awareness and response to psychological disorders, treatments, and medications in general (McNeal, Roberts, & Barone, 2000).

Children are very much influenced by their family and peers. Many articles suggest that children have a negative attitude toward medication, mostly because they are unaware of its different uses and needs (Ha'meen-Anttila, Juvonen, Ahonen, Bush, & Airaksinen, 2005). A negative attitude can result in embarrassment and apprehension in children who need to take medication. However, this reaction from some children may not outweigh the advantageous effects that the medication can provide.

It is a known fact that stimulant medication can be an effective and beneficial treatment for children with attention deficit/hyperactivity disorder (ADHD). This



treatment allows the child to concentrate, behave properly according to social standards, reduce restlessness, plus many other favorable results (Neophytou & Webber, 2005). Whalen and Henker (1976) contend that between 60% and 90% of studied children on medication tend to improve and show significant behavioral changes in all aspects of their life. Improvement in schoolwork, social activities, and family interaction is very likely to also improve the self-esteem of the child.

According to Harter (1993), self-esteem refers to “one’s global regard for oneself as a person” (Bussing, Zima, & Perwien, 2000, p. 1260). In this regard, one’s self-esteem has the power to determine one’s achievement or failure depending on how their self-esteem is ultimately shaped. It has been reported that one of the leading problems in children with ADHD is the level of low self-esteem (Frankel, Cantwell, Myatt, & Feinberg, 1999; Kelly, Cohen, Walker, Caskey, & Atkinson, 1989). Due to the typical behavioral problems that children with psychological disabilities exhibit, other children are often reluctant to associate with them. Children with these disorders are often disruptive, violent, vocal, and are often being reprimanded for these behaviors. It is not surprising that they tend to have few friends and are often isolated (Neophytou & Webber, 2005). This isolation and constant reprimands will no doubt have an effect on the child’s self-esteem as well as his or her academic performance. When a student is unable to pay attention in class, complete assignments, or participate in class, and has low self-esteem their academic performance is bound to suffer.

Much research exists on the effects of medication on children with ADHD; however, limited research exists about other psychological disabilities such as ODD,

bipolar disorder, and autism. When a self-esteem and academic performance comparison is administered to students receiving and not receiving medication, regardless of the actual diagnosis, an overall understanding of medications effects can be achieved.

#### Purpose/ Significance

The purpose of this study was to determine how self-esteem and academic performance was affected by the use of medication in children. Although a number of studies in this area have been performed, most concentrate on attention-deficit/hyperactivity disorder (ADHD). This study intended to focus on ADHD, as well as other psychological disorders found in children such as oppositional defiant disorder (ODD), obsessive-compulsive disorder (OCD), autism, depression, anxiety, and bipolar disorders. The inclusion of multiple disabilities allowed for an understanding of the effects of medication on self-esteem and academic performance in general so that the results can be applied to many other disabilities.

#### Hypothesis

This study hypothesized that the children who receive medication for their specific disorder would have higher self-esteem as well as superior academic performance compared to the children who do not receive medication. However, both groups would have lower self-esteem than average levels, since there is a strong stigma related to medication and disabilities in general that would lower the self-esteem in these groups. The null hypothesis stated that there will be no effect on the self-esteem or academic performance of children who receive medication for their psychological disability. This study aimed to reject the null hypothesis and demonstrate that medication

is a safe and effective treatment that is highly beneficial for children with various disabilities.

#### Operational Definitions

**Academic Performance:** The level of a student's achievement in the classroom; for this study the student's current grades were used to determine academic performance.

**Classified Student:** Refers to students that have been diagnosed with a psychological disorder and currently have an individualized education plan (IEP).

**Individualized Education Plan (IEP):** A document specifically written for every child in need of special education and must help teachers and related service providers understand the student's disability and how the disability affects the learning process. The document must include: The child's present levels of academic and functional performance, measurable annual goals, how the child's progress toward meeting the annual goals are to be measured and reported to the parents, special education services, related services, and supplementary aids to be provided to the child, schedule of services to be provided, program modifications or supports provided to school personnel on behalf of the child, explanation of nonparticipation with nondisabled children, and accommodations to be provided during state and district assessments (Santrock, 2006).

**Medication:** Intended for use in the treatment and prevention of symptoms associated with psychological disorders.

**Beck Youth Inventories of Emotional and Social Impairment (BYI):** A measure of psychological health in children from the ages of seven to fourteen that is based on the child's own perceptions, which reflects the child's overall social and emotional

functioning. This scale is composed of one-hundred items covering five subscales: Depression, anxiety, anger, disruptive behavior, and self-concept (Beck, Beck, & Jolly, 2001). The self-concept subscale was used for the current study.

**Psychological Disability:** An impairment or inability to function properly within the context of the general society.

**Psychological Disorder:** A psychological or behavioral pattern that occurs in an individual and is thought to cause distress or disability that is not expected as part of normal development or culture.

**Psychostimulant Medication:** A substance that enhances locomotor behavior, most commonly prescribed to treat the symptoms associated with ADHD.

**Self-Concept:** A global understanding that a person has of him or herself, more general than self-esteem.

**Self-Esteem:** Reflects a person's overall evaluation or appraisal of his or her own worth.

**Stigma:** A combination of stereotyped beliefs, prejudiced attitudes, and discriminatory behaviors toward certain groups of people (Hinshaw & Stier, 2008).

#### Assumptions

Several assumptions were made in regards to the children in this study. First, it was assumed that the children used in this study were classified correctly. Without the proper classification, a child would not be able to function to the best of their ability. Second, it was assumed that the children were receiving the correct accommodations according to their IEPs at the time of the assessment. It would affect the children's academic performance, and possibly their self-esteem, if they were not receiving the

correct accommodations in the classroom. Finally, it was assumed that the children answered all of the questions on the self-esteem assessment honestly.

### Limitations

There were several limitations present within this study. One limitation involved the school district where this study was conducted. The research for this study was conducted in a relatively large school district in southern New Jersey. This district contains children mostly from the upper, middle, upper middle, and lower middle class families. Therefore, a strong representation of children from the working and lower class was missing from this study, which could have a possible affect on the results. Moreover, the majority of children in this district represent an unvarying ethnic population. Another limitation included the fact that this study used previously administered self-esteem assessments with different students for each group. A more appropriate way to conduct this research would be to measure student's self-esteem and academic performance before and after a medication regimen was initiated.

The fact that academic performance was assessed through the examination of the student's grades, as reported by their teacher, was an additional limitation in this study. The grading system does not always accurately represent a child's true ability. However, since the child's achievement is represented with a letter grade in schools, it was deemed appropriate to determine academic ability based on grades for the purposes of this study, but may not truly represent the child's full academic potential.

## Summary

This research study examined the overall effects of medication on classified students' self-esteem and academic performance. The next chapter provides an analysis of the literature from previous research studies on this topic. Chapter 3 explores the study design itself, including the participants, measures, and procedures. Chapter 4 provides a detailed analysis of the results of the study. Finally, chapter 5 presents a summary of the study as well as the implications for classified students, medication, and future research in this area.

## CHAPTER II

### Review of the Literature

#### Introduction

The topics of medication use, self-esteem, and academic performance of children have become increasingly popular over the years. Researchers have sought to discover new techniques and explanations for various social and emotional problems that children are faced with everyday, including the use of medication. This chapter examines the literature that has been written about the self-esteem, academic performance, and medication use in children with disabilities, as well as society's perceptions of medication and their effects on children.

#### Self-Esteem of Children with Disabilities

Self-esteem is defined by the amount of value that people place on themselves (Baumeister, Campbell, Krueger, & Vohs, 2003). It refers to the beliefs people hold about themselves or the way they see themselves inside and out (Sze & Valentin, 2006). It has been argued that, "...by the age of six or seven years most children have definite ideas about their attributes in comparison with other children" (Sukumaran, Vickers, Yates, & Garralda, 2003, p. 190). An important factor in a child's developing self-esteem is the amount and quality of their parental interaction (Wagner & Phillips, 1992). Over the years, there have been many studies conducted to determine the self-esteem of children and adolescents with psychological and learning disabilities. These studies have

yielded discrepant results and have led researchers to continue their search for an answer (Miyahara & Piek, 2006).

It has been asserted that a decrease in the self-esteem of a child leads to more psychosomatic symptoms and further maladjustment. A lowered self-esteem in children causes increased anxiety and a sense of inferiority that becomes difficult to overcome (Hosogi, Okada, Yamanaka, Ootyou, Tsukamoto, & Morishima, 2007). This lowered self-esteem and maladjustment can lead to a variety of school related problems. One such problem is that of bullying behavior. Research has shown that bullying behavior is a result of lowered self-esteem; both the bully and the victim have been shown to suffer from a lowered self-esteem (O'Moore & Kirkham, 2001). Another school related problem associated with low self-esteem is that of self-blame and helplessness. Children who receive negative feedback on tasks may tend to blame themselves, which would inevitably lower their self-esteem. This self-blame would in turn lead to a helplessness outlook on life; these children would give up easily on tasks without even trying (Heyman, Dweck, & Cain, 1992). Children with disabilities often receive more negative feedback in the classroom than their non-disabled peers (Sze & Valentin, 2006). This negative feedback as well as other school related problems that can be associated with low self-esteem is often even more prominent in children who also suffer from a psychological disability.

In many studies, children with disabilities have been shown to have lower self-reported self-esteem scores than their non-disabled peers (Edbom, Lichtenstein, Granlund, & Larsson, 2006). Disabled children placed in the general education



classroom are at a greater risk for low self-esteem since people tend to compare themselves to their peers and people in their everyday situations. This however, does not mean that psychologically disabled children placed in special education have high self-esteem. As indicated by Battle and Blowers (1982), “special education programs tend to foster the development of more positive perceptions of self-worth in children experiencing learning problems” (p. 101). Since the children in special education classrooms share the same problem of experiencing some type of impairment, they may be more capable of recognizing their individual strengths. Plus, the stigma that children hold against disabilities may foster feelings of rejection toward the disabled child in the regular education classroom. This peer rejection has been documented to have a significant impact on the self-esteem and adjustment of children and may cause feelings of isolation, loneliness, and rejection, which will inevitably lower the child’s self-esteem and feelings of self-worth (Sandstrom & Zakriski, 2004). Bussing, Zima, and Perwien (2000), however, did not find any differences in the self-esteem of children placed in special education classes compared to children placed in the general education classroom. More studies need to be conducted in this area in order to better examine this discrepancy.

Some studies suggest that the level of severity of the child’s psychological disability plays a major role on the self-esteem of the child. It has been argued that children with minor disabilities are capable of understanding their shortcomings and therefore perceive themselves as performing more poorly (Miyahara & Piek, 2006). Also, these children have disabilities that are not always obvious, which may lead to

more social pressure and discrimination that will deteriorate the self-esteem of the child. Sukumaran et al. (2003) assert that "...psychopathology severe enough to lead to clinic contact is associated with children regarding themselves generally unfavorably" (p. 194). Children with major disabilities, on the other hand, receive more empathy and understanding because of their obvious impairment, which evokes a more positive self-concept (Miyahara & Piek, 2006). Also, these children may not be capable of understanding or recognizing their shortcomings. Specific disorders have also been associated with a lowered self-esteem in children.

Many researchers have noticed negative self-evaluations of patients with various psychological disabilities including bipolar disorders and attention deficit hyperactivity disorder. Emotional or psychosomatic disorders, such as depression and anxiety, have been shown to generate a remarkably low level of self-esteem (Sukumaran, Vickers, Yates, & Garralda, 2003). Wolf and Muller-Oerlinghausen (2002) came to this conclusion and provided strong evidence for the concept that people with bipolar disorders have a negative self-esteem. Children with speech and language problems have been shown to express low levels of self-esteem, as well as academic and behavioral difficulties. Speech and language problems can be related to many different psychological disabilities, such as ADHD, and can become detrimental to the child's feelings of self worth (Lindsay, Dockrell, Letchford, & Mackie, 2002). Attention deficit hyperactivity disorder (ADHD) has been well documented and studied in regards to its effect on children's self-esteem. The reason for the vast knowledge in this area could be due to the fact that ADHD is the most common behavioral disorder in children and, as of

the year 2006, is prevalent in 3-7 percent of school-aged children (Edbom, Lichtenstein, Granlund, & Larsson, 2006).

ADHD is a developmental disorder that affects the self-control, attention span, impulse control, and activity level of children and adults. Children with this disorder often have social problems, such as few friends, extreme peer rejection, and are constantly being reprimanded for their outbursts and lack of self-control in the classroom (Neophytou & Webber, 2005; Zettergren, 2003). Children with ADHD are usually perceived as “annoying” and “aversive” by their peers and even by surrounding adults (Henker & Whalen, 1989, p. 217). They tend to have difficult relationships with their parents since they are always in need of punishment, which will lead to a reduced level of self-esteem in the child (Wagner & Phillips, 1992). The problems that are faced by children with ADHD have been strongly associated with academic failure and an increased risk for low self-esteem (Edbom, Lichtenstein, Granlund, & Larsson, 2006). In their study, Bussing et al. (2000) found that the children who met the DSM-IV criteria for ADHD had a significantly lowered self-esteem score than those children who did not meet the DSM-IV criteria. Both behavioral and pharmaceutical techniques have been attempted to help children with ADHD and other psychological disabilities control their attention, impulses, and other symptoms related to their disorders.

#### Self-Esteem of Children with Disabilities on Medication

The use of medication in children with disabilities has been a debated issue for many years. Despite the vast area of research regarding self-esteem in children, most studies that exist do not explore the use and effects of medication on the child’s self-

esteem, or do not report the medication status of the children (Frankel, Cantwell, Myatt, & Feinberg, 1999). Of the studies that do report the medication status, some demonstrate that medication has no effect on the child's self-esteem; while others express that there is a strong link between a change in self-esteem and the use of medication. It has been argued that the treatment children receive for ADHD does improve the child's self-esteem by improving their functional abilities and social relations. Yet at the same time, if the actual act of receiving a treatment makes the child feel "defective" or "different," it can essentially lower their self-esteem (Bussing, Zima, & Perwien, 2000). These issues have been the main topic of discussion for many parents of psychologically disabled children.

In the study conducted by Bussing, Zima, and Perwien (2000), little evidence was found that the use of medication was related to a lower self-esteem; however, it was not found that medication by itself improved the child's self-esteem. This study asserts that the duration of the treatment and efficacy may play a larger role on the child's self-esteem than the actual medication itself (Bussing, Zima, & Perwien, 2000). In the study conducted by Frankel et al. (1999), it was found that children with ADHD reported higher self-esteem when they were medicated compared to the children who were not medicated. The statistical data found in this study showed that 83.3% of the subjects in the nonmedicated group fell in the average or low range of self-esteem and 65.8% of the medicated group fell into the high range of self-esteem (Frankel, Cantwell, Myatt, & Feinberg, 1999).

Medication has been shown to have many advantages for children with ADHD. Stimulant medication has been shown to immediately affect the child's everyday social climate in a noticeably positive way (Henker & Whalen, 1989). These children tend to become less negative, more responsive, less disruptive and impulsive, and have more appropriate behavior with their peers (Whalen, Henker, Buhrmester, Hinshaw, Huber, & Laski, 1989). Since they are behaving more appropriately with their peers, they experience less peer rejection and, in turn, undergo a rise in their self-esteem. In their study, Whalen et al. (1989) found that stimulant medication did improve the child's standing within his/her peer group and this result became more apparent with a higher dose of medication. Another study found that stimulant medication not only reduced problematic or aggressive social behavior, but also helped increase appropriate social behaviors at significant levels (Hinshaw, Henker, & Whalen, 1984).

Other psychological disorders have been shown to have positive outcomes with the use of medication. Neuroleptic or anti-psychotic drugs, for example, have been shown to reduce the social withdrawal of children with schizophrenia. Anti-depressants and Selective Serotonin Reuptake Inhibitors (SSRIs) have been demonstrated to help improve the mood and social acceptance of some children with depression and anxiety disorders (DuPaul & Carlson, 2005). Despite all of the positive support for medication, parents still have many concerns when deciding what treatment would be best for their child, such as a fear that the uncertainty of the long-term effects of medication use may outweigh the positive short-term effects.

Many studies report the short-term effects of medication use in childhood; however, few have reported the long-term effects. The studies that do include follow-up data tend to rely on one to two year periods, which may not accurately express the patterns or predictors of change that can occur after medication use (Ollendick & King, 1994). In a follow up study, Kelly et al. (1989) found that young adults with ADHD who did not receive long-term stimulant treatment displayed a lower self-esteem level than that of the control subjects. In their original study, 76% of the patients showed a clinical response to methylphenidate, a stimulant medication commonly used for ADHD (Kelly, Cohen, Walker, Caskey, & Atkinson, 1989). Another study found that older subjects in the medicated group had lower social self-esteem than the nonmedicated group and the younger subjects had higher academic self-esteem in the medicated group compared to the nonmedicated group (Alston & Romney, 1992). On average, Wolf et al. (2002) observed that with less than 47 months of successful medication treatment, patients with bipolar disorders reported more negative attributes regarding one-self compared to the control groups. These follow up studies give some insight into the long-term effects of childhood medication use, however more research in this area would be beneficial. Another area of concern for parents involving the use of medication is its' effect on the academic performance of their child.

#### Academic Performance of Children with Disabilities

Mullis et al. (2003) states, "Academic performance is the result of a complex mix of individual characteristics and nested social influences" (p. 546). It is the actual achievement of the child in the school setting. Children with disabilities often exhibit

behaviors that are disruptive, noncompliant, and inattentive; all of which can significantly impair the child's ability to succeed in school. Many studies have looked into the academic performance of children with disabilities, yet the characteristics of their academic performance remain uncertain (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). It has been documented in many studies that students with emotional/behavioral disturbances (EBD) perform at a level that is one to two years below their specified grade level (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). Other psychological disabilities have been shown to cause both major and minor academic problems for the child.

Working memory is an essential component of learning that enables the child to follow directions, understand stories, and essentially participate in school. It has even been suggested that working memory capacity is the one factor that brings about the individual differences in general intelligence (Conway, Kane, & Engle, 2003). Research suggests that an inability to retain information in memory and simultaneously process information is characteristic of learning-disabled children (Swanson, 1993). The results from a study conducted by Swanson (1993) suggested that students with learning disabilities share a common problem related to working memory and this problem leaves the child with a clear disadvantage when compared to their normal-achieving peers. For example, children with disruptive behaviors, such as ADHD, have also been shown to exhibit problems with verbal and spatial working memory, which can have many adverse effects on the child's ability to succeed in school (Semrud-Clikeman, Pliszka, & Liotti, 2008).

Another area of interest for research has been the academic performance of children with disruptive behavior. According to DSM-IV classification, disruptive behaviors consist of three areas including disruptive behavior and/or attention deficit in young children: attention deficit hyperactivity disorder, conduct disorder, and oppositional defiant disorder (ODD). These disorders may coexist in the child and are often associated with learning difficulties (Giannopulu, Escolano, Cusin, & Citeau, 2008). The association between inattention and learning problems has been well documented over the years, unlike the association between hyperactivity-impulsivity and learning problems which is still controversial (Giannopulu, Escolano, Cusin, & Citeau, 2008). This distinction is understandable considering the required attention involved in learning new information. A child with an attention problem would have great difficulty focusing on the task at hand, which can result in poorer performance as a whole. In Giannopulu et al. (2008), findings showed that preschool and school aged children who were reported as being inattentive by their teachers had significantly lower scores on cognitive performance tests and were more likely to show poorer performances on reading tasks the following year.

One of the most common characteristics of children with ADHD is a chronic underachievement when compared to their intellectual abilities. Studies have found that up to 80% of children with ADHD have specific academic problems and many of those children receive special education services or tutoring (Trout, Ortiz Lienemann, Reid, & Epstein, 2007). One study suggests that inattention in the classroom is the result of previous academic problems. This means that since the child did not perform well in



school one year they may have missed essential information and will become inattentive and perform poorly in following years (Herman, Lambert, Ialongo, & Ostrander, 2007). This hypothesis has not been well documented, but can be considered as further evidence that there is a link between attention and the ability to perform well in a school setting. This study also gives rise to the long-term effects of disabilities on academic performance.

Long-term effects of disabilities in childhood have been studied in regards to future academic performance. One study suggests that a child's peer relationships and networks in the fall semester can predict changes in their academic performance throughout the school year (Mullis, Rathge, & Mullis, 2003). According to Mullis et al. (2003), the strongest predictor of academic performance in their study was the students' behavior in the school setting. A child with ADHD, for example, exhibits impulsive, disruptive, and inattentive behaviors in the classroom that are thought to negatively impact their ability to learn information and problem solve (Semrud-Clikeman, Pliszka, & Liotti, 2008). Beneficial academic effects from medication use in children with psychological disorders have been demonstrated in numerous studies throughout the years.

#### Academic Performance of Disabled Children on Medication

Early studies suggested that medication use in some children was associated with detrimental effects on the child's learning. However, more recent studies have rejected this idea and have found similar dose-response effects and improvements in learning (Northup, Gulley, Edwards, & Fountain, 2001). Many studies have carefully looked into

the effects of medication in this population of children and have showed consistent results. Most studies find that between 60% and 90% of the children in the samples improve on methylphenidate (Whalen & Henker, 1976).

Recent studies show evidence that stimulant medication does facilitate academic functioning (Whalen & Henker, 1991). In their study, Whalen and Henker (1976) found that the Continuous Performance Test scores in children, on average, drastically improved with the use of psychostimulants. Improvements were also seen in paired-associate learning, short-term memory, and Porteus Maze Test performance with medication use. Stimulant medication has been described as a tool to help the child “plan and control his or her responding” (Whalen & Henker, 1976, p. 1117). In another study, an improvement of 40% in math accuracy and 35% improvement in efficiency were found for children with ADHD who received stimulant medication (Henker & Whalen, 1989).

The question of whether stimulant medication helps promote meaningful learning and achievement in the child or if the changes in attitude and motivation that the child experiences after receiving medication is the causal factor for academic success remains unanswered (Henker & Whalen, 1989). Northup et al. (2001) discovered that the largest increase in academic performance, according to the study, was due to an increase in compliance or performance, rather than an improvement in academic skills in children who were receiving medication. It must be taken into account, however, that this study contained a very small number of participant and the results cannot be generalized for the entire population of disabled children. However, it has been noted in numerous studies

that academic interventions alone are not as successful as those that are given along with a pharmaceutical treatment (Trout, Ortiz Lienemann, Reid, & Epstein, 2007). The beneficial effects that medication can produce in children have been highly documented and strongly supported.

According to the study conducted by Neophytou and Webber (2005), the use of medication in hyperactive boys created an immediate improvement in their behavior and academic performance. These boys became attentive and less prone to disrupt the class; they improved academically since they were able to sit, listen to the lessons, and actually understand what they were learning (Neophytou & Webber, 2005). This study claimed that, “After diagnosis...medication assisted the boys to concentrate in the classroom [and] stay focused on tasks at hand with the result that their academic performance improved” (Neophytou & Webber, 2005, p. 320). The treatment of psychological disorders with pharmaceutical therapies has had many positive effects on children’s capabilities in school and social environments.

#### Medication use in Children with Disabilities

The use of medication in children for various psychological and behavioral disabilities has been observed for over half a century and continues to grow rapidly (Hinshaw, 1996). It has been estimated that 60% to 90% of all children diagnosed with ADHD receive stimulant medication and a majority of them show improvements related to the medication (Whalen & Henker, 1991). Some studies suggest that children with ADHD who are receiving medication are “indistinguishable” from their nonhyperactive peers. These children are said to become more focused and compliant with parents and

teachers, as well as less controlling with their peers (Whalen & Henker, 1991). It has been estimated that approximately two million children, and rising, are prescribed methylphenidate to use during the school day (Northup, Gulley, Edwards, & Fountain, 2001). Medication has become a popular treatment method for many other psychological disabilities as well as ADHD, including autism, depression, anxiety, and bipolar disorders.

Approximately 45% of individuals with autism have been prescribed medications for associated behaviors. The treatment of autism with medication can often be dangerous since the core symptoms of autism cannot be treated and potential side effects may occur when treating associated behavioral disorders (Handen & Lubetsky, 2005). Some studies have shown a drop in the self-esteem of autistic children who receive medication, while others show improvement in social interactions and other aspects of life that would enhance self-esteem levels (Handen & Lubetsky, 2005). These reactions cannot be predicted in this population and therefore parents and doctors must carefully monitor any medication use. This is also true for younger populations, such as preschool-aged children.

There has been a recent trend in the use of stimulant medication in preschool-aged children. This trend has been seen in populations of children with an early diagnosis of ADHD (Guevara, Lozano, Wickizer, Mell, & Gephart, 2002). In one study, Guevara et al. (2002) found that 78% of the children diagnosed with ADHD received at least one prescription stimulant medication. Another study indicated that 57% of a population of

children with ADHD, aged younger than 4 years, received at least one psychotropic medication treatment for their condition (Connor, 2002).

Due to the advances in neuroimaging, it is now possible to study the brain during various tasks and examine the differences seen in children with psychological disabilities. It has been discovered that children with ADHD have many differences in their brain structures that may play a role in their behavior and emotional difficulties (Semrud-Clikeman & Pliszka, 2005). Children with ADHD who receive medication for their disorder have also been studied with this technology. It has been established that some children respond well to stimulant medication, while other children do not. Through the use of MRI techniques, doctors are now able to better examine the differences in these children's brains and attempt to understand the reasons behind this discrepancy. It has been hypothesized that the severity of the child's ADHD may play a role in their need for medication (Semrud-Clikeman & Pliszka, 2005). As Semrud-Clikeman and Pliszka (2005) state, "While many children with mild to moderate ADHD may be able to function without medication, those with severe symptoms are more likely to require medication in order to navigate the school system and peer relationships" (p. 182).

In 2003, a Centers for Disease Control study found that 8.6% of children ages 4 to 17, about 2.5 million children, were being treated with some type of oral medication for ADHD in the United States (Jehlen, 2008). The benefits of stimulant treatment for children with ADHD involving task performance and interpersonal relations have been documented thoroughly (Whalen, Henker, Hinshaw, Heller, & Huber-Dressler, 1991). Some studies have demonstrated that children and parents react as if the medication is the

cause of the child's successes and failures (Johnston, Fine, Weiss, Weiss, Weiss, & Freeman, 2000). Meaning that the child did not accomplish the task, the medication was the only reason the child was able to be successful. As Henker and Whalen (1989) assert, "The messages that attend stimulant therapy may be beneficial...or [negative], confirming preexisting assumptions that the child is and will remain unable to take control over his own behavior without external aids and constraints" (p. 221). This perspective on medication has been well documented, but not strongly supported. A balanced-placebo study conducted by Pelham et al. (2002) concluded that it was the medication that influenced the children's behavior, not the child's perceptions of the medication. Along these lines, the social stigma and negative perceptions related to disabilities and their treatments can play a role in the self-esteem and performance of the child receiving the medication.

#### Perceptions of Medication

Media portrayals of disabilities and medication can have drastic affects on the willingness or reluctance of children to receive medication. Children become accustomed to seeing disabilities and medication in a certain way; whether that is an accepting or rejecting way. In most children television shows, mentally ill people are portrayed as humorous or even scary and dangerous (Stuart, 2006). Children with psychological disabilities may see these stereotypical interpretations of the mentally ill and feel ashamed of themselves for being considered mentally ill. They may try to deny that they have a problem and feel reluctant to take the medication that will help them become successful. Children see numerous news broadcasts and shows that portray the criminal

as mentally ill or psychotic. They develop a clear understanding of how others would view them if they were to become mentally ill (Stuart, 2006). The media has contributed to this negative perception of mental illness and medications in television shows, movies, commercials, and other various forms of so called entertainment (Stuart, 2006).

Stigmatization of mental illness and medications in the United States over the past half-century has increased according to attitude surveys (Hinshaw & Stier, 2008). The culture plays a role in creating stigmas toward certain people and concepts. Once people start to degrade a certain person or group, trends start to form and those who are degrading others will feel a boost in their self-esteem. This creates a will to continue the inappropriate behavior (Hinshaw & Stier, 2008). Recently, a link between antidepressant medication and suicidality in depressed children has come to the media's attention (Licinio & Wong, 2005). This link has created some anxiety in regards to giving children any form of medication. The unwillingness of doctors and parents to prescribe a child antidepressant medication can be detrimental if the child is truly in need of the medication. There is much uncertainty in children about who receives medication and for what reasons, which makes them skeptical about accepting medication as an appropriate treatment.

Children need to be aware of the uses and purposes of medications if they are to accept them and be comfortable receiving them or knowing that a peer receives them. It has been argued that children's perceptions of medication are generally negative (Haämeen-Anttila, Juvonen, Ahonen, Bush, & Airaksinen, 2005). Other studies suggest that the child's perception of medication coincides with the parent's opinion; if the

mother disliked a medication, the child would also dislike the medication (DePaola, Roberts, Blaiss, Frick, & McNeal, 1997). Giving children knowledge about how to use certain medications and why medications are sometimes necessary would allow the children to accept the use of medication without rejection or social stigmas (Ha"meen-Anttila, Juvonen, Ahonen, Bush, & Airaksinen, 2005). They would gain an understanding of disabilities and learn to become comfortable with receiving or knowing a friend receives medication. Once children get past the harsh stigmatization of disabilities and medication they will be able to accept them without fear or apprehension.

#### Summary of Findings

This chapter examined the self-esteem, academic performance, and medication use in children with disabilities. Studies concerning these areas were explained and different results were compared. It was concluded that children with disabilities tend to have poorer academic performances and lower self-esteem. The use of medication in children with disabilities show mixed results, but a majority of the studies concluded that medication use resulted, on average, in an overall improvement in the child's academic performance, peer relations, and self-esteem.



## CHAPTER III

### Research Design

#### Introduction

This chapter consists of a summary and description of the study. The sample of participants is described, as well as the measure that was administered, the Beck Youth Inventories. A detailed description of the procedure is then given and a summary of the data analysis.

#### Sample

The participants for this research study were children in grades four through eight who were being evaluated for a psychological disability. A total of 50 students were used for this study; 25 students in the medicated group and 25 students in the nonmedicated group. This sample consisted of the most recent reevaluation assessments, which included a completed Beck Youth Inventories, conducted by the school psychologist in the district. The children were students at several different public schools in Southern New Jersey, specifically Burlington County. Burlington County has relatively diverse representations of socioeconomic statuses (SES), with families in the upper middle class to families in the lower middle class. Since public schools were used for this study, a mix of racial identities and SES were represented. The schools selected for this study gave their consent to participate.

Numerous classifications and disabilities were represented in the sample of students including ADHD (42%), emotionally disturbed (10%), multiply disabled (MD) (44%), multiple tic disorder (2%), communication impaired (CI) (12%), learning disorders (SLD, NVLD, or LD) (54%), oppositional defiant disorder (ODD) (8%), autism spectrum disorders (16%), bipolar (2%), and other health impaired (OHI) (20%). Fourteen females and 36 males were selected, all between the ages of 7 and 14; the average age of the participants was 10.78 years. Half (50%) of these students were currently taking a medication for their psychological disability and the other half (50%) of the students were only receiving behavioral accommodations at the time of the assessment. A variety of medications were being used by the participants in the medicated group including Concerta (12%), Strattera (20%), Risperdal (12%), Ritalin (8%), Meditate (8%), Paxil (8%), Adderall (12%), Prozac (8%), as well as others that were not mentioned by name (36%).

### Measures

The measure used for this study was a published, highly validated self-concept scale, the Beck Youth Inventories of Emotional and Social Impairment (BYI), developed by Judith S. Beck, Aaron T. Beck and John Jolly. The Beck Youth Inventories, a 100-item self report measure of “never,” “sometimes,” “often,” or “always” questions, evaluated the social and emotional functioning of children and adolescents ages seven through fourteen years. Five subscales compose the BYI that when combined give a general measure of the overall self-concept and social and emotional impairment of the child: depression, anxiety, anger, disruptive behavior, and self-concept (Beck, Beck, &

Jolly, 2001). These five self-report inventories can be used in combination or separately to discover symptoms in these areas. Each inventory consists of twenty statements of thoughts, feelings, and behaviors commonly found in children with social and emotional problems (Beck, Beck, & Jolly, 2001). The BYI has been demonstrated to be a valid and reliable instrument for measuring the self-concept of children. The purpose of this scale as a whole was to measure the overall and specific aspects of the social and emotional stability, including the self-concept, of children and adolescents for the use of research and/or eligibility for further testing. T-scores for the BYI self-concept subscale are as follows: above average is a t-score above 55, average is 45-55, lower than average is 40-44, and much lower than average is below 40. The independent variable in this study was the medication status of the student (i.e. whether or not the student was receiving medication for their psychological disability). The dependent variables were the students' self-esteem assessment scores and report card grade averages.

#### Procedure

Before data was collected, permission from the school district to conduct research was obtained. This involved numerous letters, emails, and interviews with the Child Study Team of the school district and other appropriate faculty members to discuss the proposal. Once consent was given to conduct research, the school psychologist gathered assessments that were previously administered from the districts records. The BYIs used for this study came from reevaluations of students who have been receiving special educational services for at least three years. This data was collected after the first half of the school year, since it was administered as a reevaluation; therefore students had an

ample amount of time to acclimate themselves to the environment and develop relationships with their peers and teachers. Before the scales were released, the student's names were removed in order to protect their confidentiality. The scales were separated into two groups; a group from children who were receiving medication at the time the assessment was given, and a group of children who were not receiving medication at the time. Also, attached to each scale were the average report card grades, as reported by teacher evaluations, for each child at the time of the assessment. Academic grades were divided into four groups: above average A-B (3), at grade level B-C (2), somewhat below grade level C--D (1), and far below grade level F (0). The scores from the BYI and the report card grades from the medicated group were compared to those scores and grades from the non-medicated group. These groups were then compared to the average BYI scoring norms and average academic grades for children in that age range.

#### Analysis of Data

Two independent samples t-tests, within subjects, were used to analyze the data. The first t-test was used to analyze the BYI scores and the second was a nonparametric Mann-Whitney test to analyze the report card grades. The results from the first t-test, with the BYI scores, determined the average self-esteem levels of each group of students. The results from the Mann-Whitney test determined the average academic performance level of each group of students. The group results were then compared in order to determine the differences between the medicated and non-medicated groups. They were also compared to the standard scores for the BYI and age appropriate academic grades in

order to demonstrate the difference in special education students' scores and regular education students.

### Hypothesis

It was hypothesized that the children who receive medication for their specific disorder would have higher self-esteem as well as superior academic performance compared to the children who receive behavioral accommodations alone. However, these children would have lower self-esteem than average levels from students who have no previous history of behavior problems or psychological disorders since there is a strong stigma related to medication and disabilities in general that would lower the self-esteem in the medicated and non-medicated groups. This study aimed to reject the null hypothesis and demonstrate that medication is a safe and effective treatment that is highly beneficial for children with various disabilities.

### Summary

The focus of this study was to determine the effect medication use had on the self-esteem and academic performance of children with psychological disabilities. This chapter explored the design of the research study including the sample of participants, measures used, and the procedures followed. In the following chapter, chapter 4, a detailed analysis of the results of the study including the statistical results yielded from the independent samples t-tests will be provided.

## CHAPTER IV

### Results

#### Introduction

The purpose of this study was to determine how self-esteem and academic performance is affected by the use of medication in children and adolescents. This study aimed to elaborate on the many studies that exist regarding the effects of medication in children with ADHD and create a general understanding of medication use in children. The academic performance and self-esteem of children receiving medication for a disorder and those receiving behavioral modifications alone were examined to determine the effects that medication had on these factors. Fifty students were used for this study, 25 who were receiving medication at the time of the assessment, and 25 who were receiving behavioral accommodations alone.

It was hypothesized that the children who receive medication for their specific disorder would have a higher self-esteem, as indicated by the score achieved on the Beck Youth Inventories. However, these children would have lower self-esteem than the average levels, since there is a strong stigma related to medication and disabilities in general that would lower the self-esteem in these groups. It was also hypothesized that the children who receive medication would have superior academic performance compared to the children who receive behavioral accommodations alone. Two separate tests were conducted to analyze the data: an independent samples t-test to analyze the

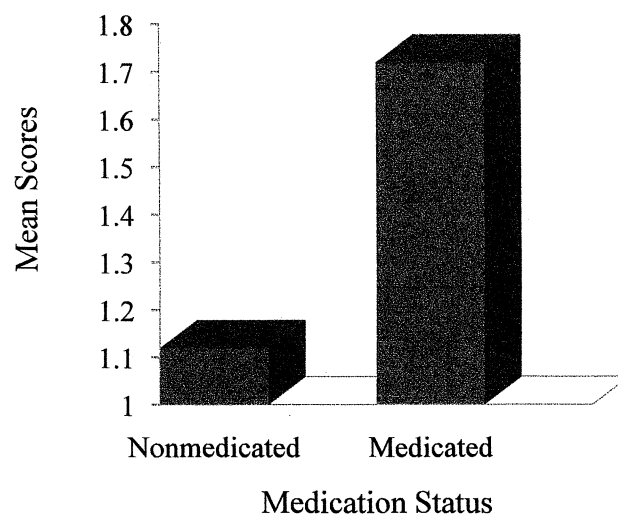
differences in self-esteem demonstrated between the groups, and a Mann-Whitney test to analyze the academic performance trends between these two groups.

## Results

The results for the academic performance aspect of the hypothesis yielded a z-score of -3.499,  $p < .01$ . No statistical significance was found for the self-concept BYI scores between the two groups, with a t-score of -.545,  $p > .05$ .

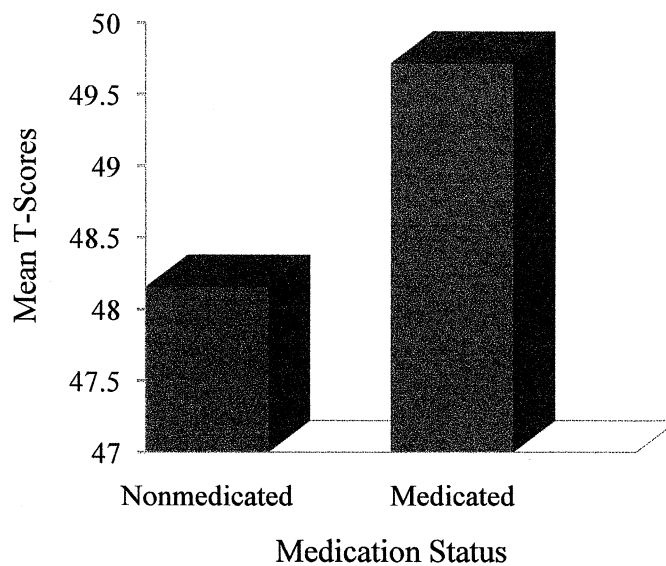
The highly significant statistical difference found for academic performance indicates that the medication group had superior academic performance compared to the non-medication group. The mean score for the medication group in this analysis was 1.7200, whereas the non-medication group was 1.1200 (see graph 4.1). A mean score of 3 would indicate an above average academic performance and a mean score of 0 would indicate far below grade level.

Graph 4.1 Academic Performance



Although a statistical significance was not found for the self-esteem portion of the hypothesis, a promising trend emerged. The scores from the medication group were slightly higher than the scores from the non-medication group on the BYI. The means for the self-esteem scores were as follows: 48.1600 for the non-medication group and 49.7200 for the medication group (see graph 4.2).

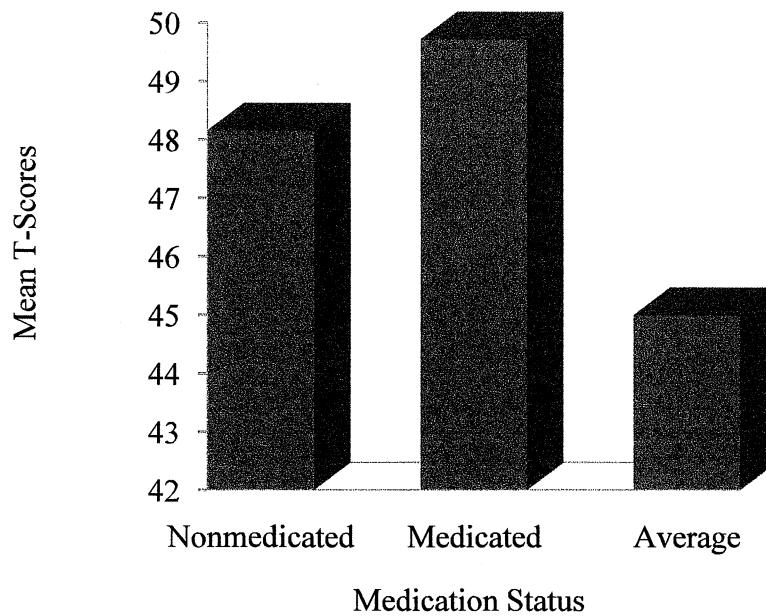
Graph 4.2 Self-Esteem



It should be noted that the self-esteem scores from both the medicated and nonmedicated groups were well within the average range. The t-score of 48.16 from the nonmedicated group and the t-score of 49.72 from the medicated group indicate scores that are on the slightly higher side of the average range (see graph 4.3).



Graph 4.3 Self-Esteem



#### Summary

This chapter examined the results that were found through the independent samples t-tests. The hypothesis that medication would be beneficial to the academic performance of children was proven with a highly significant rate. An interesting trend was discovered in the analysis of this data, despite the fact that the self-esteem aspect of the hypothesis was not entirely proven. The implications of these findings, limitations of the study, and need for future research will be discussed in the following chapter.

## CHAPTER V

### Discussion and Implications

#### Introduction

This study examined the relationship between medication, self-esteem and academic performance in classified students. It aimed at addressing the effect that medication had on classified students' self-esteem and academic performance compared to behavioral accommodations alone. It was found that medication played a highly positive role in the academic performance of students with various disabilities.

Medication did not, on the other hand, have a significant role in the self-esteem of those students.

#### Interpretation of Findings

This study found a significant statistical difference between the academic performance of students receiving medication and those students who did not receive medication. It was found that medication did improve the academic performance of the students receiving medication in this study. This finding is in complete agreement with Trout, Ortiz Lienemann, Reid, and Epstein (2007), who noted that numerous studies indicate that academic interventions alone are not as successful as those that are given along with a pharmaceutical treatment. Since the present study compared classified students in a public school district, both groups of children were receiving behavioral accommodations in the classroom; however, the group of students who achieved higher academic performance was the group that was also receiving a pharmaceutical treatment.

It has also been found that medication helps children concentrate and stay focused on the task at hand, especially in children with ADHD (Neophytou & Webber, 2005). Staying focused and paying attention in class is a huge contributor to success in the classroom; medication improves these skills in children with disabilities and therefore improves their academic performance as well (Neophytou & Webber, 2005).

While a statistical significance was not found in regards to the self-esteem of students, an interesting trend did emerge. The self-esteem scores of the students in the medication group were slightly higher than the self-esteem scores of the students in the non-medication group. This indicates that a significant statistical difference may be found for this group in larger samples of students over a longer period of time. It may have been the case that some of the students in the medication group had recently started to receive a medication treatment; meaning that the effects of their medication may not have been fully present at the time of the assessment. Therefore, a longer study would rule out this possibility since the amount of time that the medication was administered could be monitored. This study agrees with the study conducted by Bussing, Zima, and Perwien (2000) that asserted that the duration of the treatment and efficacy may play a larger role on the child's self-esteem than the actual medication itself. Little evidence was found that the use of medication was related to lower self-esteem; however, it was not found that medication by itself improved self-esteem levels in their study (Bussing, Zima, & Perwien, 2000).

Both groups, however, were on the higher end of the average range according to the BYI scoring curve. The average range on the BYI is 45 to 55; the t-scores of 49.72

from the medication group and 48.16 from the non-medication group indicate self-esteem scores that are well within the average range. This proves the hypothesis that children who receive medication for various disabilities would have lower self-esteem than average norms to be wrong. Therefore, the stigmatizations and misperceptions about medication and disabilities in general do not have a large effect on the self-esteem of children with disabilities. Despite the fact that children develop a clear understanding of how others view the mentally ill from media portrayals as indicated in the article by Stuart (2006), this understanding does not affect children's general self-esteem.

#### Limitations

This study contained numerous limitations that may have affected the results. One limitation involved the low number of participants used; only 50 students of an unvarying ethnicity were used in this study. A larger number of participants of various ethnicities could have created different results.

A second limitation in this study was the fact that different children were used for both groups. Due to time constraints and availability of participants, this study was forced to use previously administered self-esteem assessments from various classified students. These assessments were administered as a part of triennial reevaluations by the school psychologist. A more appropriate way to conduct this research would be to administer a self-esteem assessment to the student before and after a medical treatment is initiated. This would give the researcher a baseline self-esteem level to judge what effect the medication had on that specific student's self-esteem. It is not known what the original self-esteem levels were from the participants in this study.

A third limitation in this study was the inclusion of various disabilities and medications. While this was one of the purposes of the study, it also created several implications with regards to the results. First, different disabilities are associated with lower levels of self-esteem, such as anxiety disorders or depression. Also, the inclusion of learning disorders may have skewed the academic performance levels in the non-medication group since learning disorders are not commonly treated with medication and have a large impact on academic performance. Second, various medications included in this study could have had an effect on the self-esteem levels of the participants. Every medication has different perceptions associated with it; a student receiving Prozac may have had lower self-esteem than a student receiving a more socially accepted medication.

Finally, another limitation that existed in this study was the fact that academic performance was assessed through the examination of student's grades that were reported by their teacher as a part of the reevaluation process by the school psychologist. In order to assess the child's performance in the classroom, the school psychologist asked the teachers to report the students' average grades for each class; these reported grades were used for this study. The grading system does not always accurately represent a child's true ability. However, since the child's achievement is represented with a letter grade in schools, it was deemed appropriate to determine academic ability based on grades for the purposes of this study, but may not truly represent the child's full academic potential.

## Conclusions

This study aimed to determine the effect of medication on classified students' self-esteem and academic performance. Medical treatment has been shown to have many

beneficial effects on the child's social, emotional, and academic capabilities. However, many parents are skeptical about giving their child any form of oral medication. An unwillingness to accept the fact that their child may have a disability due to social stigmas or unconscious misconceptions makes parents less likely to seek out treatment options for their child and creates a difficult situation for the child (Hinshaw & Stier, 2008). Few studies exist that examine children's awareness and response to psychological disorders, treatments, and medications (McNeal, Roberts, & Barone, 2000). This study aimed to fill this gap in the literature by examining the self-esteem and academic performance of classified children both with and without a pharmaceutical treatment.

Although this study contained many weaknesses and limitations such as the use of different students for each group and a lack of ethnic variation in the participants, interesting and hopeful trends emerged that can help lead the way for new discoveries about medication use in children. While it was not completely proved significant, a trend toward higher self-esteem scores in children who receive medication was found. This indicates that medication has some positive effects on the self-esteem of children and may even raise self-esteem levels after a period of time. This finding helps to disprove those studies that indicate that medication may lower self-esteem levels, especially since the self-esteem scores found were well within the average BYI range.

Medication was found to have a highly significant statistical difference in the academic performance of children. Whether academic performance was improved by the medication alone or by the subtle effects the medication had in the child him or herself,

the child was better able to improve in the school setting while on medication. This indicates that medication is a more effective treatment for the academic performance of children with various disabilities than behavioral accommodations alone. The findings in this study lead the way for future researchers and provide useful information regarding the effects of medication in children.

#### Implications for Future Research

This study demonstrated that medication is a beneficial treatment for the academic performance in children and showed a hopeful trend regarding medications' effect on self-esteem levels. Further research is needed to help identify the implications of medication in children. Future studies should focus on one group of disabilities at a time, such as emotional disorders and behavioral disorders. They should also use the same population of children for each group; meaning a group of children should be assessed before a medication treatment begins and then again after the medication treatment has been in place for some time. This would allow for a better understanding of the actual effects of medication in children. The results from this study should not be neglected since they can be beneficial for future studies in this area.

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