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Beginning Teachers' Perception of the Importance of Barriers to Teaching Adolescents with Attention-Deficit/Hyperactivity Disorder

Sara Dekmar

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with Attention-Deficit/Hyperactivity Disorder

BY

Sara Dekmar

A Directed Research Project

Submitted to the Faculty of
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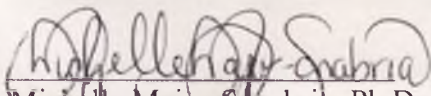
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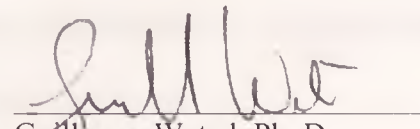
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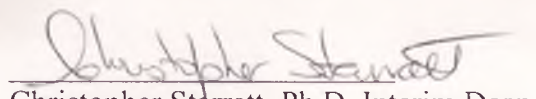
BY

Sara Dekmar

Approved By:


Michelle Major Sanabria, Ph.D.
Assistant Professor


Guillermo Wated, Ph. D.
Assistant Professor


Christopher Starratt, Ph.D. Interim Dean
School of Arts and Sciences

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Abstract

ADHD is one of the most commonly diagnosed disorders among school aged children and adolescents. Behaviors often observed among children with ADHD have been found to disrupt the teaching process. While research in the area of teacher's perceptions of ADHD is growing, there remains insufficient literature available concerning teachers' perception of specific barriers. As the satisfaction of beginning teachers is tenuous, particularly as it pertains to working with students with behavior problems, identification of the salient barriers to beginning teachers' success with such students is paramount. The current study examines teacher's perception of specific barriers to teaching high school/middle school grade students with ADHD. Participants completed a demographic questionnaire and a perceived barriers questionnaire on the internet. The results indicated that, while teachers perceive a need for increased ADHD training, no significant relationship between teaching experience and endorsement of training as a significant barrier was identified. Also, there was no significant relationship between level of experience and strategy implementation (containing positive reinforcement or not).

Beginning Teachers' Perception of the Importance of Barriers to Teaching Adolescents with Attention-Deficit/Hyperactivity Disorder

Researchers have identified numerous barriers often observed among children with Attention-deficit/Hyperactivity Disorder (ADHD) that can disrupt teachers' ability to effectively teach these students (Greene, et al., 2002; Reid, Vasa, Maag, & Wright, 1994). Research on teachers' perceptions of ADHD, while growing, remains inadequate. Furthermore, little research has addressed which barriers teachers perceive as most important. In addition, a dearth of information is available regarding teacher characteristics that make them more prone to identify particular barriers as important (Reid et al., 1994; Bussing et al., 2002; Rush, 2004). Literature in the field of education suggests that experience and training are two important variables that affect how teachers perceive all students. This is an area worthy of increased attention as teachers play a major role in implementing interventions and guiding academic development. The purpose of this study was to show that lack of training in ADHD is an important barrier for beginning teachers, who teach adolescent students with ADHD, particularly compared to teachers with more experience and compared to other barriers to teaching students with this disability. Additionally, this study will examine the relationship between teacher characteristics and positive versus negative intervention selection.

Attention-Deficit/Hyperactivity Disorder (ADHD)

Prevalence

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) children diagnosed with ADHD exhibit an abundance of problems associated with deficits in attention and behavior control.

Studies have further demonstrated a range of difficulties experienced by children with ADHD. These include poor peer relations (Barkley, Dupaul, & McMurray, 1990; Stormont, 2001; Landau, Milich, & Diener, 1998), lower academic achievement (Barkley et al.), increased aggressive behavior (Abikoff et al., 2002), and increased negative interactions with adults (Barkley, Anastopoulos, Guevremont, & Fletcher, 1992). Follow-up studies have made it evident that ADHD does not remit in adolescents (Hinshaw, Owens, Sami, & Fargean, 2006). Research indicates that while hyperactivity may decrease in adolescents many symptoms persist throughout adolescence and some may even become more salient (Hinshaw et al.).

ADHD is one of the most prevalent disorders of childhood and adolescence; approximately 3-7% of school-aged children are estimated to have the disorder (APA, 2000). Gender differences have consistently been identified in estimates of the prevalence of ADHD, with boys identified more frequently (2:1 to 9:1; APA, 2000). However, data indicates that the variance in ratios is accounted for by the difference between clinical and non-referred samples, as research indicates that girls are less likely than boys to receive a referral (Gershon, 2002). Subsequently, ADHD is one of the most frequent referrals to school psychologists and mental health clinics (DuPaul & Stoner, 1994, cited in Demaray, Schaefer, & DeLong, 2003; Demaray et al., 2003). A recent study (Demaray et al.) surveying over 407 school psychologists investigated data on school psychologists' caseloads and referral patterns for children with ADHD. School psychologists estimated receiving 17.19 (range = 1 to 100) referrals each year for ADHD assessments. Furthermore, they reported assessment of ADHD to be an essential part of their practice, and that a substantial amount of time is devoted to assessment and

treatment of ADHD. While the majority of referrals for ADHD come from teachers, limited research is available on teachers' perceptions of ADHD and teachers' perceptions of interactions with adolescents with ADHD.

Literature suggests that ADHD is one of the most prevalent disorders among school-aged children; however, ADHD was not included in a handicapping category under IDEA. Conversely, children with ADHD are recognized as handicapped under Section 504, and are thus eligible for additional services. As the law mandates the entitlement to a free and appropriate education for all children, the majority of children diagnosed with ADHD are placed in general-education classrooms (Reid, Maag, Vasa, & Wright, 1994). Subsequently, one might assume that teacher-training programs would include a component on preparing future general education teachers to work with students who have been identified as having ADHD. Yet researchers have identified that pre-service ADHD training for general education teachers is inadequate (Bussing, Gary, Leon, Garvan, & Reid, 2002). In a study of over 300 teachers, half of the participants had not received formal ADHD training in their teacher education program, while one third merely received brief training (Bussing et al., 2002). Furthermore, results of studies examining teachers' perceptions of student behavior and perceptions of teacher self-efficacy concerning teaching and implementing interventions for students with ADHD, indicate that the majority of teachers believe they would benefit from increased training for working with students identified as having ADHD. (Reid, Vases, et al., 1994; Bussing et al., 2002; Rheams & Bain, 2005).

ADHD Training

As research indicates that teachers are not receiving adequate training related to working with students with ADHD, it is permissible to infer that beginning teachers often do not have the strategies needed to help children with ADHD or similar behavior problems and thus may resort to using ineffective strategies. Sciutto, Terjesen, and Frank (2000) examined knowledge and misperceptions of ADHD among one hundred and forty nine elementary school teachers. Participants completed an instrument designed to measure specific areas of knowledge about ADHD. Results indicated that years of teaching experience, prior exposure to an ADHD child, and teacher self-efficacy were all positively related to ADHD knowledge. Overall, teachers were familiar with the “hallmark” symptoms of ADHD but they demonstrated less knowledge relating to treatment and general information about ADHD. Many teachers held misperceptions regarding the effects of sugar intake, which could be related to beliefs about interventions. Furthermore, lack of knowledge may have implications for selection of educational intervention, suggesting that years of teaching experience could be related to ineffective intervention selection.

Moreover, inadequate training in working with students with ADHD can be associated with ineffective management of ADHD behaviors. Teachers’ ability to effectively manage students with ADHD is important as the satisfaction of beginning teachers is tenuous and could impact the decision to stay in the field. Recently it was reported that teachers with insufficient information, and in need of additional support, were more likely to experience burnout (Talmor, Reiter, and Feigin, 2005). As beginning teachers have been identified as having less knowledge of ADHD, and in need of

additional support, it is expected that they may have negative teaching experiences when working with children with ADHD.

Disruptive Behavior

By definition children with ADHD experience an abundance of problems associated with behavior control. For many children with ADHD this problem is exaggerated, as a large percentage of children diagnosed as having ADHD also receive a second diagnosis. Approximately half of the children receive a diagnosis for Oppositional Defiant Disorder or Conduct Disorder (APA, 2000). Other common comorbid disorders include Mood disorders, Anxiety Disorders, Learning Disorders, and Communication Disorders (APA, 2000). The presence of a comorbid disruptive behavior disorder is associated with exacerbated rates of ADHD behaviors (Abikoff et al, 2002). Conversely, some researchers have demonstrated that children with anxiety and ADHD display fewer externalizing and aggressive symptoms than children with ADHD alone, while others did not find the presence of comorbid anxiety to be associated with suppressed behavioral symptoms (Abikoff et al.; Pliszka 1989 cited in Abikoff et al.). It is reasonable to assume that these behavioral symptoms can create a chaotic school environment, which is stressful for teacher and students.

Adolescence

While ADHD is one of the most highly researched topics concerning children, review of the current literature reveals a low number of studies on adolescents with ADHD. Dupaul and Eckert (1997) examined 63 studies in a meta-analysis of school-based interventions for children with ADHD. Analysis identified two studies that included children between the ages of 12 and 15 years, however none included children

in their latter teens. Thus, few studies have addressed teachers' perceptions of children with ADHD. Furthermore, studies addressing teachers' perceptions of adolescents with the disorder are greatly lacking.

Teachers' Perceptions of ADHD

Throughout the course of their development, a majority of adolescent's time is spent in the school environment interacting with various teachers (Rheams & Bain, 2005). Students with disabilities and special needs presumably spend a larger portion of the school day directly interacting with teachers as a result of an increased need for behavior management, interventions, and teacher support. Research indicates that teachers working with students with disabilities can have a great impact on the future outcome of that child (Rheams & Bain). For example, teachers theoretical orientation, attitude toward inclusion, experience working with children with disabilities, and teacher efficacy have been shown to interfere with perceived acceptability, feasibility, and current use of interventions (Rheams & Bain). This suggests that teachers can have more or less success with interventions based on the factors listed above.

Additionally, according to one study teachers indicate that being under pressure and overly busy can negatively impact student learning (Kataoko, Kraayenoord, & Elkins, 2004). This is a concern as studies indicate that teachers report increased levels of stress when working with students with ADHD (Greene, 1995). Greene and colleges (2002) examined stress among teachers (n=64) of general education elementary school classes. Results indicated that teachers perceive students with oppositional/aggressive behavior and severe social impairment as more stressful to teach than students with ADHD who did not evidence these associated difficulties. This is based on teacher

ratings of stress taking as two points during the school year, compared to baseline levels of stress.

As literature suggests that teachers' have an impact on students' academic development, it is conceivable that teacher characteristics would be studied primarily in order to better understand how they relate to student outcome. It has been suggested that school outcome for students with ADHD may be influenced by interactions with teachers or student-teacher compatibility (Whalen et al., 1919, cited in Greene, 1995). More recently, Greene (1995) has explored this phenomenon in terms of goodness-of-fit. Specifically, investigating the extent to which the style of behaving of the child with ADHD is compatible with the demands of the school environment. Greene saw a need for researchers to focus their attention on teachers' perceptions; he identified the striking omission of teacher factors that may have a significant bearing on outcome of school-based treatment for students with ADHD.

In a study examining teachers' perceptions of the extent to which various factors affect behavior; Cains (2000) collected data from 166 schools, with information provided on 239 children diagnosed with ADHD. Cases were grouped based on their current year in school (range of 1-11). Teaching Constraints (larger class size, inappropriate curriculum, and inadequate teaching/non teaching support) had a moderate bearing on behavior across all groups, but the greatest bearing for years 1-4. Furthermore, teachers working with adolescents (grades 7-11) identified several teacher skills (inconsistent teaching style, management poor in class, and unrealistic teacher expectations) that have a moderate impact on behavior. This suggests that teachers would be more capable of managing behavior given increased training.

Level of experience/training

Researchers have examined the impact of teachers' level of experience in relation to their interactions with and effectiveness in working with students with ADHD. In one study, Kokkinos, Panayiotou, and Davazoglou (2004), examined the effects of teaching experience and pupil and teacher gender on student teachers' perceptions of the seriousness of various forms of undesirable behavior. Results identified teaching experience and pupil gender as moderators of teacher perceptions. Internalizing behaviors were rated as more serious in boys and externalizing behaviors were rated as more serious in girls. Furthermore, results indicated that experience teaching affects which type of behaviors teachers perceive as more serious. Novice teachers perceived overtly bothersome behaviors as more serious. Conversely, more experienced teachers viewed signs of internalizing and inattention problems as the more serious undesirable behaviors. Overall, student teachers behavior ratings indicated antisocial behaviors (stealing, bullying, and destroying property) as more serious than internalizing behaviors and emotional behaviors. Based on these findings it is likely that beginning teachers will be more likely to focus interventions on externalizing behaviors.

Based on the salient behavioral symptoms of ADHD, it is permissible to infer that ADHD has a strong impact on the classroom environment. Reid, Vasa and colleagues (1994) conducted groundbreaking research in the area of teachers' perceptions of barriers to teaching students with ADHD. Two hundred and eighty elementary school teachers were surveyed to assess their perceptions of ADHD in terms of barriers to instruction. Barriers were investigated from two perspectives: previous experience with students with ADHD and previous training with ADHD. Time to administer specialized interventions,

lack of training, class size, and severity of problems received the highest ratings from all participants. These same factors were also rated as the most important barriers. Prior training in ADHD did not affect barrier ratings; however experience did impact barrier ratings.

In a study involving 365 kindergarten thru 5th grade teachers, researchers investigated sources of teachers ADHD information, teacher confidence in instructing children with ADHD, and perceived barriers to working with students with ADHD (Bussing, Gary, Leon, Wilson-Garvan, and Reid, 2002). The results indicated that undergraduate ADHD training varied with years of teaching experience, such that increased ADHD training was associated with fewer years of teaching experience. Conversely, postgraduate ADHD education varied with years of teaching experience in the opposite direction. Teachers without any postgraduate ADHD education had taught fewer years than teachers who reported brief or extensive training. The majority (94%) of teachers agreed that they would benefit from further ADHD training. This has strong implications considering most of the teachers taught at least one student diagnosed with ADHD in the last two years. Furthermore, teachers rated themselves as deficient in their ability to manage stress related to instructing students with ADHD. Overall, teachers reported low confidence in their ability to manage stress related to instructing students with ADHD. Lack of training along with large class size, time needed to administer specialized interventions, and severity of students' problems were all identified as serious barriers to effective programming for students with ADHD.

Teachers' perceptions of student's behaviors have also been utilized to study the effects of child gender and symptom type on referrals for ADHD. Sciutto, Nolfi, and

Bluhm (2004) indicated that, regardless of pupil gender, the inattentive ADHD profile was perceived by teachers as less disruptive than the hyperactive. Furthermore, the authors reported a gender bias in teachers' perceptions of children's behavior; boys were more likely to be referred for ADHD than girls, regardless of symptom type.

Teacher characteristics

Researchers have begun to identify the specific behaviors and situations that are identified by teachers as most disruptive. These factors have also been compared with various teacher characteristics. Recently researchers have begun to focus on the relationship between teacher characteristics (i.e. years of experience, ADHD knowledge, number of students taught with ADHD) and teachers' perceptions of specific barriers to working with students with ADHD. Of the recent studies reviewed, lack of training is consistently identified as a significant barrier to working with children with learning problems and disabilities, including ADHD (Rush, 2004).

In an immersion study of teachers' perceptions of barriers to teaching adolescents with ADHD Rush (2004) investigated themes related to teachers' perceptions of barriers to working with adolescents with ADHD. Results indicated that teachers' perceive expanding general knowledge about ADHD and increasing skills in using ADHD intervention strategies as important elements affecting their perceptions of adolescents with ADHD.

The majority of research on teacher perceptions of ADHD was conducted with elementary school teachers. It is likely that high school teachers will perceive several of the same barriers to teaching adolescents with ADHD as elementary teachers perceived to teaching children with ADHD. However, based on several environmental differences

between elementary and middle/high school, such as attending a single classroom in elementary school compared to changing classrooms in middle/high school, it is hypothesized that barrier ratings may vary slightly. Furthermore, based on the changes in behavior symptoms that can occur over this time span for individuals with ADHD, it is important to examine the barriers which teachers rate as most important barriers to teaching adolescents with ADHD.

Impact of Perceived Barriers on Student Outcome/Achievement

Research indicates that prior teaching experience with ADHD can lead to increased confidence in one's ability to teach in a way that students with ADHD can learn (Reid, Vasa, et al., 1994). Furthermore, teachers with more training indicate increased levels of positive beliefs about accommodating children with challenging behaviors in the classroom (Goetz, 2002).

An argument has been made that there is often little agreement among teachers' behavior rating of adolescents with ADHD (Molina, Pelham, Blumenthal, & Galiszewski, 1998). In addition, it may be that teacher characteristics (i.e., level of experience with ADHD, gender) can have an effect on teachers' effectiveness in working with children with ADHD. This would suggest that the relationship between teacher and students with ADHD is impacted by teacher perception of barriers to teaching students with ADHD.

While research in the area of teacher's perceptions of ADHD is growing, there is still insufficient literature available concerning teachers' perceptions of specific barriers to teaching students with ADHD, specifically adolescents. Furthermore, as the literature suggests that the satisfaction of beginning teachers is tenuous, particularly as it pertains to working with students with behavior problems, identification of the most important

barriers to beginning teachers' success with such students is paramount. Recent literature suggests that lack of training is an important barrier for all teachers who work with students with ADHD. The proposed study will attempt to examine the impact of training on beginning teachers who teach in grades 7-12.

The current study will examine beginning teachers' perceptions of the importance of barriers to teaching adolescents with Attention-Deficit/Hyperactivity Disorder.

Specific hypothesis were:

H₁: Increased teaching experience and endorsement of training will not be independent. That is, increased teaching experience will be associated with less endorsement of training as a most salient barrier to teaching adolescent students.

H₂: Level of experience and strategy implementation (containing positive reinforcement or not) will not be independent. That is, less experienced teachers will employ fewer strategies containing positive reinforcement than more experienced teachers.

Method

Participants

The study population consisted of middle school and high school teachers with access to the Internet. To be eligible for participation, teachers had to instruct grades 7 – 12 and have taught one or more students identified as having ADHD. This study utilized an online survey format. As teachers increasingly rely more heavily on the internet as a valuable resource for information and as a tool for education (Ravitz, Wong, & Becker, 1999), it was believed that an online survey would produce a large response rate. Use of online surveys has been found to produce a significantly higher response rate, while

producing results similar to a mail-based survey (McCabe, 2004). The website hosting the study (i.e., Survey Monkey) was open to receive participants for an 8 month period. Based on the ADHD literature (Barkley, DuPaul, & McMurray, 1990; Greene, Beszterczey, Katzenstein, Park, & Goring, 2002; Molina, Pelham, Blumenthal, & Galiszewski, 1998; Pisecco, Huzinec, & Curtis, 2001), research with 64 to 159 participants has been found to produce valid data. Additionally, according to Cohen (1992) to detect a medium degree of association in the population, based on a power of .80, approximately 133 participants are needed for a chi-square test for goodness of fit. As such, the study remained open until 186 surveys were completed.

Materials

Participants completed a 16-item survey in which they rated various behaviors in terms of how salient of a barrier they are to teaching adolescents with ADHD. Teachers were also asked to identify three items from the survey that they believed to be the top three barriers to teaching adolescents with ADHD. Additionally, participants were asked to list three strategies used to help students with ADHD in the classroom. Survey items were drawn from and adapted from a questionnaire (Rush, 2004) used in a previous study of teachers' perceptions of ADHD, which was reviewed by an expert panel.

A 12-item demographic questionnaire adapted from Rush (2004) was also utilized to obtain information about teacher characteristics. Teachers indicated their age, ethnicity, sex, highest degree earned, subject(s) taught, grade(s) taught, years of experience teaching, number of classes taught, number of children with ADHD in their classroom, number of students taught, and knowledge of medication use by students with ADHD. They also indicated whether they teach at a public or private school.

Procedure

Access to the study website was promoted through professional websites, email, and postings (e.g., discussion board on A to Z Teacher Stuff). Participants began by selecting the link to the study website. First, a cover letter was presented, providing a detailed description of the study. At the end of the cover letter participants were able to choose to end the study or continue. If they selected to end the study they were navigated to a thank you page. If the participant selected to continue they were navigated to the 12-item Demographic Data Questionnaire. Here participants were able to type their response next to each question or select answers from a list. The 16-item barriers questionnaire began directly after the demographic questionnaire. This questionnaire included 14 items rated with a 5-point Likert Scale and 2 questions each requiring three open responses. Participants indicated that they had completed the survey by clicking “next”; they were then linked to a final webpage. Here participants were thanked for their time. The principal investigator collected data throughout the duration of the study.

Results

Of the 186 responses collected, 46 teacher surveys met inclusion criteria and were analyzed. Responses were excluded if the barriers questionnaire was not completed and if the teacher did not teach grade levels 7-12. Details about their characteristics are given in Table 1. The majority of teachers were Caucasian ($N = 46$, 82.6%), female ($N = 46$, 78%) and taught at a public school ($N = 46$, 78.3%).

Table 1
Participating Teacher Characteristics

	N	%
Gender		
Female	36	78.3
Male	9	19.6
No Response	1	2.2
Age Range		
20-29	12	26.1
30-39	12	26.1
40-49	9	19.6
50-59	13	28.3
Ethnicity		
Caucasian	38	82.6
No response	3	6.5
Hispanic	2	4.3
Other	2	4.3
African American	1	2.2
Education		
Bachelor's degree	27	58.7
Master's degree	15	32.6
Advanced degree	4	8.8
Teaching experience (years)		
0.1-3	17	37
3.1-6	6	13
6.1-9	5	10.9
9.1-12	3	6.5
12+	13	28.3
No response	2	4.3
Grade taught		
Multiple (6-8)	13	28.3
Multiple (9-12)	19	41.3
Other	3	6.5
7	4	8.7
8	3	6.5
9	2	4.3
12	2	4.3
Subject taught		
Language arts	17	37
Math	5	10.9
Science	4	8.7
Other	18	39.1

No response	2	4.3
School		
Public	36	78.3
Private	9	19.6
No response	1	2.2
Female students with ADHD		
0	15	32.6
1-5	27	58.7
6-10	1	2.2
16-20	1	2.2
No response	2	4.3
Male students with ADHD		
0	3	6.5
1-5	20	43.5
6-10	13	28.3
11-15	5	10.9
16-20	2	4.3
21-25	1	2.2
No response	2	4.3

Two hypotheses were proposed, first, increased teaching experience and endorsement of training would not be independent. That is, increased teaching experience would be associated with less endorsement of training as a most salient barrier to teaching adolescent students. The second hypothesis stated that level of experience and strategy implementation (containing positive reinforcement or not) would not be independent. That is, less experienced teachers would employ fewer strategies that contain positive reinforcement than more experienced teachers.

A Chi-Square analysis was utilized to examine the relationship between years of teaching experience (0-3.0; 3.1-12; 12+) and the identification of training as a top 3, ranked barrier. Years of teaching experience were recoded into trichotomous groups, such that the following groups were collapsed into one group: 3.1-6 years, 6.1-9 years,

and 9.1-12 years. There was no significant relationship between teaching experience and endorsement of training, $X^2(2, n = 46) = .940, p = .625$.

A Chi-Square analysis was utilized to examine the relationship between the years of experience (ranges: 0-3.0; 3.1-12; 12+) and use of a strategy containing some form of positive reinforcement or not containing positive reinforcement. Years of teaching experience were again recoded into trichotomous groups, such that the following groups were collapsed into one group: 3.1-6 years, 6.1-9 years, and 9.1-12 years. Narratives produced by participants, indicating each participant's most frequently used strategy to help children with ADHD, were coded as either containing some form of positive reinforcement or not containing positive reinforcement. For an item to be considered as containing positive reinforcement there had to be 100% agreement between the principal investigator and an expert rater. Any narratives that were not agreed upon were resolved between the principal investigator and expert rater. There was no significant relationship between level of experience and strategy implementation (containing positive reinforcement or not), $X^2(4, n = 44) = 2.76, p = .596$.

Teachers were asked to identify three items from the survey that they believed to be the top three barriers to teaching adolescents with ADHD. Table 2 summarizes the most frequently identified barriers. Analysis of barriers identified by teachers as the three most significant barriers to teaching students with ADHD revealed several barriers were frequently included. The item most frequently identified as the top barrier ($N = 46, 28\%$) was, "Adolescents with ADHD require more attention than I am able to give. The item most frequently identified as the second most significant barrier to teaching adolescents with ADHD ($N = 46, 15.2\%$) was, "other services for adolescents with ADHD are needed

beyond what is currently being done in my classes". The item most frequently identified as the third most significant barrier (N = 46, 15.2%) was, "more communication with professionals (physicians, school psychologists...) would be useful in teaching adolescents with ADHD".

Table 2
Most Frequently Identified Top Three Barriers

	N	%
Barrier 1		
- Adolescents with ADHD require more attention than I am able to give	10	22
- Adolescent with ADHD do not take advantage of services offered to them.	7	15.2
- I feel I was inadequately trained in my undergraduate university program to work with adolescents with ADHD./ I need more training on ADHD.	5	10.7
Barrier 2		
- Other services for adolescents with ADHD are needed beyond what is currently being done in my classes.	7	15.2
- Adolescent with ADHD do not take advantage of services offered to them.	6	13
- I feel I was inadequately trained in my undergraduate university program to work with adolescents with ADHD	5	10.9
- I am frustrated with adolescent students with ADHD due to an overcrowded classroom.	5	10.9
- Interventions suggested in the IEPs of adolescents with ADHD are minimally effective.	5	10.9
- More communication with professionals (physicians, school psychologists, etc.) would be useful in teaching adolescents with ADHD.	5	10.9
Barrier 3		
- More communication with professionals (physicians, school psychologists, etc.) would be useful in teaching adolescents with ADHD.	7	15.2
- Other services for adolescents with ADHD are needed beyond what is currently being done in my classes.	6	13
- Interventions suggested in the IEPs of adolescents with ADHD are minimally effective.	6	13
- Adolescent with ADHD do not take advantage of services offered to them.	6	13
- I do not have enough materials to help adolescents with ADHD.	5	10.9

Further analysis of teacher's responses to the barriers rating scale indicated that two barriers were perceived by over 50% of participants as either "very important" or "extremely important". These barriers were "more communication with professionals (physicians, school psychologists, etc) would be useful in teaching adolescents with ADHD" and "interventions suggested in the IEPs of adolescents with ADHD are minimally effective". Refer to table 3 for further information concerning teacher ratings of the barriers.

Table 3
Barriers to Teaching Adolescents with ADHD

	Rated "Very Important " or "Extremely Important"	
	N	%
1. More communication with professionals (physicians, school psychologists, etc.) would be useful in teaching adolescents with ADHD.	27	58.7
2. Interventions suggested in the IEPs of adolescents with ADHD are minimally effective.	25	54.4
3. Adolescent with ADHD do not take advantage of services offered to them.	22	47.8
4. Other services for adolescents with ADHD are needed beyond what is currently being done in my classes.	21	45.6
5. I feel I was inadequately trained in my undergraduate university program to work with adolescents with ADHD.	20	43.5
6. Adolescents with ADHD require more attention than I am able to give.	19	41.3
7. It is hard for me to manage the behavior problems of adolescents with ADHD.	17	37
8. I need more training on ADHD.	15	32.6
9. I do not have enough materials to help adolescents with ADHD.	15	32.6
10. Adjusting the curriculum/assignments for adolescents with ADHD requires too much time.	14	30.7
11. I need more classroom assistance than I am getting with regard to adolescents with ADHD.	14	30.7
12. I do not know enough about the background of children with ADHD to effectively teach them.	12	26.1
13. I am frustrated with adolescent students with ADHD due to an overcrowded classroom.	11	23.9
14. Most of my effort involves disciplining adolescents with ADHD.	9	19.6

The barrier questionnaire also included two open-ended questions. First, participants listed, in order of importance, their top three barriers (from those listed in the questionnaire) to teaching adolescents with ADHD. Analysis of these items revealed that

21.7% of participants rated the item “adolescents with ADHD require more attention than I am able to give” as a top 3 barrier. Refer to table 4 for an overview of the items identified as a top barrier to teaching adolescents with ADHD. Second, participants listed three strategies used to help students with ADHD in the classroom, with the most frequently used strategy listed first. Analysis of these item indicated that 34.8% of the participants reported using, as a method to help students with ADHD in the classroom, a strategy that contains some form of positive reinforcement. Concerning primary strategy used to help students with ADHD in the classroom, the majority of teachers reported using a strategy that was classified as modification/accommodation (N = 46, 52.2%). Table 5 provides a summary of teacher reports of the primary strategy used to help students with ADHD in the classroom. The categories listed here were identified in the literature as most frequently used and/or most effective, participant’s responses were coded to fit into these categories (Dielmann, 2006; Rush, 2004).

Table 4
Top Barrier to Teaching Adolescents with ADHD

	N	%
1. Adolescents with ADHD require more attention than I am able to give	10	21.7
2. Adolescent with ADHD do not take advantage of services offered to them.	7	15.2
3. Interventions suggested in the IEPs of adolescents with ADHD are minimally effective.	4	8.7
4. It is hard for me to manage the behavior problems of adolescents with ADHD.	3	6.5
5. I feel I was inadequately trained in my undergraduate university program to work with adolescents with ADHD.	3	6.5
6. Adjusting the curriculum/assignments for adolescents with ADHD requires too much time.	3	6.5
7. Other services for adolescents with ADHD are needed beyond what is currently being done in my classes.	2	4.3
8. I need more training on ADHD.	2	4.3
9. I am frustrated with adolescent students with ADHD due to an overcrowded classroom.	2	4.3
10. More communication with professionals (physicians, school psychologists, etc.) would be useful in teaching adolescents with ADHD.	2	4.3
11. I need more classroom assistance than I am getting with regard to adolescents with ADHD.	2	4.3
12. I do not have enough materials to help adolescents with ADHD.	1	2.2

13. Most of my effort involves disciplining adolescents with ADHD.	1	2.2
No Response	4	8.7

Table 5
Primary Strategy Used to Help Students with ADHD

	N	%
1. Modification/Accommodation	24	52.2
2. Other behavior modification strategies	9	19.6
3. Strategy with no underlying behavior modification foundation	4	8.7
4. Monitoring the time requirements for tasks	3	6.5
5. Increased time working with students with ADHD	2	4.3
6. No Response	2	4.3
7. Other forms of punishment	1	2.2
8. Positive reinforcement	1	2.2

Discussion

This study was conducted in order to identify teachers' perception of specific barriers to teaching students with ADHD. Research suggests that formal ADHD training is lacking in many teacher education program (Bussing et al., 2002). Additionally, in previous studies teachers reported that they would benefit from increased training for working with students identified as having ADHD (Reid, Vases, et al., 1994; Bussing, et al., 2002; Rheams & Bain, 2005). Beginning teachers were identified as a group in need of additional support, as they are more likely to leave the field than experienced teachers.

This study aimed to provide insight into beginning teachers' perception of the most important barriers to beginning teachers' success in terms of their work with students with ADHD. According to hypothesis one, less experienced teachers were expected to identify lack of training as a key barrier to working with students with ADHD, more so than more experienced teachers. However, this was not found, as there was no significant relationship between teaching experience and endorsement of training.

This suggests that, the number of years that one has been teaching does not impact ones perception of the importance of lack of training as a barrier to teaching students with ADHD. Beginning teachers did not perceive training to be a more important barrier to teaching student with ADHD than other barriers identified in the literature. However, inline with previous studies (Bussing, et al., 2002; Reid, Vasa, et al., 1994; Rush, 2004), many teachers surveyed endorsed lack of training as at least “somewhat important”. Specifically, the item “I feel I was inadequately trained in my undergraduate university program to work with adolescents with ADHD” was endorsed by 82% of participants as “somewhat important” to “extremely important”. Additionally, 72% of participants endorsed “I need more training on ADHD” as at least “somewhat important”. This suggests that lack of training was perceived as an important barrier for all teachers (not just beginning) who work with students with ADHD. Moreover, this agrees with previous studies, which indicated that the majority of teachers believed they would benefit from increased training for working with students identified as having ADHD (Reid, Vasa, et al., 1994; Bussing et al., 2002; Rheams & Bain, 2005).

According to hypothesis two, it was expected that there would be fewer reports of the use of interventions containing positive reinforcement by less experienced teachers because they do not have the same background with ADHD (e.g., training and experience) as more experienced teachers. However, there was no significant relationship between level of experience and strategy implementation (containing positive reinforcement or not). This suggests that more experienced teachers have no more effective strategies to use in working with adolescents with ADHD than beginning teachers. Very few teachers reported using strategies containing positive reinforcement.

As such, it is possible to infer that all teachers are in need of training in the area of effective strategies for use with students with ADHD. This is reasonable, as research indicates that training has been rated among the top three barriers to successful teaching of students with ADHD (Bussing, et al., 2002; Reid, Vasa et al., 1994; Rush, 2004).

Analysis of barriers identified by teachers as the three most significant barriers to teaching students with ADHD revealed several barriers were frequently included. While it was expected that lack of training in ADHD would be among the top three this was not found. It is notable that the item most frequently identified as the top barrier was, "Adolescents with ADHD require more attention than I am able to give". This is significant as time to administer specialized interventions had been rated among the top barriers to effective programming for students with ADHD (Bussing, et al., 2002; Reid, Vasa, et al., 1994).

Limitations and Suggestions for Future Research

A limitation to this study is the number of participants included in analysis. While 184 individuals participated in the study, only 49 met inclusion criteria. Approximately 133 participants were needed for a power of 80% and medium effect size (Cohen, 1992). Therefore, the recommended number of participants for producing valid research was not met. Another limitation was the lack of diversity in the sample. In the future, when conducting Internet research it is recommended that different methods be used to promote research participation. In this study the primary source of promotion was teacher discussion boards, which resulted in a large number of participants who had master's level degrees (41%) and who taught the primary grades. A method that may result in a more diverse sample would be utilizing a school-based study with the

researcher present. If a paper study (rather than internet) had been used, it would have been possible to follow-up with participants to get them to complete missing items on the surveys. An additional limitation to Internet research is that it is not possible to clearly validate that it was actually teachers who completed the surveys.

In conclusion, further research in the area of teachers' perceptions of barriers to teaching students with ADHD is needed. Although training was not identified as a most salient barrier, a need for increased ADHD training was identified, as 82% of teacher indicated that they were inadequately trained in their university program to work with students with ADHD. Based on these findings it is recommend that school practitioners, such as school psychologists, offer workshops on ADHD. In particular, workshops focusing on effective teaching strategies for students with ADHD, research based interventions for students with ADHD, and characteristics of ADHD would be beneficial.

References

- Abikoff, H. B., Jensen, P. S., Arnold, L. L. E., Hoza, B., Hechtman, L., Pollack, S., et al. (2002). Observed classroom behavior of children with ADHD: relationship to gender and comorbidity. *Journal of Abnormal Psychology, 30*(4), 349-359.
- American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision. Washington, DC, American Psychiatric Association, 2000.
- Borderns, K. S. & Abbott, B. B. (1999). *Research Design and Methods: A Process Approach*. Mountain View, CA: Mayfield Publishing Company.
- Barkley, R.A., Anastopoulos, A.D., Guevremont, D.C., & Fletcher, K.E. (1992). Adolescents with attention deficit hyperactivity disorder: Mother adolescent interactions, family beliefs and conflicts, and maternal psychopathology. *Journal of Abnormal Child Psychology, 20*(3), 263-288.
- Barkley, R., DuPaul, G., & McMurray, M. (1990). Comprehensive evaluation of attention deficit disorder with and without hyperactivity as defined by research criteria. *Journal of Consulting & Clinical Psychology, 58*(6), 775-789. (copy)
- Bussing, R., Gary, F., Leon, C., Wilson-Garvan, C., & Reid, R. (2002). General classroom teachers' information and perceptions of attention deficit hyperactivity disorder. *Behavioral Disorders, 27*(4), 327-339.
- Cains, R. (2000). Children diagnosed ADHD: factors to guide intervention. *Educational Psychology in Practice, 16*(2), 159-176.
- Cohen, J. (1992). A Power Primer. *Psychological Bulletin, 112*(1), 155-159.

- Demaray, M., Schaefer, K., & Delong, L. (2003). Attention-deficit/hyperactivity disorder (ADHD): a national survey of training and current assessment of practices in the schools. *Psychology in the Schools, 40*(6), 583-597.
- Dielmann, K. (2006, March). *Identifying and Overcoming General Education Teachers' Barriers to Intervening with ADHD student*. Paper presented at the meeting of the National Association of School Psychologists, Anaheim CA.
- DuPaul, G. J. & Eckert, T. L. (1997). The effects of school-based interventions for attention deficit hyperactivity disorder: A meta-analysis. *School Psychology Review, 26*, (1), 5-23.
- Gershon, J. (2002). A meta-analytic review of gender differences in ADHD. *Journal of Attention Disorders, 5*(3), 143-154.
- Goetz, D.M. (2002). An evaluation of the effect of inservice training and collaborative consultation on classroom teachers' ability to accommodate children with behavioral challenges in the regular education classroom. *Dissertation Abstracts International Section A: Humanities & Social Sciences, 62*(11-A), 3683.
- Greene, R.W. (1995). Students with ADHD in school classrooms: teacher factors related to compatibility, assessment, and intervention. *School Psychology Review, 24* (1), 81-93
- Greene, R. W., Beszterczey, S. K., Katzenstein, T., Park, K., & Goring, J. (2002). Are students with ADHD more stressful to teach? Patterns of teacher stress in an elementary school sample. *Journal of Emotional & Behavioral Disorders, 10*(2), 79-89.

- Hinshaw, S.P., Owens, E.B., Sami, N., Fargeon, S. (2006). Prospective follow-up of girls with attention-deficit/hyperactivity disorder into adolescence: evidence for continuing cross-domain impairment. *Journal of Consulting and Clinical Psychology, 74* (3), 489-499.
- Kataoka, M., van Kraayenoord, C. E., & Elkins, J. (2004). Principals' and teachers' perceptions of learning disabilities: a study from Nara Prefecture, Japan. *Learning Disability Quarterly, 27*, 161-175.
- Kokkinos, C. M., Panayiotou, G., & Davazoglou, A. M. (2004). Perceived seriousness of pupils' undesirable behaviors: the student teachers' perspective. *Educational Psychology, 24*(1), 109-120.
- Landau, S., Milich, R., & Diener, M. (1998). Peer relations of children with attention-deficit hyperactivity disorder. *Reading & Writing Quarterly: Overcoming Learning Difficulties, 14*(1), 83-105.
- McCabe, S.B. (2004). Comparison of web and mail surveys in collecting illicit drug use data: a randomized experiment. *Journal of Drug Education, 34*(1), 61-72.
- Molina, B., Pelham, W., Blumenthal, J., & Galiszewski, E. (1998). Agreement among teachers' ratings of adolescents with a childhood history of attention deficit hyperactivity disorder. *Journal of Clinical Child Psychology, 27*(3), 330-339.
- Ravitz, J.L., Wong, Y.T., & Becker, H.J. (1999). Report to Participants. Irvine, CA: Center for Research on Information Technology and Organization. Retrieved, April 21, 2005, http://www.crito.uci.edu/tlc/findings/special_report/report_to_participants_rev2.pdf.

- Reid, R., Maag, J.W., Vasa, S. F., & Wright, G. (1994). Who are the children with attention deficit-hyperactivity disorder? *A school-based survey. The Journal of Special Education, 28*(2), 117-137.
- Reid, R., Vasa, S.F., Maag, J. W., & Wright, G. (1994). An analysis of teachers' perceptions of attention deficit-hyperactivity disorder. *Journal of Research & Development in Education, 27*(3), 195-202.
- Rheams, T.A. & Bain, S.K. (2005). Social interaction interventions in an inclusive era: attitudes of teachers in early childhood self-contained and inclusive settings. *Psychology in the Schools, 42*(1), 53-62.
- Rush, C.S. (2004). Teachers; perceptions of working with adolescents with Attention Deficit/Hyperactivity Disorder: A concept-mapping approach. Unpublished doctoral dissertation, University of Alabama, Tuscaloosa.
- Sciutto, M. J., Nolfi, C. J., & Bluhm, C. (2004). Effects of child gender and symptom type on referrals for ADHD by elementary school teachers. *Journal of Emotional and Behavioral Disorders, 12*(4), 247-253.
- Sciutto, M.J., Terjesen, M.D., & Frank, A.S.B. (2000). Teachers' knowledge and misperceptions of attention-deficit/hyperactivity disorder. *Psychology in the Schools, 37*(2), 115-123.
- Stormont, M. (2001). Social outcomes of children with AD/HD: contributing factors and implications for practice. *Psychology in the Schools, 38*(6), 521-531.
- Talmor, R., Reiter, S., & Feigin, N. (2005). Factors relating to regular education teacher burnout in inclusive education. *European Journal of Special Needs Education, 20*(2), 215—229.