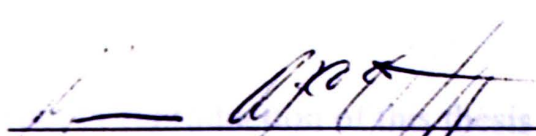


THE IMPACT OF OBSERVER BIAS ON PROSPECTIVE TEACHERS'
PERCEPTIONS OF THE EFFECTIVENESS OF METHYLPHENIDATE ON
THE BEHAVIOR OF STUDENTS WITH ATTENTION DEFICIT
HYPERACTIVITY DISORDER (ADHD)

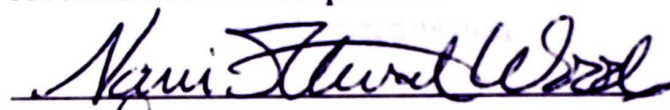
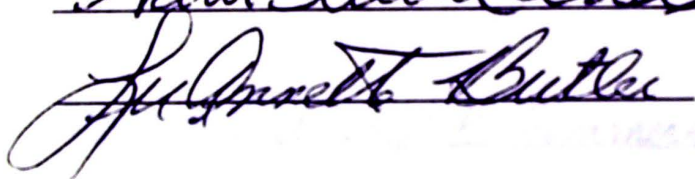
BETHANY B. TIMMERMAN

To the Graduate Council:

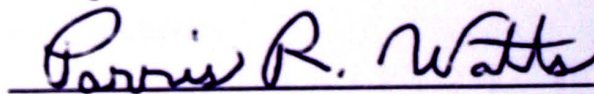
I am submitting herewith a thesis written by Bethany B. Timmerman entitled "The Impact of Observer Bias on Prospective Teachers' Perceptions of the Effectiveness of Methylphenidate on the Behavior of Students with Attention Deficit Hyperactivity Disorder". I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.


Dr. Maureen McCarthy, Major Professor

We have read this thesis and
recommend its acceptance:

Accepted for the Council:


Dr. Paris Watts,
Dean of the Graduate School

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December, 2000

THE IMPACT OF OBSERVER BIAS ON PROSPECTIVE TEACHERS'
PERCEPTIONS OF THE EFFECTIVENESS OF METHYLPHENIDATE ON THE
BEHAVIOR OF STUDENTS WITH ATTENTION DEFICIT HYPERACTIVITY
DISORDER (ADHD)

A Thesis

Presented for the

Master of Arts

Degree

Austin Peay State University

Bethany B. Timmerman

December, 2000

DEDICATION

This thesis is dedicated to my husband

Thomas Alan Timmerman, Sr.

and

my son

Thomas Alan Timmerman, Jr.

First, I am grateful for his clear guidance. I have made during these three years. Second, I am thankful for my husband, Tom, who balanced his responsibilities at work and home so that he could watch our son while I attended class. I am thankful for my son, T. J., who will continue to give me ample opportunities to practice all the principles that I have learned in my study of psychology.

ACKNOWLEDGMENTS

I would like to express appreciation to my major professor, Dr. Maureen McCarthy, for her guidance, time, and patience during this entire study and for the inspiration to continue my education in the future. I would also like to thank Dr. Nanci Woods and Dr. Luannette Butler for their valuable input into the details of this study. A special thank you is extended to Dr. Patti Wilson and Dr. Dawn Kutza, who allowed me to collect data in their classes, and to the students in their classes who willingly participated in the study. I also want to thank Alex, Bruce, Evan, Hunter, Justin, and Lee for acting in the video used in this study, Richard Borry for filming the video, and Maria Timmerman for allowing us to use her classroom. I would not have been able to complete this project without the help of all of these individuals.

I also wish to acknowledge those who have supported me throughout my graduate studies and who will always be the most important people in my life. First, I am grateful to God for His clear guidance and peace in every decision I have made during these three years of study. Second, I am thankful for my husband, Tom, who balanced his commitments at work and home so that he could watch our son while I attended class. Finally, I am thankful for my son, T. J., who will continue to give me ample opportunities to practice all the principles that I have learned in my study of psychology.

ABSTRACT

This study looked for the presence of observer bias in prospective teachers and examined its effect on their perceptions of the effectiveness of different types of treatment on the behavior of students with attention deficit hyperactivity disorder (ADHD). The study proposed that prospective teachers who believed that a student had taken methylphenidate (i.e., Ritalin) would rate the student's behavior more positively than would those who believed that the student had not taken the prescribed medication or those who believed that the student was on a behavior plan. Participants were 88 education majors who watched a video of a student in one of four randomly-assigned labeled conditions: ADHD with medication, ADHD without medication, ADHD with behavioral intervention, and normal, and rated the behaviors they observed on a semantic differential scale of bipolar items. The mean total score for each group was analyzed using a one-way analysis of variance (ANOVA). Results indicated that there was no significant difference in the ratings of the four groups. Possible reasons for the non-significant finding and implications for future research are discussed.

Appendix A: Informed Consent Form	38
Appendix B: Personal Information Sheet	40
Appendix C: Instruction Sheet	41
Appendix D: Rating Scale	42
Appendix E: Label Conditions	43
Appendix F: Debriefing Form	44

Appendix G: Summary of Results	45
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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
II. REVIEW OF THE LITERATURE	4
Observer Bias	4
ADHD and Treatment Approaches	7
Methylphenidate Effectiveness	11
Limitations of Previous Research	12
The Current Study	13
III. METHOD	14
Participants	14
Design	15
Materials	15
Procedure	18
IV. RESULTS	21
V. DISCUSSION	24
LIST OF REFERENCES	31
APPENDICES	37
A. Informed Consent Form	38
B. Personal Information Sheet	40
C. Instruction Sheet	41
D. Rating Scale	42
E. Label Conditions	43
F. Debriefing Form	44
VITA	45

LIST OF TABLES

TABLE

PAGE

CHAPTER IV: RESULTS

4-1	Demographic information	22
4-2	Mean rating by group	23

CHAPTER I

INTRODUCTION

Ever since Merton described the self-fulfilling prophecy in 1948, social scientists have been interested in its far-reaching implications. When the self-fulfilling prophecy occurs in interpersonal relationships, it is referred to as the Pygmalion effect (Sutton & Woodman, 1989), a term taken from George Bernard Shaw's (1916) play Pygmalion, which explores the dynamics of human interaction. The Pygmalion effect occurs when an observer's expectation of behavior for an individual leads the observer to treat that individual in a way that affects the individual's self-expectation and behavior (Sutton & Woodman). Rosenthal and Jacobson (1968) initiated interest in this effect with their controversial study of the impact of teacher expectations on student performance. Since then, research has consistently shown that observers' expectations can influence their perception of observed behaviors and their interaction with individuals (Brophy, 1983; Condry & Condry, 1976; Condry & Ross, 1985; Cornett-Ruiz & Hendricks, 1993; DiBattista & Shepherd, 1993; Foster, Ysseldyke, & Reese, 1975; Goldstein, Hopkins, & Strube, 1994; McCallister, Nash, & Meckstroth, 1996; Stern & Hildebrandt, 1984; Woods, Eyler, Conlon, Behnke, & Wobie, 1998; Ysseldyke & Foster, 1978). Data for this type of research are usually collected by labeling the same individual differently and then looking for differences in observers' responses to the individual (Stern & Hildebrandt, 1984).

A recent phenomenon in education is the increasing percentage of school-age children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) who are taking prescribed medication (Bramlett, Nelson, & Reeves, 1997). Attention Deficit

Hyperactivity Disorder is characterized by severe problems in attention, impulsiveness, and excessive activity (American Psychiatric Association [APA], 1994). Medication and behavior therapy are the most common approaches to treatment (Carlson, Pelham, Millich, & Dixon, 1992; DuPaul & Barkley, 1993; Klein & Abikoff, 1997; Pelham et al., 1993).

Methylphenidate (i.e., Ritalin) is the most frequently prescribed stimulant medication for ADHD (Bramlett et al., 1997; Gadow & Nolan, 1993). Studies have found that teachers believe that medication improves the performance of their students with ADHD (Davino, Lehr, Leighton, Miskar, & Chambliss, 1995) and that positive effects of methylphenidate on the behavior of hyperactive students lead to positive changes in teacher behaviors toward those students (Whalen, Henker, & Dotemoto, 1981). Other research has found that teachers believe that medication is superior to behavioral interventions in producing positive performance in the classroom (Klein & Abikoff, 1997). Based on the Pygmalion effect (Rosenthal & Jacobson, 1968), one might predict that if teachers expect to see positive changes in the behavior and performance of students with ADHD when they take medication, then they will interact with their students based on their expectations of the effects of medication, and this interaction may affect the students' self-expectations and behaviors.

In Davino et al.'s (1995) study of teachers' attitudes toward stimulant medication, 18% of the teachers agreed that they had at least once encouraged parents to ask a doctor about medication for their children. Prolonged effectiveness of medication is only possible through continued use over long periods of time (Barkley, 1991). Therefore, teachers may begin to rely on medication to improve the behavior and performance of

those students with ADHD (Whalen, Hinshaw, Henker, Heller & Huber-Dressler, 1991) rather than learn how to change their interaction patterns and search for alternative ways to help the students develop self-control.

The idea that labels may impact teachers is especially important given the influence that teachers have in making crucial decisions about students. This study looked at the possible presence of observer bias in prospective teachers' responses to a student who they believed had ADHD and may or may not have been taking methylphenidate. The format used to collect data on observer bias was consistent with previous labeling studies, in which observers were given different information about the same individual and were asked to rate that individual.

In a follow-up discussion, students admitted that they had been influenced by their expectations of the effects of alcohol and that they had distorted their perceptions based on what they thought should happen. A study by Stern et al. (1998) showed 249 university students a video of a normal infant and asked them to rate her on twenty bipolar adjectives. They told half of each group that the infant was normal and told the other half that the infant's mother had taken cocaine during pregnancy. Participants who were told that the infant had been exposed to cocaine rated her more negatively than participants who were told that she was normal, indicating that negative expectations about cocaine exposure influenced their perceptions of behavior. Similarly, Stern and Hildebrandt (1984) asked 225 participants to observe a video of a baby who was labeled as either full-term or premature and to complete a rating scale of behaviors. They found that adults who thought that the infant was premature rated that infant more negatively than did adults who thought that the same infant was

CHAPTER II

REVIEW OF THE LITERATURE

Observer Bias

Observer bias has been well documented in many settings. Goldstein et al. (1994) illustrated the concept of observer bias to students in a college psychology course. They asked students to observe and rate the speech, behavior, and performance on a mirror-tracing task of a person supposedly under the influence of alcohol. This individual was actually a trained confederate who drank what students thought was alcohol before each of three different star-tracing demonstrations. Although the confederate's performance was consistent across all three trials, students' ratings showed that they believed there was an increasing effect of alcohol. In a follow-up discussion, students admitted that they had been influenced by their expectations of the effects of alcohol and that they had distorted what they saw based on what they thought should happen.

Woods et al. (1998) showed 249 university students a video of a normal infant and asked them to rate her on twenty bipolar adjectives. They told half of each group that the infant was normal and told the other half that the infant's mother had taken cocaine during pregnancy. Participants who were told that the infant had been exposed to cocaine rated her more negatively than participants who were told that she was normal, indicating that negative expectations about cocaine exposure influenced their perceptions of behavior. Similarly, Stern and Hildebrandt (1984) asked 225 participants to observe a video of a baby who was labeled as either full-term or premature and to complete a rating scale of behaviors. They found that adults who thought that the infant was premature rated that infant more negatively than did adults who thought that the same infant was

full-term. They suggested that parents may interact with their premature infants according to a stereotype which may establish a self-fulfilling prophecy of behaviors in their children.

Condry and Ross (1985) looked at the effect of expectations about gender on ratings of aggression. They asked 175 participants to observe a video of two children dressed in snowsuits under one of four labeled conditions: Boy aggressor--boy victim, boy aggressor--girl victim, girl aggressor--boy victim, or girl aggressor--girl victim. They found that observers who thought that the child aggressor was a female rated that child as more aggressive than observers who thought that the same child was a male. In a similar study of gender bias, Condry and Condry (1976) asked 204 participants to view a video of an infant and to observe the infant's response to several stimuli. They found that observers who thought that the infant was a female rated one of the emotional reactions of the infant as fear and that observers who thought that the same infant was a male rated the identical emotional reaction as anger. The results of both of these studies suggest that beliefs about gender influence observers' perceptions of behavior so that preexisting gender stereotypes are confirmed.

Observer bias has also been studied in educational settings. DiBattista and Shepherd (1993) asked elementary school teachers to complete a questionnaire concerning their beliefs about the effects of sugar consumption on both hyperactive and normal children. Of the 389 respondents, the majority believed that sugar consumption adversely affects the behavior of all children and 57% had suggested to parents that they reduce the sugar intake of children who were perceived to be hyperactive in their classrooms. DiBattista and Shepherd noted that teachers' beliefs, which were based on

personal experiences and observations rather than on empirical evidence, had influenced the likelihood that they would perceive adverse changes in behavior, which could eventually strengthen their beliefs. McCallister et al. (1996) reviewed the literature on ratings of gifted children and found a discrepancy between teachers' reports of students' social competence and experimental reports. They suggested that teachers' expectations of social problems for gifted students have a negative impact on their perceptions of those students. Brophy (1983) reviewed research about self-fulfilling prophecy and teacher expectations. Studies consistently showed that a student's performance is likely to move in the same direction as the teacher's expectations for that student, a finding that is consistent with Rosenthal and Jacobson's (1968) Pygmalion effect.

Several studies have experimentally examined the effect of labels on teacher expectations. In two studies, teachers viewed a video of a normal child labeled as either normal, emotionally disabled, or learning disabled. Teachers who were told that the student was emotionally disabled or learning disabled rated that student more negatively than did teachers who were told that the student was normal. Even when teachers viewed normal behavior that was inconsistent with the label, they did not significantly change their ratings (Foster et al., 1975; Ysseldyke & Foster, 1978). Madie, Neisworth, and Kurtz (1980) noted that teachers' ratings of hyperactive versus normal children were also susceptible to bias effects. Participants in their study were asked to rate the behavior of a student using either a rating scale or a time-sampling method. However, half of the participants in each group received training in their method of observation. They found that observers who had received training were more objective in their observations and less influenced by the label of the child than those who had not received training.

Cornett-Ruiz and Hendricks (1993) found evidence that contradicts earlier findings of the effects of labels on teacher ratings. Teachers viewed a video in which a child actor demonstrated either normal behavior or behavior stereotypical of Attention Deficit Hyperactivity Disorder (ADHD). They were told that the child in the video was either normal or ADHD and were asked to rate his behavior, evaluate a writing sample, and predict his future success. Results showed that the actual behavior, but not the label, had a significant impact on the teachers' ratings. Although results may have been influenced by the limited number of observable ADHD behaviors portrayed in the video, Cornett-Ruiz and Hendricks suggested that these findings reflected the fact that teachers are becoming more knowledgeable about ADHD and are better able to react to the child rather than the behaviors stereotypical of a label.

ADHD and Treatment Approaches

According to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994), ADHD is characterized by severe inattention, impulsiveness, and excessive activity. Children must exhibit at least six of the symptoms listed in each category of the DSM-IV (APA) across a variety of settings and before the age of seven to be classified as ADHD. The diagnosis should be made by a psychiatrist or psychologist who must determine if the behaviors exhibited by the child are inappropriate for the child's developmental level and hinder the child's performance in different settings (Schaughency & Rothlind, 1991). The symptoms often become a problem when the child begins school and becomes disruptive to the organization of the classroom environment. It is at this time that parents may ask for an evaluation of the child's behavior and performance (Gadow & Nolan, 1993).

8

Treatments for ADHD include stimulant medication and behavior modification strategies (Carlson et al., 1992; DuPaul & Barkley, 1993; Klein & Abikoff, 1997; Pelham et al., 1993). Methylphenidate is the most commonly prescribed stimulant medication (Bramlett et al., 1997). Researchers have reported inconsistent findings about the most effective method of treatment, but most support a combination of behavior therapy and medication. Furthermore, they agree that treatment type and effectiveness will vary according to the student, the etiology of the symptoms, and the severity of symptoms (Klein & Abikoff; Pelham et al.; Swanson et al., 1993).

Pelham et al. (1993) found that the value of combined treatment is dependent on which treatment is tried first. Specifically, if behavioral strategies are tried first and medication is only introduced as needed, the combined approach is the most effective. However, if medication is tried first and behavioral strategies are only introduced if the medication is insufficient, most children will not need the behavior therapy. Carlson et al. (1992) offered evidence to support this idea. They found that a low dosage of methylphenidate was sufficient to maximally improve students' behavior when behavioral interventions were used, but that higher dosages of methylphenidate were needed when behavioral interventions were not used.

Klein and Abikoff (1997) found that methylphenidate alone and a combination of behavior therapy and methylphenidate led to the greatest improvement in both behavior and performance. They noted that teachers and parents requested that children who had previously been receiving methylphenidate, but were given placebo medication during the course of their study, begin methylphenidate again immediately. It is interesting to

note that they also found that teachers believe that methylphenidate is superior to behavior therapy in producing positive behaviors in the classroom.

Teachers are the ones who most closely observe the behavior of students diagnosed with ADHD, so they are often called upon to evaluate the effectiveness of treatment (Davino et al., 1995; Forness, Swanson, Cantwell, Guthrie, & Sena, 1992). Although studies have found that methylphenidate significantly improves the behavior of students with ADHD (DuPaul & Rapport, 1993; Klein & Abikoff, 1997; Wodrich & Kush, 1998), research reviewed by Carlson and Bunner (1993) and Swanson et al. (1993) reported only short-term benefits of methylphenidate on academic performance. Nevertheless, teachers believe that Ritalin greatly improves the academic performance of their students with ADHD (Davino et al.).

Studies using children's self-reports about the effectiveness of methylphenidate on their behavior and performance in the classroom have found interesting results. Carlson et al. (1992) reported that children had better perceptions of their behavior, academic performance, and interactions with others during medication conditions than during a placebo condition. Whalen et al. (1991) found that stimulant medication affects the thoughts, self-perceptions, and causal attributions of those receiving it. Specifically, hyperactive boys who were on a placebo and told they were taking a placebo instead of their regular dose of methylphenidate rated their performance and effort worse than those boys who were on a placebo and were told that they were taking their regular pill. In addition, the boys who were told they were taking a placebo attributed their failure to not having their medication. Interestingly, Whalen et al. found no difference in ratings of

methylphenidate on the behavior of hyperactive boys led to positive changes in teacher

performance and effort of boys who were medicated but told that they were taking a placebo compared to boys who were medicated and told that they were medicated.

Several studies have examined the effects of methylphenidate on the responses of individuals who interact with children with ADHD. In their review of the research on the effects of stimulant medication, Swanson et al. (1993) reported that treatment of ADHD with medication produces an immediate positive change in the perceptions of parents and teachers. However, most of the studies they reviewed recognized the possibility of placebo and expectancy effects on those positive perceptions. Barkley, Karlsson, Strzelecki, and Murphy (1984) found that Ritalin improved the interactions of hyperactive boys with their mothers. They further noted that although low doses of Ritalin improved child compliance, only higher doses changed parental reactions to the child. In a similar study, Danforth, Barkley, and Stokes (1991) found that parents of hyperactive children attended more frequently to negative behaviors than positive behaviors, but that parent training drastically affected the response of parents to their children. They concluded that the behaviors of parents and their hyperactive children influence each other and that parent training can be as effective as medication for improving their children's behavior.

Alessandri (1992) noted that students who exhibit ADHD behaviors influence the way that their teachers interact with them. He found that preschool teachers redirected and disciplined students with ADHD more frequently than students without ADHD. The observed effects of medication on children with ADHD also affect the behavior of teachers in the classroom. Whalen et al. (1981) found that positive effects of methylphenidate on the behavior of hyperactive boys led to positive changes in teacher

behaviors toward those boys. Specifically, teacher--student contacts were more intense for boys taking placebo than for boys taking medication.

Methylphenidate Effectiveness

Reid and Maag (1994) noted that the ratings of behaviors on ADHD rating scales often depend on subjective interpretations of observed behaviors by teachers, parents, and psychologists. Furthermore, the positive claims about the effectiveness of methylphenidate on students with ADHD are not consistently substantiated and may vary according to the assessment instrument used. For example, physicians, teachers, and parents, who tend to use external behavioral criteria to evaluate ADHD, attribute a 70% success rate to the effects of medication. In contrast, when curriculum-based measures are used for evaluation the success rate is closer to 50% and when demanding academic tasks are used, the success rate is closer to 20% (Forness et al., 1992). These findings are consistent with research that shows that methylphenidate is effective in improving the behavior, but not the academic performance, of students. Forness et al. also found that teachers are often less knowledgeable about psychostimulants than other types of interventions. Nevertheless, 90% of teachers believe that they should know if a student is taking stimulant medication and 50% of teachers think that they should be the ones responsible for observing and reporting side effects of medication to parents and doctors even though they may not know what those possible side effects are (Davino et al., 1995).

Is it the medication that makes the difference in the behaviors of certain students or is it the expectation of the teachers that the medication is working that leads them to perceive those behaviors differently? If teachers respond to students based on their expectations, then they may respond more negatively to a student who exhibits behaviors

associated with ADHD and respond more positively when the student has taken medication that the teacher expects to improve negative behaviors. This point may be especially true if the teacher believes that medication is more effective than behavior therapy, as noted by Klein and Abikoff (1997), and does not see a need to modify the classroom environment.

Biased perceptions of behavior can be detrimental because of their influence on the behaviors of the observer toward an individual (Madie et al., 1980). Teachers often unknowingly contribute to the behaviors of those students with whom they interact because of their biases (Whalen, Henker, & Dotemoto, 1980). If it is the expectation of improved behavior that makes the difference, then teachers should be able to influence the behavior of students with ADHD by changing the way they interact with those students rather than relying on their beliefs about the positive effects of medication.

Limitations of Previous Research

One limitation of previous research is that although studies of observer bias have tested the effect of labels in many settings, including education, no study was found that examined the effects of labels associated with ADHD and medication. This finding is surprising given the percentage of school-age children who are being diagnosed and prescribed medication and the importance of teacher interaction in student behavior.

A second limitation arises from a review of the literature about the effects of methylphenidate on the behavior of students with ADHD. The majority of researchers reviewed in this introduction conducted double-blind studies in which neither the researchers nor the observers knew whether the children being observed were taking medication or a placebo (DuPaul & Barkley, 1993; Madie et al., 1980; Platzman et al.,

1992; Swanson et al., 1993). The underlying assumption of such studies is that the possibility of observer bias exists. Some researchers actually acknowledge that observer bias may have affected the results of their studies (Klein & Abikoff, 1997; Swanson et al.). However, no study has been done to test whether or not this assumption is true. Specifically, do teachers' expectations of the effect of medication on their students with ADHD, regardless of the actual presence of medication, actually influence their ratings of those students?

The Current Study

The current study looked directly at the presence of observer bias in prospective teachers and its effect on their perceptions of the effectiveness of methylphenidate on students with ADHD. It was hypothesized that prospective teachers who were told that a student had taken a prescribed dose of methylphenidate for ADHD would rate the behaviors of the student more positively than those who were told that the same student had not taken the prescribed medication or those who were told that the same student was on a behavior plan.

Prospective teachers observed a student in a video and rated the degree of each behavior on a semantic differential scale of bipolar items. Consistent with the format of other labeling studies, observer bias was studied by manipulating the information that participants received about the student they were observing, so that one group believed that the student had taken medication for ADHD, another group believed that he had not taken medication for ADHD, and a third group believed that he was on a behavior plan for ADHD. A control group believed that he was a typical third-grade student.

CHAPTER III

METHOD

Participants

Participants were 88 education majors enrolled in Tests and Measurement and Educational Psychology at Austin Peay State University. These courses were chosen because all prospective teachers are required to take them and because they are in the psychology department, which makes data collection easier. The researcher chose to use prospective teachers instead of teachers because of the simplicity of obtaining permission to use students and in collecting data from students. Furthermore, these students will be employed as teachers in the future and the researcher hoped that their participation in this research would provide information that could be useful in developing training programs for both teachers and prospective teachers.

Of the 88 participants, 67 were female and 21 were male. Ages ranged from 19 to 50 years, with a mean of 25.87 years ($SD = 8.08$). Seventy-three participants were Caucasian, six were African-American, five were Hispanic, and four were classified as "other". Participants included 16 sophomores, 41 juniors, 25 seniors, and six post baccalaureates. The average number of education courses completed was 7.20 ($SD = 9.67$).

Permission was obtained from the professors of Tests and Measurement and Educational Psychology to conduct research during the last half of each of four class periods. The professors were dismissed to their offices at the beginning of each research session so that students could be given an opportunity to refuse participation. Students were told that participation in this research was not required as part of the course and that

they were free to leave without penalty. Students who volunteered received extra credit as indicated in the course syllabus.

Design

A between-groups design was used for this study. There was one independent variable, the biasing information about the child in the video provided to observers. The four levels of this independent variable were the four different conditions: no label, ADHD with medication, ADHD without medication, and ADHD on a behavior plan. The dependent variable was the average rating of the child by each participant.

Materials

Packets. All materials for participants were placed into individual packets. Each packet was coded with a unique number written in the upper left corner. All materials, except for the informed consent form, contained a number corresponding to the packet number and were stapled together so that participants would proceed through the information in the same order. The code numbers were used to identify the four different levels of the independent variable and to maintain the anonymity of participants.

Since this study required the use of mild deception, a detailed informed consent form provided as much information as possible about the study and provided an opportunity for the participant to consent to or deny participation (see Appendix A). A personal information sheet asked participants for information about age, gender, race, level of education, number of education courses, and intent to teach (see Appendix B).

An instruction sheet explained what the participants were to do with the video, information sheet, and rating form (see Appendix C). A semantic differential scale of bipolar behaviors was used by participants to indicate the degree to which the child in the

video demonstrated each behavior (see Appendix D). Four different versions of an information sheet provided information about the child that participants observed. Since the prospective teacher's belief in the condition of the student in the video was the independent variable, these four versions served as the four levels of the independent variable. Specifically, one group was given information that portrayed the student as a typical third grade student. This group served as the control group. A second group was told that the student had been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and prescribed Ritalin, and that the student regularly takes his prescribed dose twice a day (Barkley et al., 1984; Pelham et al., 1993; Wodrich & Kush, 1998). The third group was told that the student had been diagnosed with ADHD and prescribed Ritalin, and that he did not take his prescribed dose the day the video was made. The fourth group was told that the student had been diagnosed with ADHD and placed on a behavior plan (see Appendix E). The rating form was a semantic differential scale of 22 bipolar items

Videotape. The videotape, produced by the researcher, shows a child exhibiting behaviors characteristic of ADHD in a classroom setting. The target student in the video is a normal third-grade boy who followed a script of behaviors prepared from the criteria for ADHD outlined in the DSM-IV (APA, 1994). Five other students also followed scripts and were instructed to behave as typically expected in a classroom setting. Since children were used, permission was obtained from the Austin Peay Institutional Review Board (APIRB) before the filming date. Members of the APIRB received a summary of the proposed study and a copy of the video script, information letter to parents, and informed consent form for both the main actor and supporting actors. The videotape was filmed in a public school classroom in a small town in South Carolina to lessen the

possibility that observers might recognize any of the children. All children were recruited by the parent of the main actor and were given a script and informed consent form two weeks before the tape was produced. Signed consent forms containing the signatures of both the child and the parent were obtained from each parent before filming began and are currently in the possession of the researcher.

The researcher chose to develop her own videotape for several reasons. First, an exhaustive search for a preexisting, commercially-produced training video proved futile. Second, the only videos demonstrating ADHD behaviors in a classroom were non-consecutive clips accompanied by commentary instead of continuous observable behaviors. Finally, videos used for previous research have highlighted only a few of the behaviors characteristic of ADHD rather than demonstrating many of the observable traits.

Instrument. The rating form was a semantic differential scale of 22 bipolar items developed by the researcher based on the criteria for ADHD in the DSM-IV (APA, 1994). Negative items were created by using these diagnostic criteria and corresponding positive items were developed by considering the opposite pole of each negative item. Items were counterbalanced such that some negative items were listed on the low end of the scale and other negative items were listed on the high end. The scale for each pair of items ranged from one to six with one being associated with a more negative rating and six being associated with a more positive rating. Therefore, reverse scoring was used on those items for which the negative behavior was at the high end of the scale. A strong internal reliability ($\alpha = .835$) was determined by calculating Cronbach's alpha. In addition, items were compared to those on the Conners' Teacher Rating Scale-Revised

(CTRS-R; Goyette, Conners, & Ulrich, 1978) and the ADHD Rating Scale (DuPaul, 1991), both of which have demonstrated reliability and validity.

The researcher chose to develop her own scale for several reasons. First, creators of typical behavior rating scales correctly assume that a teacher completing the forms has interacted with the student during the course of a school year and not in a one-time observation. Second, participants in several studies of observer bias have used semantic differential scales to rate the person under observation (Condry & Condry, 1976; Condry & Ross, 1985; Stern & Hildebrandt, 1984; Woods et al., 1998). Finally, the researcher was more interested in the perception of the degree of behavior observed by participants than in the actual score on a rating scale. For this reason, she believed that a differential scale of bipolar descriptors was more appropriate than an actual rating scale in this investigation.

Procedure

Approval was obtained from the APIRB to conduct this research. Upon approval, data were collected during the last thirty minutes of each of four different sections of Tests and Measurement and Educational Psychology, classes in the psychology department required of education majors. Data were collected from volunteers in two sections of Tests and Measurement and two sections of Educational Psychology. To lessen the chance of communication between students in different sections, debriefing forms were distributed to students at the next class meeting after all volunteers had completed the study. The same procedure was followed in each class. The professor was excused from the classroom at the beginning of the research session so that students had an opportunity to refuse to participate. Students were told that participation in this study

19

was not required as part of the course and that they were free to leave without penalty. Students who volunteered received extra credit as indicated in the course syllabus.

An equal number of coded packets containing each independent variable was distributed in each class, and packets were distributed randomly to participants within each class so that the researcher did not know which student received which independent variable. Participants were told that the researcher was interested in how accurately prospective teachers observe and evaluate student behavior. Participants were instructed to remove the materials from their packets. They were told to read the informed consent form and sign at the end to indicate their consent. Participants' confidentiality was maintained because informed consent forms were collected separately from the completed packets, and all other information contained only a code number to identify the independent variable. Participants were asked to complete demographic information that included age, gender, race, level of education, number of education courses completed, and their intent to teach.

Participants were told to read the instruction sheet explaining exactly what they were to do. They were given three minutes to review the bipolar items on the rating form and the information about the student in the video. Participants were allowed to ask questions about the instructions or rating form before the start of the video, but were instructed to address questions individually to the researcher and to not communicate with classmates because of the possibility of one participant's opinion affecting others' observations. After participants observed the ten-minute video, they were instructed to rate the student as accurately as possible and were given time to complete the scale. They were instructed to place all forms, except the informed consent form, into their packets

when they finished. After all packets and consent forms were collected, participants were given an extra credit slip and a copy of the informed consent form as they left. The researcher returned at the beginning of each class on the next meeting date to give participants a debriefing form that explained the true purpose of the study and the necessary use of deception. Participants were allowed to ask questions at that time.

Participants were 88 education majors (44 males and 44 females) who provided demographic information. The instrument used was a bipolar items scale which contained 22 items developed by the researcher based on criteria for ADHD in the DSM-IV (APA, 1994). The scale ranged from 1 to 5, with 1 indicating a more negative rating and a higher number indicating a more positive rating. Six of the 22 items were counterbalanced so that the positive and negative ends of the scale were reversed. Reverse scoring was used for these items. After observing the student in the video, participants rated the severity of each item on the scale. Total scores were obtained by adding the circled numbers for each item. The negative trait at the lower end of the scale and the corresponding positive trait at the higher end of the scale. Average ratings were obtained by dividing the total score of each participant by the number of items.

A one-way analysis of variance compared the mean scores of the ratings of the four groups of prospective teachers. The alpha level was .05. No statistically significant difference, $F(3, 84) = .957, p = .417$, was found between the ratings of any of the four groups, such that the rating for each group was fairly equal (see Table 4-2).

CHAPTER IV

RESULTS

Data collected from each group in each class were combined so that there were four groups of data for analysis: ratings of the non-labeled child, ratings of the child labeled ADHD with medication, ratings of the child labeled ADHD without medication, and ratings of the child labeled ADHD on a behavior plan. Participants were 88 education majors (see Table 4-1 for specific demographic information). The instrument used was a semantic differential scale of bipolar items which contained 22 items developed by the researcher using the criteria for ADHD in the DSM-IV (APA, 1994). The scale ranged from one to six, with a lower number indicating a more negative rating and a higher number indicating a more positive rating. Six of the 22 items were counterbalanced so that the positive and negative ends of the scale were reversed. Reverse scoring was used for those items. After observing the student in the video, participants rated the severity of each behavior on the scale. Total scores were obtained by adding the circled numbers for all items with the negative trait at the lower end of the scale and the corresponding reverse numbers for all items with the negative trait at the higher end of the scale. Individual average ratings were obtained by dividing the total score of each participant by the number of items.

A one-way analysis of variance compared the mean scores of the ratings of the four groups of prospective teachers. The alpha level was .05. No statistically significant difference, $F(3, 84) = .957, p = .417$, was found between the ratings of any of the four groups, such that the rating for each group was fairly equal (see Table 4-2).

Table 4-1. Demographic information

Category	Number of Participants		
Total	88 (100%)		
Gender			
Female	67 (76.1%)		
Male	21 (23.9%)		
Race			
Caucasian	73 (83.0%)		
African-American	6 (6.8%)		
Hispanic	5 (5.7%)		
Asian	0		
Other	4 (4.5%)		
Level			
Sophomore	16 (18.2%)		
Junior	41 (46.6%)		
Senior	25 (28.4%)		
Graduate/Post-baccalaureate	6 (6.8%)		
Age	Mean	<u>SD</u>	Range
Age	25.87	8.08	19-50
Number of education courses	7.20	9.67	0-46

Table 4-2. Mean rating by group

Group	<u>M</u> Total Average	<u>SD</u> Total Average	Range Total Average
No label	50.18 2.41	11.22 .54	30-78 1.58-3.71
ADHD with medication	44.39 2.11	11.48 .55	21-63 1.00-3.00
ADHD without medication	46.86 2.26	12.53 .61	27-72 1.29-3.43
ADHD on behavior plan	47.68 2.27	13.61 .65	29-83 1.38-3.95

was taking medication for ADHD would rate his behavior more positively than those who were told that he had forgotten to take his medication and those who were told that he was on a behavior plan. Contrary to this hypothesis, results showed that there was no significant difference between the ratings of any of the four groups, indicating that the labeling information about the student provided to each group did not differentially affect their ratings of the student's behavior.

Does this finding mean that observer bias in ratings of student behavior in the classroom is not as important as expected and that studies of the treatment effects of methylphenidate do not need to employ double-blind, placebo designs? Brophy (1983) suggested that the presence of experimentally-induced bias effects in the laboratory does not mean that they exist in the actual classroom. Similarly, the fact that prospective teachers in a controlled laboratory setting showed no observer bias toward treatments for ADHD does not mean that teachers in an actual classroom would not. Perhaps some of

CHAPTER V

DISCUSSION

This study investigated the presence of observer bias in prospective teachers' ratings of student behavior. Consistent with other labeling studies, prospective teachers were given different information about a child actor in a videotape that they were to view. Groups differed on the basis of the scenario presented. A control group was given information portraying a typical child. A second group was told that the child had ADHD and was taking medication. A third group was told that the child had ADHD and had forgotten to take his medication. The fourth group was told that the child had ADHD and was on a behavior plan. The hypothesis predicted that prospective teachers who were told that the child was taking medication for ADHD would rate his behavior more positively than those who were told that he had forgotten to take his medication and those who were told that he was on a behavior plan. Contrary to this hypothesis, results showed that there was no significant difference between the ratings of any of the four groups, indicating that the labeling information about the student provided to each group did not differentially affect their ratings of the student's behavior.

Does this finding mean that observer bias in ratings of student behavior in the classroom is not as important as expected and that studies of the treatment effects of methylphenidate do not need to employ double-blind, placebo designs? Brophy (1983) suggested that the presence of experimentally-induced bias effects in the laboratory does not mean that they exist in the actual classroom. Similarly, the fact that prospective teachers in a controlled laboratory setting showed no observer bias toward treatments for ADHD does not mean that teachers in an actual classroom would not. Perhaps some of

23

the prospective teachers would have rated the student differently in the natural context of the classroom, where teachers often compare the behavior of different students and make judgments about the severity of a student's behavior over the course of several weeks or months. In the current study, observers focused on the behaviors of one child for ten minutes without the natural distractions and limitations of the classroom and without the need to rely on memory for the severity of each behavior, which may have allowed them to rate the student more accurately than they would have in a classroom.

Although Brophy (1983) believes that most teachers are accurate in their assessments of students and are constantly using self-corrective feedback in their interactions with students, he also believes that observer bias probably does exist with some teachers in some classrooms. A teacher's personality, attitude toward students, beliefs about teaching, and teaching style are all important in determining whether or not that teacher will allow outside information to bias observations of and interactions with students (Brophy; Stevens, Quittner, & Abikoff, 1998). Since teachers in the classroom represent different levels of tolerance, expectations, attitudes, and styles, it is reasonable to assume that the prospective teachers in this study represented similar differences. Obviously, these differences may affect their evaluations and interactions with students in their future classrooms, and may have affected their ratings of the student in the video in this study. Since individual total scores in each of the four groups had a range of at least forty points (see Table 4-2), it is possible that the extreme differences in the ratings within each group balanced out and led to no difference between any of the groups. Although there was not a statistically significant difference in the ratings of any of the four groups, it is interesting to note that the group who believed that the child they

20
observed had ADHD and was taking medication rated the child more negatively than the groups who believed that the child had ADHD and failed to take his medication and who believed that the child had ADHD and was on a behavior plan. This finding is in direct contrast to the hypothesis that the former group would rate the child more positively. One explanation for this finding was suggested by Stevens et al. (1998) in their study of teachers' ability to distinguish the behaviors associated with different childhood disorders. They suggested that teachers may become sensitized to behaviors that they observe and give less extreme ratings as their acceptance of the behaviors increases.

Perhaps the prospective teachers in this study have received extensive training in recognizing deviant behaviors and dealing with children who have all types of disabilities and diagnoses because of the current emphasis on including all children in the regular classroom. Furthermore, the majority of these prospective teachers have grown up during the past two decades when ADHD has become a common diagnosis and medication has become a common treatment. Many of them may have friends or family members who have been diagnosed with ADHD and take medication. Therefore, they may be more accepting of negative behaviors of a student who has ADHD and has not taken his medication and may even give the student a less severe rating because they believe that the student can not control his own behavior. In contrast, prospective teachers may believe that the student who has ADHD and has taken medication should be able to control his behavior and may be less accepting of his negative behaviors and rate him more severely. It is also possible that the prospective teachers in this study who thought that the student in the video had taken medication for ADHD rated him more negatively because they had higher expectations of him and thought that he was being disobedient

rather than exhibiting symptoms of ADHD. It is interesting to note that the group who received no information about a diagnosis and thought that they were observing a typical student rated him more positively than any of the other groups.

The non-significant findings of this study may also reflect the quality of the instrument used. Just as evidence of observer bias varies with the individual teacher, it also varies with the type of scale used. Research has shown that the possibility of bias decreases with the use of a well-operationalized versus a more globalized scale (Stevens et al., 1998). In other words, when teachers are asked to rate students based on well-defined, specific behaviors, evidence of observer bias decreases. The behaviors on the rating scale used in this study were specific and observable, which may have led to the ratings of all four groups that reflected the negative behaviors demonstrated in the video. With this in mind, developers of behavioral rating scales should evaluate their instruments for objective, specific items that force teachers and other observers to focus on observable behaviors rather than rely on perceptions that may lead to error.

Research suggests that teaching observers to focus on observable behaviors also decreases the impact of biasing information on ratings (Cornett-Ruiz & Hendricks, 1993; Madie et al., 1980). In this study, participants were instructed to carefully observe the child in the video and to rate his behavior as accurately as possible. The emphasis on watching the target student and accurately rating him may have led to the accurate and consistent negative ratings given by participants, indicating that participants did focus on the observable behaviors rather than the biasing information provided. This possibility is consistent with findings in a study by Cornett-Ruiz and Hendricks (1993), which showed that actual behaviors stereotypical of ADHD, but not an ADHD label by itself,

significantly impacted teachers' and peers' ratings of a student. As Cornett-Ruiz and Hendricks suggested about teachers in their study, perhaps today's prospective teachers are more educated about ADHD and better trained to work with students diagnosed with ADHD than were those in the past. If this is true, these prospective teachers may be better prepared to respond to a student's observable behaviors and less likely to be influenced by potentially-biasing outside information and opinions.

Several limitations of this study exist. First, the use of a ten-minute videotape may limit the generalizability of the finding that observer bias is not present in prospective teachers' ratings of students. It may be that teachers in a classroom setting would be more subject to bias effects or that these prospective teachers would be more subject to bias effects in an actual classroom when rating a student based on several weeks or months of behavior. This is why teachers need to be trained to document specific observable behaviors daily so that when they are asked to rate a student, they will have evidence to help them more accurately rate the student.

Second, the fact that the child in the videotape was instructed to act out so many behaviors characteristic of ADHD may have lessened the impact of observer bias. Most of the studies examining labeling effects with ADHD have used videos with a limited number of observable behaviors (Abikoff, Courtney, Pelham, & Koplewicz, 1993; Cornett-Ruiz & Hendricks, 1993; Madie et al., 1980). It may be that the number of behaviors demonstrated by the student in the video and the corresponding rating scale developed for use in this study allowed participants to observe and rate more specific behaviors than in previous studies, which led to consistency in accurate negative ratings by all groups and a non-significant finding. Another possibility is that the negative

behaviors observed in the video were so extreme that participants had to rate them negatively. Perhaps a video of the child acting normally would have revealed an observer bias effect because the behaviors would not have been as obviously negative as those seen in the current video.

To conclude, this study looked for observer bias in prospective teachers' ratings of the behavior of students with ADHD. Four groups were given different information about the same child in a video, such that one group believed that the child was normal; one group believed that the child had ADHD and was on medication; one group believed that the child had ADHD and did not take his medication; and one group believed that the child had ADHD and was on a behavior plan. Results indicated that ratings of the student's behavior were not affected by the potentially-biasing information. Possible reasons for this finding include the use of prospective teachers in a laboratory rather than experienced teachers in a classroom; the use of a scale with specific, observable behaviors; the extensive training that prospective teachers receive in identifying behaviors associated with diagnosable conditions; and the portrayal of obviously negative behaviors by the child in the video. Although observer bias for treatment of ADHD was not evident in prospective teachers' ratings of an observed student, the fact that individual classroom teachers may be influenced by biasing information is reason enough for the continued use of double-blind, placebo designs in studies of the effectiveness of different treatments for ADHD (DuPaul & Barkley, 1993; Madie et al., 1980; Platzman et al., 1992; Swanson et al., 1993).

The results of this study may actually reflect positively on the objectivity and specificity of the instrument used in this study and on the educational training of the

participants, and are, therefore, most useful for scale development and teacher training. First, developers of behavioral rating instruments should strive to make items as objective and specific as possible to lessen the impact of observer bias. Second, teacher training programs should strive to train teachers to recognize and document specific behaviors so that when they are asked to evaluate a student, they will be able to rely on accurate information rather than memory that may be influenced and distorted by time and student comparison.

The prospective teachers in this study should be complimented on their objectivity and be encouraged to evaluate their future students based on specific, observable behaviors and not on the opinions of other teachers, parents, peers, or other outside information. The idea that these teachers may be able to demonstrate the same objectivity that they showed in this study in their future classrooms is positive, especially in light of research reviewed by Platzman et al. (1992) that suggests that teachers' ratings of students in the classroom should be an important part of the diagnostic process. Future research should examine observer bias in experienced classroom teachers to see if there is a difference in the effect of biasing information on their ratings of the student in the video.

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Appendix A

Informed Consent to Participate in Research

You are being asked to participate in a research study. This form is designed to provide you with information about this study and to answer any of your questions.

1. TITLE OF RESEARCH STUDY

The Ability of Prospective Teachers to Observe and Evaluate Student Behavior.

2. PRINCIPAL INVESTIGATORS

Bethany Timmerman, Graduate Student, Austin Peay State University,
Psychology Department, Clarksville, TN, (931) 358-0231
Maureen McCarthy, Ph.D., Austin Peay State University, Psychology
Department, Clarksville, TN, (931) 221-6333

3. THE PURPOSE OF THE RESEARCH

This study will look at the way that students pursuing a career in teaching observe and evaluate the behavior of students. The ability to accurately observe and appropriately rate student behavior is important given that teachers make decisions about students and interact with students on a daily basis.

4. PROCEDURES FOR THIS RESEARCH

You will be asked to read and sign a consent form and to complete information about your age, gender, race, college level, and number of education courses taken. You will be asked to read some information about a child that you will see in a videotape and then you will be asked to watch the ten-minute videotape. Following the videotape you will be asked to complete an assessment of the child's behaviors that you observed. You will be given a few minutes before the start of the video to review the list of behaviors on the rating instrument that you will use. The session will last approximately 30 minutes.

5. POTENTIAL RISKS TO YOU

There are no anticipated risks from participation in this study.

6. POTENTIAL BENEFITS TO YOU OR OTHERS

The benefits to you from participation in this study are minimal. You will receive extra credit from your professor as outlined in the course syllabus.

7. INFORMED CONSENT STATEMENT

I understand that I am being asked to participate in the present study being conducted by Bethany Timmerman, a graduate student in the Department of Psychology at Austin Peay State University under the supervision of Dr. Maureen McCarthy, a faculty member in the Department of Psychology at Austin Peay State University. I understand that I will be asked to answer demographic questions, view the videotape, and rate the student's behavior as accurately as I can. I have been informed, orally and in writing, of the procedures to be followed and about any discomfort which may be involved. I have also been told of any benefits that may result from my participation. If I have any further inquiries regarding the procedures I may contact Bethany at 358-0231 or Dr. McCarthy at 221-6333. I understand that I may also contact Linda Freed, a representative of the Institutional Review Board (IRB), at 221-7881, if I have questions concerning my individual rights as a research participant.

I understand that all information provided by me will be identified by number only and that the researchers will have no way of linking my data with my name. I understand that participation in this research is not required as part of this course and that I am free to terminate my participation at any time without penalty or prejudice. I also understand that I do not have to answer any questions that I do not want to, but that my participation will be most useful if I complete all items in the packet. I understand that I will be given an extra credit slip and a copy of this form to keep when I leave.

Signature _____

Date _____

Appendix B

Personal Information Sheet

Please complete the following information:

1. Age: _____

2. Gender: Male
Female

3. Race: Black
White
Asian
Hispanic
Other

4. College level: Freshman
Sophomore
Junior
Senior
Graduate

5. Number of education courses completed: _____

6. I plan to teach in the future: Yes No

Appendix C

Instruction Sheet

As teachers, you will be asked to observe and rate the behavior of students many times. It is very important that teachers make accurate observations and evaluations because of their influence in making decisions about students. Today, you will watch a ten-minute video of a student in a regular elementary school classroom and rate the degree of each behavior you observe on the scale included in your packet. You will have two minutes to review the list of behaviors on the form so that you are familiar with what to watch for in the video. You will then have one minute to read information about the child that you will observe. Following the video, you will have ten minutes to complete the rating scale. When you are finished, place all forms, except the informed consent, in the envelope and wait for me to collect the items. After all packets are collected, you will be dismissed. You will receive a copy of the informed consent form and an extra credit slip when you leave. **Since I am interested in *your* observations, please do not communicate with classmates during this session and please speak to me individually if you have any questions.**

Appendix D

Rating Scale

Instructions: Circle the number that indicates the degree to which the student demonstrated each behavior in the video.

Messy work	1	2	3	4	5	6	Neat work
Work often incomplete	1	2	3	4	5	6	Work usually complete
Listening	1	2	3	4	5	6	Not listening
Impatient	1	2	3	4	5	6	Patient
Ignores instructions	1	2	3	4	5	6	Follows instructions
Disorganized	1	2	3	4	5	6	Organized
Minimal talking	1	2	3	4	5	6	Excessive talking
Focused	1	2	3	4	5	6	Distracted
Moving hands or objects	1	2	3	4	5	6	Still hands or objects
Fidgety, restless in seat	1	2	3	4	5	6	Still in seat
Often in others' space	1	2	3	4	5	6	Usually in own space
Loud	1	2	3	4	5	6	Quiet
Neat work area	1	2	3	4	5	6	Messy work area
Inattentive	1	2	3	4	5	6	Attentive
Shaking foot or leg	1	2	3	4	5	6	Mostly still foot or leg
Usually raises hand	1	2	3	4	5	6	Often blurts out answers
Rarely completes tasks	1	2	3	4	5	6	Usually completes tasks
Often interrupts others	1	2	3	4	5	6	Usually waits for others
Often grabs objects	1	2	3	4	5	6	Usually waits for objects
Avoids schoolwork	1	2	3	4	5	6	Does schoolwork
Moves slowly	1	2	3	4	5	6	Moves quickly
Often gets out of seat	1	2	3	4	5	6	Usually remains seated

Appendix E

Label Conditions

Condition 1

This child is a typical third grade student. He lives in a mid-size city and attends a local school. He has a dog named Leroy and a hamster named Buster. His favorite color is red and his favorite food is pizza. He collects baseball cards and likes to play outside with his friends.

Condition 2

This child is a third grade student. Last year, he was diagnosed by a medical doctor with Attention Deficit Hyperactivity Disorder (ADHD) for his severe inattention, impulsiveness, and hyperactivity. He has been taking Ritalin two times a day ever since he was diagnosed.

Condition 3

This child is a third grade student. Last year, he was diagnosed by a medical doctor with Attention Deficit Hyperactivity Disorder (ADHD) for his severe inattention, impulsiveness, and hyperactivity. He is supposed to take Ritalin two times a day. However, the day this videotape was made, he did not take his Ritalin.

Condition 4

This child is a third grade student. Last year, he was diagnosed by a medical doctor with Attention Deficit Hyperactivity Disorder (ADHD) for his severe inattention, impulsiveness, and hyperactivity. He has been on a classroom behavior plan ever since he was diagnosed.

Appendix F

Debriefing Form

Please read the following carefully. It explains the purpose of this investigation and what will happen to the information that was collected.

1. The purpose of this study was to investigate the role of observer bias in rating student behavior. Observer bias occurs when preconceived ideas influence the evaluations of an individual by an observer. The researcher was interested in whether observers' beliefs about a student would affect their ratings of that student. Specifically, would observers who were told that a student was diagnosed with ADHD and had not taken his prescribed dose of medication rate that student more negatively than observers who were told that the same student was normal, observers who were told that the student had ADHD but took his medication, or observers who were told that the student had ADHD but was on a behavior plan?

2. The procedure used: You provided demographic information. You viewed a video of a student in a typical classroom setting after reading information about the student. Four different information sheets were distributed: One stating that the student is normal, one stating that the student has ADHD and takes Ritalin regularly, one stating that the student has ADHD and did not take Ritalin as prescribed, and one stating that the student has ADHD and is on a behavior plan. You rated the behaviors observed in the video on a semantic differential scale indicating the degree to which each occurred.

3. Risks and benefits associated with the study: The information that you have provided will remain confidential and you will remain anonymous. The researchers have no way to identify you by name. Mild deception was used in this study because of the need to see whether observer bias is present in prospective teachers' ratings of student behavior. You will receive extra credit for your participation.

4. What will happen to the information collected? The information collected will be used for the purposes of scientific presentation and publication. At no time will your identity be revealed. Information will be made public only in the form of summaries, which make it impossible to identify individual participants. If you wish, you can receive a copy of the results and/or discuss the study with the researcher on completion of the project. If you are interested in receiving such information, let your professor know and she will contact the researcher.

VITA

Bethany Borry Timmerman was born in Louisville, Kentucky on September 23, 1968. She graduated from Eastside High School in Taylors, South Carolina in 1986. She entered Furman University in Greenville, South Carolina, and in June, 1990 received the degree of Bachelor of Science with a major in Biology. She reentered Furman University and completed requirements for certification in elementary education in December, 1991. She taught elementary school for six years in Louisiana, Florida, and Tennessee. She entered Austin Peay State University in January, 1998, and received the degree of Master of Arts in Psychology in December, 2000. She is married to Thomas Alan Timmerman, Sr. and is presently employed as the mother of their son, Thomas Alan Timmerman, Jr.