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Effect of labeling bias on ratings of ADHD symptoms

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EFFECT OF LABELING BIAS ON RATINGS
OF ADHD SYMPTOMS

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in fulfillment of the
requirements for the degree of
Master of Arts

in

The Department of Psychology

by

Jessica L. Rodriguez
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ABSTRACT

In a study by Fox and Stinnett (1996), labeling bias was defined as the “expectations that others might develop for a person given a particular label.” Research has repeatedly shown that negative characteristics are often attributed to children given a label, even when behavior does not differ from non-labeled peers. This study aimed to add to the understanding of labeling bias, specifically a label of Attention-Deficit/Hyperactivity Disorder (ADHD). Teachers were recruited to participate in an online survey in which they were randomly assigned one of three variations of a vignette. The vignettes described two children with either no label, a possible moderate ADHD label, or a possible severe ADHD label. Two videos of scripted, child actors were viewed by each participant. After each video, teachers rated the children’s behavior on the seven item, Hyperactivity/Inattention subscale of the *Social Skills Improvement System* (SSIS; Gresham & Elliot, 2008) and rated tolerance for the behaviors exhibited. The effect of priming teachers with an ADHD label (or lack thereof) on ratings of behavior was examined. Differences in tolerance ratings for the ADHD scale behaviors were also examined. Lastly, differences in behavior and tolerance ratings among the two videos were analyzed. Results suggest that ADHD label groups had no effect on behavior or tolerance ratings; however, significant effects were found for both behavior and tolerance ratings with regard to videos. The limitations of the current study and implications for future research are discussed.

INTRODUCTION/ REVIEW OF LITERATURE

Reputation, group membership, gender, race, and many other factors can influence how people view others. Using opinions of these factors to judge another is considered a bias. Biased views and discrimination can have detrimental outcomes for those individuals judged with bias (Fairbanks & Stinnett, 1997; Obiakor, 1999; Ross & Salvia, 1975; Stinnett, Bull, Koonce, & Aldridge, 1999). One bias that has been explored is labeling bias (Foster, Schmidt, & Sabatino, 1976; Johnson & Blankenship, 1984; Levin, Arluke, & Smith, 1982; Rolison & Medway, 1985; Rosenthal & Jacobson, 1968; Stinnett, Bull, Koonce, & Aldridge, 1999). Fox and Stinnett (1996) defined labeling bias as the “expectations that others might develop for a person given a particular label” (p. 143). Research has repeatedly shown that negative characteristics are often attributed to children given a label, even when behavior does not differ from non-labeled peers (Foster, Smchmidt, & Sabatino, 1976; Fox & Stinnett, 1996; Johnson & Blankenship, 1984; Milich, McAninch, & Harris, 1992; Rolison & Medway, 1985; Stinnett, Bull, Koonce, & Aldridge, 1999).

CLOSELY RELATED STUDY

Johnson & Blankenship (1984) demonstrated the negative effect diagnostic labels can have on the perception of a child. Twenty-four female education majors, enrolled in an Elementary and Early Childhood Education (EIEd) program or an EIEd and Specialized Instruction (SI) program, viewed two videos of 2nd grade boys during reading instruction. Each rater was told one video was of a “behaviorally disordered” child while the other video was of an “average” child. The order of label/no label description was counterbalanced. After watching the video, the participants’ tolerance for problem behavior and behavior ratings were assessed for each video. The behavior rating measure was the 55 item *Behavior Problem Checklist* (Quay & Peterson, 1967). The measure of tolerance was the *Disturbing Behavior Checklist* (Algozzine,

1978). This tolerance measure includes the same 55 items in the *Behavior Problem Checklist* (Quay & Peterson, 1967), adjusted so that each item on the checklist was rated as to what degree the behavior would disrupt instruction. Awareness of the study's purpose was also assessed. It was found that tolerance levels among the participants were not significantly different and all displayed a negative bias toward the labeled child (i.e. behaviorally disordered). Ratings were affected by awareness of the study, causing lower ratings of problem behavior for those students aware of the researcher's intent. The limitations of this study were sample size and participant awareness of the study's intent.

FACTORS AFFECTING LABELING BIAS

Beyond the occurrence or non-occurrence of labeling bias, it is also important to understand the factors that alter the effect of labels. One such factor is the diagnostic label given. Some labels having a stronger effect on bias than others (Levin, Arluke, & Smith, 1982; Stinnett, Bull, Koonce, & Aldridge, 1999). For example, Rolison and Medway (1985) demonstrated that an Educable Mentally Retarded (EMR) labeled children received lower IQ estimates than children labeled Learning Disabled (LD). In another study, Stinnett, Bull, Koonce, and Aldridge (1999) found that Serious Emotional Disturbance (SED) and Emotional-Behavioral Disorder (EBD) labeled children were rated as having significantly more disruptive behaviors than children labeled Behavior Disordered (BD). Other research has shown an SED labeled child to be rated as having poorer interpersonal relationships than children labeled Conduct Disordered (CD) or no-exceptionality (Fairbanks & Stinnett, 1997).

Profession of the rater also influences the effect of labeling bias. Labeling bias has been shown in teachers, clinicians, school psychologists, and social workers (Carroll & Reppucci, 1978; Fairbanks & Stinnett, 1997; Langer & Abelson, 1974). Carroll and Reppucci (1978) found that mental health workers have shown less negative expectations of a labeled child than

teachers. While profession can affect labeling bias, specific characteristics of raters may also differentially affect bias (Stinnett, Crawford, Gillespie, Cruce, & Langford, 2001). Langer and Abelson (1974) found that while behavioral therapists rated an interviewee similarly regardless of label, analytic therapists found an interviewee labeled “patient” to be more disturbed than an interviewee labeled “job applicant.”

LABELING BIAS IN THE CLASSROOM

One of the most important populations affected by labeling bias is teachers. Teachers’ expectations are a critical topic of study considering teachers are frequently the first person to refer a child for testing or treatment (Lurie, 1974). Furthermore, teacher input, considering teachers’ knowledge and experience with children, is an important component in the assessment process (Atkins, Pelham, & Licht, 1985; Loney & Milich, 1982). Part of this assessment process is often the administration of an academic or behavioral rating scale. Objectivity is one goal of good assessment; however, research has shown that a rater’s own standards and judgment, and the context in which the problem occurs, can affect how a child is rated (Edgar & Hayden, 1985; Elliot, Gresham, Frank, & Beddow, 2008). In a review of 77 studies, Dusek and Joseph (1983) utilized Stouffer's (1949) method of adding *Zs* to identify student factors that influence teacher/participant expectancies. An important factor was cumulative folder information. Twenty-four relevant studies were further examined, and it was found that cumulative folder information and teacher expectancies were highly correlated. It has also been shown that past performance can raise or lower teacher’s expectations of a child (Rolison & Medway, 1985). Therefore, teachers may not be rating or referring a child based only on what they have observed, but also on knowledge of a child’s past or reputation. In a study on reputation bias, Findlay and Ste-Marie (2004) stated the following, “using information based on the knowledge of prior behaviors/performances to evaluate performance is similar to setting up an expectation set for the

performance” (p. 154-155). It was found that reputation of an athlete can affect a judge’s score for that athlete. Rankings were higher for figure skaters when judges were aware of a positive reputation.

Expectations can affect far more than athletic scores, behavior ratings, and teacher referrals. In the classic study, *Pygmalion in the Classroom*, Rosenthal and Jacobson (1968) informed teachers that some children would show large gains in “intellectual blooming.” Those teachers formed higher expectations of those children. Several months later, the children who were expected to “bloom” exhibited greater gains in intellect than children whose teachers did not expect them to show large gains in “intellectual blooming.” A year after the original study, older children in the group of bloomers maintained higher intellectual gains than their peers not deemed to be bloomers. Rosenthal and Jacobson called this phenomenon a self-fulfilling prophecy and defined it as “how one person’s expectations for another person’s behavior can quite unwittingly become a more accurate prediction simply for its having been made” (p.vii). Similar self-fulfilling prophecies have been shown to occur in the lab, classrooms, and the work place (Braun, 1976; Eden, 1990; Eden and Ravid, 1982; Eden and Shani, 1982; Feldman & Theiss, 1983; Jussim, 1989; King, 1971; Rosenthal and Rubin, 1978).

Labeling has been argued as a catalyst for the self-fulfilling prophecy, having a negative effect on the expectations a teacher forms toward students (Dunn, 1968; Rosenthal & Fode, 1963). In turn, negative expectations can lead to negative outcomes for the child. For example, negative expectations can cause a child to have less opportunity to interact with a teacher in the classroom (Good, 1970; Rothbart, Dalfen, & Barrett, 1971) or cause less positive teacher interactions, negative stereotyping, and more criticism from the teacher (Rist & Harrell, 1982).

These adverse effects of labeling, and consequently negative expectations, can be detrimental to a child's social adjustment.

Herrman (1972) investigated the impact teacher approval has on a child's peer acceptance. Peer acceptance and teacher approval were highly correlated. These findings were consistent for Retish (1973) and Foley (1979) as well. However, while Levin, Arluke, and Smith (1982) did find some diagnostic labels to influence teacher expectations, it was found that the labels do not influence behavioral intentions of teachers. Perhaps this is evidence that labeling bias is unintentional and that teachers are unaware of the effects stigmatizing information can have on perception of a child's ability or behavior. Cohen (1977) hypothesized that teachers may unintentionally portray labeled children negatively to other teachers, parents, or peers.

In addition to affecting teacher expectations, labeling bias can also impact peer expectations. Dodge (1986) and Hymel (1986) both found that label and reputation affect how peers perceive a child and interact with that child. Peer expectations can occur given minimal stigmatizing information and can affect interactions and feelings toward a stigmatized child (Milich, McAninch, & Harris, 1992). MacMillan, Jones and Aloia (1974) reported that peer rejection, a lowered self-esteem, and less motivation are all negative effects of labeling. According to Rist and Harrell (1982), the negative effects of labeling may cause a labeled child to form learned helplessness and "give up" (socially, academically).

LABELING BIAS OF ADHD

Given the impact of a diagnostic labeling bias on child outcomes, this particular study will examine labeling bias and negative teacher expectations, specifically for the diagnostic label Attention-Deficit/Hyperactivity Disorder (ADHD). According to the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (DSM-IV-TR), ADHD is characterized by "inattention and/or hyperactivity-impulsivity" patterns that occur with more

frequency and/or severity than a typical individual would display. ADHD is more prevalent in males than females, and occurs in 3%-7% of school aged children. This is a greater prevalence rate than that reported in the DSM-III-R. ADHD is now one of the most commonly diagnosed problems in children (Klasen, 2000). Thus, many teachers will, at some point, have an ADHD diagnosed child in the classroom.

One of the first persons to notice a child displaying symptoms of ADHD and recommend assessment is often a teacher (Lloyd, Kauffman, Landrum, & Roe, 1991; Tannock & Martinussen, 2001). Teacher referrals are important to the diagnostic process considering the amount of time teachers spend with the children they teach and the behaviors they are able to observe. However, teachers may have negative opinions of externalizing behavior of children with ADHD and are often pessimistic about instructing these children (Kos, Richdale, & Hay, 2006). Rosenthal and Jacobson's (1968) research on self-fulfilling prophecy would suggest that the negative opinions and pessimism of these teachers will affect the ADHD labeled children in regards to their opinions of their own behavior and long term outcomes. It is known that an ADHD diagnosis negatively impacts a child socially and academically, leads to poor-self esteem, can cause tension in family relationships, and demoralize a child (DSM-IV-TR). It also can lead to poor familial relationships, aggression, academic failure, and trouble professionally as an adult (Barkley, 1998; Hinshaw, 1994; Mannuzza, Klein, & Addalli, 1991; Stormont, 1998). Considering the increased prevalence rate of the ADHD diagnosis, the severe impact this diagnosis can have on a child, and the potential additional outcomes of the label bias itself, the ADHD label bias was of particular interest to the researcher.

PURPOSE OF THE STUDY

The purpose of the current study was to expand on the research of Johnson & Blankenship (1984). The effects of labeling bias were examined; however, the label was specific

to ADHD. Videos of two, Caucasian, male children were viewed by participants in the education field (i.e. teachers). Although tolerance levels among the participants were not significantly different in the 1984 study, prior research suggested that an increasing tolerance decreased the likelihood of bias (Foster, Algozzine, & Eaves, 1980). Research has produced varying results of tolerance (Algozzine & Curran, 1979; Algozzine, Ysseldyke, & Christenson, 1982; Liljequist & Renk, 2007). Therefore, the current study utilized a similar procedure as described in Johnson & Blankenship (1984) in an effort to replicate the effect of tolerance ratings (non-significance).

The following research questions were addressed:

1. Did label group have a significant effect on behavior ratings?
2. Did varying severity of the diagnostic label have a significant effect on ratings?
3. Did a significant difference in tolerance ratings among participants exist?

It was hypothesized that that label group would have a significant effect on behavior ratings. ADHD labeled children were expected to have more frequent ratings of problem behavior than non-labeled children. Furthermore, children labeled with possible severe ADHD symptoms were anticipated to have more frequent ratings of problem behavior than children labeled with possible moderate ADHD symptoms. It was also predicted no significant difference in tolerance levels would be found between participants.

METHOD

PARTICIPANTS

The email addresses of educators in Louisiana Parish schools were obtained from school websites offering faculty contact lists. An email requesting participation was emailed to those educators, forwarded via contacts of the primary researcher, and participants were encouraged to forward to other educators. Potential participants were informed the survey was part of a master's thesis, were given the primary researcher's contact information, given the link to the survey, and told a drawing for two \$50 Visa gift cards would occur after all participants completed the study.

An a priori power analysis was conducted to determine sample size using G*Power version 3.1.0 considering a two way, mixed model, multivariate analysis of variance (MANOVA) design. With an effect size of .25, an alpha of .05, and power set at .80, the necessary sample size was determined to be 81 ($n = 81$). A total of 89 teachers participated. Criteria for inclusion in the final analyses included no prior contact with students in the study videos (discussed in detail below) and no less than 92 % survey completion. No participants indicated prior contact with the students; however, 11 participants completed 50 % of survey items and thus were excluded from the analyses. Furthermore, box plots were examined and one participant was found to be an extreme outlier based on tolerance ratings. This participant was also eliminated from the analyses.

The final analyses included 76 teachers across nine parishes in southern Louisiana and one teacher from Lorain County, Ohio ($n = 77$). Participants' ranged between 20 to 70 years of age and from less than 1 year to more than 20 years of experience. There were 17 males and 60 females. The education levels of participants were as follows: Teacher Certification ($n = 3$), Bachelor's Degree in Education ($n = 25$), Bachelor's Degree not in Education ($n = 12$), Master's

Degree in Education (n = 22), Master's Degree not in Education (n = 10), Master's plus 30 (n = 1), Doctoral Degree in Education (n = 2), and Doctoral Degree not in Education (n = 2).

MATERIALS AND PROCEDURES

This study was an online survey with embedded video, created using Survey Monkey (©1999-2011). Upon following the link in the invitation email, participants were prompted to read and complete the consent for participation (reference *Appendix A*). Upon declining to participate, participants were directed out of the survey and read “You have declined to participate in this survey.” Following consent to participate, teachers completed the demographic form; shown in *Appendix B*. Names and identifying information were not included for the privacy of the participants.

VIGNETTES

After the demographic form was completed, participants were shown vignettes with a description of two, male students, the students' grade level and school. Participants were randomly assigned to one of three label groups: “NO ADHD,” “POSSIBLE MODERATE ADHD,” and “POSSIBLE SEVERE ADHD”. The NO ADHD group had no mention of ADHD included in the vignette. The POSSIBLE MODERATE ADHD group's vignette included a statement of the children's possible moderate symptoms of ADHD. The POSSIBLE SEVERE ADHD group received a vignette stating the children's possible severe symptoms of ADHD. The word possible was used in an effort to avoid deception of the participants. The NO ADHD, POSSIBLE MODERATE ADHD, and POSSIBLE SEVERE ADHD vignettes are shown in *Appendices C, D, and E*, respectively. After reading the assigned vignette, participants watched two videos of students during simulated mathematics instruction.

VIDEOS

Four fifth grade males, at the Baton Rouge School for Visual and Performing Arts, were nominated by their principal to participate in the creation of the study videos. Parental consent

(see *Appendix F*) and child assent (see *Appendix G*) were obtained before the students acted out classroom scenes on camera. The students devoted 2 hours of their time to train for and record the study videos with the researcher and four additional graduate assistants. A classroom at the students' school campus was utilized. It was not feasible to use a real classroom setting for control reasons. It was also important that the researchers not disrupt actual instruction time or video any children that were not given consent to participate. Two, handheld camcorders were used to record the children. Each child received ten dollars in gift certificates for Baskin Robbins ice cream as compensation for their time.

The researcher introduced the students to all graduate assistants and explained the process of creating the videos. The two boys that looked most similar were chosen as the “focus children” to eliminate bias based on appearance. The other two children were used as “peers” in the classroom to simulate a realistic classroom setting. Two graduate assistants (one for each child) filmed the “focus children” individually. The two focus children sat side by side in desks at the back of the classroom. The two “peers” sat in the empty desks next to the focus children, in the same row.

The crucial component of the training was the training of “behavioral cues.” The numbers 0 through 6 served as cues to prompt behaviors corresponding to each number. For example, when the researcher wrote a number 1 on the board, the children were cued to get out of their desk. A number 2 cued playing in the desks or fiddling with a pencil. A number 3 cued talking to a neighbor. Numbers 4, 5, and 6 cued looking around the room, paying attention to a classmate's noise, and inappropriately raising one's hand (waving and making noises), respectively. The number 0 cued the students to be on-task (paying attention to a simulated math lesson).

Furthermore, the behaviors associated with numbers 2, 4, and 5 were considered inattentive

behavior, while 1, 3, and 6 were disruptive behaviors. The researcher explained the cues and allowed practice. For reference, the numbers 0 through 6, along with the corresponding behavioral cues, were posted beside the board, visible to the students during filming.

Prior to filming, a master observation form was created (reference *Appendix H*). Thirty-six cells represented 5 second intervals during a 3 minute observation. The numbers 1 through 36 were written on small papers and placed into a bowl, representing the 36 intervals. The numbers 1 through 6 were also written on small papers and placed into a second bowl, representing the 6 behavioral cues (not including on task behavior). Each cue and an interval were randomly chosen and paired. The cue number was written on the master observation form inside the paired interval and the interval following (each cued behavior having a 10 second duration). This was repeated until all cues had been randomly assigned to intervals. Any interval for which a cue was not randomly assigned received a 0 (i.e. on task). Six master observation forms were completed and served as guides for the researcher (discussed below).

A 3 minute math lesson, appropriate to the students' grade level, was pre-recorded by the researcher using a voice recording application on a cellular device. The math lesson was then played through computer speakers from the front of the classroom. As the recorded lesson played in the background, the researcher prompted the students, via the number cues, to be on-task for a total of 2 minutes, inattentive but non-disruptive (IBND) for 30 seconds, and disruptive for 30 seconds. These durations were not necessarily consecutive. Intervals for the different behaviors and the order in which the cues were given, was determined by the master observation forms described above. A stop watch was used for cueing and durations.

For procedural reliability purposes, each student was observed during filming by a graduate assistant using the observation form in *Appendix I*. The observations were momentary

time sampling, at 5 second intervals, for the 3 minute duration of the lesson. Behavioral cues were not visible to the observers. For each video, criterion was set at 90 percent agreement or higher between the students' behavior durations (on-task, disruptive, and IBND) and the researchers master observation form. This assured that videos displayed the behaviors and the durations the researcher intended to show. Three filming sessions yielded six videos (three per focus child). Students' behavior in each video agreed with the researcher's master observation form at 97 percent or higher.

One video was randomly chosen per focus child from the three acceptable videos. These videos were uploaded to the researcher's personal account on YouTube (© 2011), a video hosting website. The videos were unlisted:

An unlisted video is a different type of private video. Unlisted means that only people who know the link to the video can view it (such as friends or family to whom you send the link). An unlisted video will not appear in any of YouTube's public spaces (What is an unlisted video, para.1).

Videos were embedded into the final online survey via YouTube's embed link; therefore, videos were viewed within the survey. The direct links to the videos were not visible to participants for the privacy of the child actors.

As described above, after reading a randomly assigned vignette, teachers viewed the study videos. While watching the videos, participants were able to hear the graduate assistant instructing the math lesson and watch the student as if sitting in the classroom. All participants viewed the same two videos in the same order. Following each video, participants completed a rating scale for that video (discussed below).

RATING SCALE

The *Social Skills Improvement System* (SSIS; Gresham & Elliot, 2008) Rating Scales is the revised version of the *Social Skills Rating System* (SSRS; Gresham & Elliot 1990). The SSIS

includes revised national norms, improvement of subscales, validity scales, and a four point rating scale of frequency, among other things. Social Skills, Academic Competence, and Problem Behaviors are three domains within the scale. There are three rating forms (Teacher, Parent, and Child); however, the present study used only the “Teacher” form, specifically, the seven item, Hyperactivity/Inattention subscale within the Problem Behaviors domain.

The features and criteria for an Attention-Deficit/Hyperactivity Disorder diagnosis as stated in the DSM-IV-TR were used to guide the development of the SSIS Hyperactivity/Inattention subscale (Gresham & Elliot, 2008). Reliability coefficients for the subscale on the Teacher Form, for boys only, are as follows: An internal consistency reliability (ages 5-12) of .90, a test retest reliability (ages 3-18) of .82, and an inter-rater reliability (ages 3-18) of .56. The item-total correlations (ages 5-12) are .70 or larger for all but one item in the subscale (Has temper tantrums) with a correlation of .49. The SSIS teacher form correlates highly with other behavior rating scale teacher forms such as the SSRS (Gresham & Elliot, 1990) and the *Behavior Assessment System for Children*, 2nd edition (BASC-2).

The rating scale developed for the present study included the seven SSIS Hyperactivity/Inattention subscale items along with a measure of participants’ tolerance for each behavior. The Hyperactivity/Inattention subscale was used to measure teachers’ ratings of ADHD symptoms considering the presence or absence of a labeling bias given prior to viewing the student video. The severity of the label was also considered. The tolerance measure was used to test for differences between groups in tolerance for behavior. Subscale and tolerance items were measured on a four point scale: Never, Seldom, Often, and Almost Always (scored 0, 1, 2, and 3, respectively). The rating scale is shown in *Appendix J*.

DEBRIEFING

At the completion of the survey, participants were asked “Did you know any of the children in the videos prior to today?” If any participant had indicated prior contact with a child or both children, a follow up question would have been asked (see *Appendix K*); however, no one answered “yes” to the above question. This question assured ratings were as objective as possible, and no teacher rated behavior based on interactions with the children prior to the study. The final form of the survey was a thank you page, including a place to enter into the drawing for the gift card, and the opportunity to opt in/out of receiving study results (see *Appendix L*). Throughout the survey, a progress bar appeared at the top of each page and gave a visual of the percentage completed.

DESIGN

The proposed analysis for this study was a two way, mixed model MANOVA, including the three label groups (NO ADHD, POSSIBLE MODERATE ADHD, POSSIBLE SEVERE) as the between factor and the two videos as the within factor. The dependent variables were: A behavior rating and a tolerance rating for each participant, for each video. Ratings from the seven items on the ADHD behavior scale and the seven items on the tolerance scale were transformed: Never = 0, Seldom = 1, Often = 2, Almost Always = 3. The seven ADHD behavior items were then summed to create the behavior rating for each video. The seven tolerance items were summed for the tolerance rating for each video. The behavior and tolerance ratings had a minimum of 0 and a maximum of 21. Throughout all analyses, cases of missing data were excluded pairwise.

RESULTS

Data was collected via an online survey beginning February 25, 2011 and ending July 8, 2011. A total of 89 educators participated, 11 of which completed 50 % of survey items and so were excluded from the analyses. One additional participant was determined to be an outlier for tolerance ratings for both videos (using boxplots). This participant was also eliminated from the analyses. The final analyses included 77 teachers.

It was hypothesized that no significant difference would be found in tolerance or behavior ratings within videos. It was proposed that if no significance was found, and ratings from video one and video two were highly correlated, a composite behavior rating and a composite tolerance rating be aggregated across videos for each participant. The researcher predicted that a significant main effect of label group would be found for behavior ratings; however, no main effect of label group was anticipated for tolerance ratings. It was also hypothesized that post-hoc tests would find severity of the labels to have significant effects on ratings of behavior scores, with POSSIBLE SEVERE ADHD having the highest scores for the ADHD scale, followed by POSSIBLE MODERATE ADHD, and NO ADHD having the lowest scores. No significant interactions were predicted.

Table 1 displays the sample sizes, means, and standard deviations for behavior and tolerance ratings by label group and video. Prior to the major analysis, it was found that behavior ratings from video one and video two were strongly, positively correlated, $r(73) = .59, p < .01$. However, a two-tailed, paired-samples t-test on behavior ratings, showed that participants' behavior ratings for video one ($M = 10.64, SD = 3.35$) were significantly different from behavior ratings for video two ($M = 13.51, SD = 3.76$), $t(74) = -7.62, p < .01$. Therefore, behavior ratings from video one and video two could not be combined for an overall composite. Tolerance ratings

from the two videos also had a strong, positive correlation, $r(71) = .73, p < .01$. However, a two-tailed, paired-samples t-test on tolerance ratings, showed that participants' tolerance ratings for video one ($M = 7.47, SD = 3.42$) were significantly different from tolerance ratings for video two ($M = 6.37, SD = 3.05$), $t(72) = 3.90, p < .01$. Therefore, tolerance ratings from video one and video two could not be combined for an overall composite.

TABLE 1
SAMPLE SIZES, MEANS, AND STANDARD DEVIATIONS FOR BEHAVIOR AND TOLERANCE RATINGS BY LABEL GROUP AND VIDEO

Dependent variable	Video One		Video Two	
	<i>n</i>	<i>M(SD)</i>	<i>n</i>	<i>M(SD)</i>
Behavior Ratings				
No ADHD	20	10.30 (3.66)	20	14.60 (4.49)
Possible Moderate ADHD	21	10.67 (2.94)	21	12.81 (3.57)
Possible Severe ADHD	30	11.33 (3.10)	30	13.57 (3.17)
Tolerance Ratings				
No ADHD	20	6.40 (2.96)	20	5.70 (2.94)
Possible Moderate ADHD	21	8.67 (3.77)	21	6.95 (2.85)
Possible Severe ADHD	30	7.37 (3.33)	30	6.50 (3.31)

A two way, mixed model MANOVA, with video as the within factor, and label group as the between factor, was conducted. The two dependent measures were behavior and tolerance ratings. Preliminary assumption testing was conducted to check for multivariate normality, with no serious violations noted. Levene's tests for equality of variances found that homogeneity of variance was not violated for video one behavior ratings, $F(2, 68) = .64, p = .53$, for video two behavior ratings, $F(2, 68) = 1.11, p = .34$, video one tolerance ratings, $F(2, 68) = .33, p = .72$, or video two tolerance ratings, $F(2, 68) = .89, p = .42$. A Box's M test for equality of covariance

matrices found that homogeneity of covariance matrices was not violated, $F(20, 13185.82) = 1.47, p = .08$.

Multivariate analyses found a significant main effect of video, $F(2, 67) = 28.63, p < .001$, Wilks' Lambda = .54, partial eta squared = .46. No significant main effect of label group was found, $F(4, 134) = .97, p = .43$, Wilks' Lambda = .95, partial eta squared = .03. A significant interaction between video and label group was found, $F(4, 134) = 2.60, p = .04$, Wilks' Lambda = .86, partial eta squared = .07. The observed power for the between subjects factor, label group, and the within subjects factor, video, equaled .30 and 1.00, respectively. The observed power for the interaction effect equaled .72.

Considering the significant main effect of video, a univariate test showed a significant effect of behavior ratings, $F(1, 68) = 55.99, p < .001$, partial eta squared = .45, power = 1.00. Examination of the mean ratings indicated that behavior ratings on the ADHD scale were slightly higher for video two ($M = 13.51, SD = 3.76$) than for video one ($M = 10.48, SD = 3.52$). A univariate test of tolerance ratings was also significant, $F(1, 68) = 14.05, p < .001$, partial eta squared = .17, power = .96. Mean ratings indicated that tolerance ratings were slightly lower for video two ($M = 6.49, SD = 3.20$) than for video one ($M = 7.65, SD = 3.75$).

No univariate tests were investigated for label group as no significant main effect was found in the multivariate test. Based upon the significant interaction found between label group and video, a univariate test was not significant for behavior ratings, $F(2, 68) = 3.10, p = .05$, partial eta squared = .08, power = .58. A univariate test of tolerance ratings was not significant, $F(2, 68) = 1.09, p = .34$, partial eta squared = .03, power = .23.

SUMMARY AND CONCLUSIONS

SUMMARY

The primary purpose of the present study was to expand on the research of Johnson & Blankenship (1984) and examine the effects of the ADHD label bias on behavior ratings. The study also aimed to investigate differences of teacher tolerance. The hypothesis that ADHD label group would have a significant effect on behavior ratings was not supported. It was anticipated no significant difference in tolerance ratings would be found. This hypothesis was supported with regard to ADHD label group; however, an unexpected main effect of the within factor (video) was found for both tolerance and behavior ratings.

Although behavior and tolerance ratings from video one were highly correlated with video two, both ratings were found to be significantly different for the two videos. Considering this finding, each dependent measure retained two separate ratings (one for each video). A two way, mixed model MANOVA, with video as the within factor, and label group as the between factor, confirmed the difference of the videos. It is cautioned that video was a repeated measure; therefore sample size increased and the observed power was extremely large. When the results of behavior and tolerance ratings were examined separately, both were found significant. Again, both univariate analyses had an extremely large observed power.

Additionally, the two videos were not counterbalanced and therefore a sequence effect may have occurred. Examination of the means for each video indicated video two was rated lower for tolerance and higher for behavior ratings (i.e. more problem behavior) than video one. A more detailed look at the raw data showed interesting ratings of the last item on the ADHD rating scale (Has temper tantrums). The children were not prompted during filming to have a “temper tantrum”; however, for the first video, one participant rated the child’s behavior as having temper tantrums “almost always” and two rated the frequency as “often”. For the second

video, six participants rated the child's behavior as "almost always" including temper tantrums and 24 rated the frequency as "often". Keeping in mind the scripted nature of the videos, the difference in frequency ratings for this item between videos should be noted. It is important to also consider the uniqueness of the children. There is a possibility that some unique traits of the children were associated with the difference in ratings.

No significant main effect of ADHD existed. The original proposed analysis considered behavior and tolerance as composite scores and the a priori power analysis was calculated as such. After the data was collected, prior to major analysis, it was found that composites should not be calculated considering the significant differences between the within factor (video). This finding added repetitions to the proposed analysis for each participant and thus lowered power for the between subjects factor.

Another possible cause to the non-significant effect of label group may be the label chosen. As Rolison and Medway (1985) demonstrated, different labels may produce varying effects of bias. ADHD prevalence has increased in the recent past. Some teachers may be exposed to many children with an ADHD diagnosis on a daily basis and others may not. Perhaps familiarity with ADHD impacted ratings.

Multivariate analysis found a significant interaction between video and label group; however, the partial eta squared showed a medium effect size and univariate tests for behavior and tolerance ratings were not significant. The observed power for the individual univariate tests were lower than the multivariate analysis in which the repeated measures factor increased the sample size and therefore power. The interaction cannot be accurately interpreted considering the limitations of the findings for the within and between factors.

LIMITATIONS OF THE STUDY

The current study built upon the work of Johnson & Blankenship (1984), but was not an exact replication. Some limitations of the current study include a lack of procedures used by Johnson & Blankenship. The original study included a measure of awareness for the intent of the study. Knowledge of the study's purpose accounted for a large portion of the variance in the study. The current study did not include a similar measure. The sequence effect of videos (mentioned above) could have been the effect of knowledge of this study's purpose. Examination of the means (reference Table 1) showed the first video was rated in the direction predicted, although not significantly. The second video was not rated in the direction predicted and was not significant. Furthermore, the previous authors had each participant rate one video of a labeled child and one of a child without a label. In the current study, participants rated both children given the same label or lack of label. It is not clear whether this significantly impacted the current research. Future research may aid in the understanding of the difference between label groups versus varying label within participants. Lastly, the measure of tolerance used in the previous research was a reliable measure. The current study used a similar procedure for developing a tolerance scale; however, this scale was not tested prior to use in this study and the reliability is unknown.

An additional barrier to the present study included recruitment of participants. Approximately 300 possible participants were contacted directly by the researcher over the course of four months' time. In addition, the invitation email used to recruit participants was forwarded by contacts of the researcher and by participants themselves. Of the possible participants contacted, only 89 teachers began the survey and of those 89, 11 did not complete the survey. Another barrier was child demographics. Both children viewed in the videos were white, Caucasian males, were well groomed, and looked similar. This limits the generalizability

of the current research. Also, the demographics of the children in the videos may have impacted teachers' ratings as they may not have been representative of the population for which these teachers are accustomed to teaching. A replication of this research including a larger sample size, children of varying demographics, and/or varying diagnostic labels may yield different results.

CONCLUSION AND FUTURE RESEARCH

While limitation and barriers exist for the current study, important implications for future research were found. First, the unpredictable findings illustrate the complexity of perception and bias. Perhaps a diagnostic label alone does not produce bias, but future research may investigate label bias combined with other demographic factors. Furthermore, there is a need for additional research exploring tolerance levels of teachers and how that impacts perception, expectations, referral rates, and treatment of children for which a low tolerance exists. Finally, the findings of this study show that while a labeling bias may occur for some diagnostic labels, the same may not be true for others. Regardless of a diagnostic label, unique traits of both the individual being rated and the individual rating will have some impact on results.

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APPENDIX A

CONSENT FOR PARTICIPATION

This survey is part of a Master's Thesis project for a graduate student at Louisiana State University. It will take you approximately 15 minutes to complete. You may monitor your progress by viewing the progress bar above.

Below is an overview of the survey.

- Demographic form.
- Read a short description of two children you will watch in videos.
- Watch one 3 minute video of a child.
- Rate that child's behavior on a short rating scale.
- Watch a second 3 minute video of a child.
- Rate that child's behavior on a short rating scale.
- Answer a follow up question.
- Enter for a chance to WIN!
 - There will be a drawing for two \$50 Visa gift cards. Participants that win will be notified by email after all surveys have been completed.

Participants will be approximately 90 teachers from various parishes in southern Louisiana. No names or identifying information will be taken for the privacy of the participants. There is no known risk involved in participation and no penalty for not participating. If you have any questions please contact the researcher, Jessica Rodriguez at jrodr24@gmail.com/ (504)615-5077 or Jessica's Supervisor, Dr. Frank M. Gresham at Gresham@lsu.edu/ (225)578-4663.

By selecting "I Agree" below, you are consenting to participate in this study. If you give your consent to participate you may still decide not to participate at any time.

If you have any additional questions about your rights or other concerns, please contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225)578-8692, irb@lsu.edu, www.lsu.edu/irb.

- I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form.
- I do not agree to participate in the study described above.

APPENDIX B

DEMOGRAPHIC FORM

Gender

- Male
- Female

Age

- 20-25
- 26-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71+

What Parish/County do you currently work in? _____

How much experience do you have as a teacher?

- Less than 1 year
- 1-5 years
- 6-10 years
- 10-20 years
- More than 20 years

Please list the grade levels you have taught: _____

What is your highest level of education?

- Certification
- Bachelor's Degree in Education
- Bachelor's Degree in field other than Education
- Master's Degree in Education
- Master's Degree in field other than Education
- Ph.D. in Education
- Ph.D. in field other than Education
- Other (please specify) _____

Please list all areas of certification/specialties: _____

Please list degree(s) and/or certification(s) you are currently working toward (if applicable):

APPENDIX C

NO ADHD VIGNETTE

Both of these children are boys, in 5th grade, at R. Buras Elementary. You will now watch and rate one video for each child during math instruction.

APPENDIX D

POSSIBLE MODERATE ADHD VIGNETTE

Both of these children are boys, in 5th grade, at R. Buras Elementary. It is possible that both of these children have exhibited moderate symptoms of hyperactivity and inattention that may lead to an ADHD diagnosis. You will now watch and rate one video for each child during math instruction.

APPENDIX E

POSSIBLE SEVERE ADHD VIGNETTE

Both of these children are boys, in 5th grade, at R. Buras Elementary. It is possible that both of these children have exhibited severe symptoms of hyperactivity and inattention that may lead to an ADHD diagnosis. You will now watch and rate one video for each child during math instruction.

APPENDIX F

PARENTAL CONSENT FOR PARTICIPATION

Effect of Labeling Bias on Ratings of ADHD Symptoms

Dear Parent,

We request your permission to work with your child as part of a research project for a Master's thesis. If you consent, your child will be coached to act out a classroom with the help of graduate students in a simulated classroom setting at school. This process will be recorded and a 3 minute video will be made for each boy participating. This video will be uploaded and used in an online study. Only participants in the study and will be allowed to access the video with a code sent to them via email. Once a participant has completed the study, they are not able to go through the online survey a second time.

Participants will be 90 teachers in East Baton Rouge, Lafourche, and Terrebonne Parish, Louisiana. Participants will be told that the children in the videos may have no symptoms, mild symptoms, or severe symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD). All participants will rate the behavior of the children they watched in the videos. The goal of this study is to determine whether informing educators that a child may have ADHD will affect the way that person views the child's behavior. No real names or identifying information of the boys will be used and videos will be stored in a secure location, in the investigator's office, on the LSU campus. There is no known risk involved in participation.

The boys that act for the videos will each receive a \$10 gift card to Baskin Robbins. Following the study, results will be sent to the children and parents or guardians of the children.

All students working with the children will be supervised by Dr. Frank Gresham, a faculty member with the School Psychology Program. You may withdraw your son from this study at any time.

If you have any questions please contact Jessica Rodriguez (the researcher) or Dr. Gresham (Jessica's supervisor). We look forward to working with your child.

Sincerely,

Jessica Rodriguez
Researcher
Louisiana State University
504-615-5077
Jrodr24@gmail.com

Frank M. Gresham, Ph.D.
Professor
Louisiana State University
225-578-4663
Gresham@lsu.edu

Student: _____

_____ I give my permission for my child to participate in this study.

_____ No, I prefer that my child not participate in this study.

Parent/Guardian: _____ (print)

Signature: _____ Date: _____

Daytime Phone Number: _____ Evening Phone Number:

E-mail: _____ (if this is an effective way to reach you)

If you have any additional questions about your son's rights or other concerns, please contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225)578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.

APPENDIX G

ASSENT FORM

My name is Ms. Jessica. I am trying to find out what teachers will say about children's behavior if I tell them that the children may be hyper and have trouble paying attention. If you would like, you can be in my study.

If you decide you want to be in my study, you will pretend like you are in class, and you will act out a scene while my friends and I video you. I will tell a group of people that you may be hyper and have trouble paying attention and they will watch your video. The people will say what they think about your behavior in the video. I will not tell them your name or what school you go to.

When it is over I will send you and your parents or guardians a letter telling you what the people said about the video so that you can know what happened in the study.

If you help me, I will give you a \$10 gift certificate to Baskin Robbins.

Your parent or guardian must also say it's OK for you to be in the study. If you don't want to be in the study, no one will be mad at you. If you want to be in the study now and change your mind later, that's OK as well. You can stop at any time.

My telephone number is 504-615-5077. You can call me if you have questions about the study or if you decide you don't want to be in the study any more.

I will give you a copy of this form in case you want to ask questions later.

Agreement

I have decided to be in the study even though I know that I don't have to do it. Jessica has answered all of my questions and I understand what I have to do to be part of the study.

Participant

Age

Signature of Study Participant

Date

Signature of Researcher

Date

APPENDIX H

MASTER OBSERVATION FORM

1 0:00	2 0:05	3 0:10	4 0:15	5 0:20	6 0:25	7 0:30	8 0:35	9 0:40	10 0:45	11 0:50	12 0:55
13 1:00	14 1:05	15 1:10	16 1:15	17 1:20	18 1:25	19 1:30	20 1:35	21 1:40	22 1:45	23 1:50	24 1:55
25 2:00	26 2:05	27 2:10	28 2:15	29 2:20	30 2:25	31 2:30	32 2:35	33 2:40	34 2:45	35 2:50	36 2:55

APPENDIX I

OBSERVATION FORM

Observer: _____

Each observation is a total of 3 minutes. At the end of each 5-second interval, mark 'O' if the student is on-task, 'X' if the student is disruptive, or 'I' if the student is inattentive, but non-disruptive.

Operational Definitions:

X - Disruptive: Defined as talking out, making noise, out of seat, and disturbing or touching others (unless it is part of the class activity).

I - Inattentive but non-disruptive: Defined as not attending to the instruction. An example is fidgeting or other behaviors that would not be considered on task, but do not cause distraction to other students or the teacher (in seat, not making noise).

O - On task: Non-disruptive and attending to instruction.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36

Observer 1

O: _____

I: _____

X: _____

Master Form

O: _____

I: _____

X: _____

Agreement

_____ %

_____ %

_____ %

Total number of agreements _____ / 36 = _____ %

APPENDIX J

RATING SCALE

Please read each item and think about this student's behavior in the video you have just viewed. Then, decide how often this student displayed the behavior and how much you would tolerate this behavior in your classroom.

Please mark every item. In some cases, you may not have observed this student perform a particular behavior. If you are uncertain of your response to an item, give your best estimate. There are no right or wrong answers.

- | | | | | | | | | |
|---|-----------------------|-------|-----------------------|--------|-----------------------|-------|-----------------------|---------------|
| 1. Acts without thinking: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| 2. Fidgets or moves around too much: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| 3. Breaks into or stops group activities: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| 4. Is inattentive: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| 5. Gets distracted easily: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| 6. Has difficulty waiting for turn: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| 7. Has temper tantrums: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |
| I would tolerate this behavior: | <input type="radio"/> | never | <input type="radio"/> | seldom | <input type="radio"/> | often | <input type="radio"/> | almost always |

APPENDIX K

FOLLOW UP QUESTION

You have indicated you know one or both of the children in the videos you viewed today.

Which child did you know? _____

How do you know him? _____

How long have you known him? _____

APPENDIX L

THANK YOU PAGE

Thank you for your participation in this study, it was greatly appreciated. The two winners of the \$50 Visa gift cards will be emailed after all participants have completed the study. For a chance to win please enter your preferred email address below.

A summary and the results of this study will be sent to the email address you provided above after the study is completed. Please indicate below if you would not like to receive this information. If you do not respond, the summary and results will be automatically sent.

*Your email will not be used for SPAM or any additional survey requests. Gift card winners and requests for summary/results are the only communications you may receive.

- Yes, please send me the summary and results of this study.
- No, I would not like the summary and results of this study.

ONCE AGAIN, THANK YOU FOR YOUR PARTICIPATION!

Please send questions or comments to directly to my email jrodr24@gmail.com.

Sincerely,
Jessica Rodriguez

VITA

Jessica Lynne Rodriguez was born and raised in New Orleans, Louisiana. She attended Louisiana State University from 2004-2008 where she received her degree of Bachelor of Science in Psychology. She then began a degree in Master of Art in school psychology in 2008 at her Alma Mater, under Dr. Frank M. Gresham. Under Dr. Gresham's supervision, Jessica worked with many teachers, faculty, and children in the Baton Rouge area. After course requirements were completed for the Master of Art degree, she began a third degree in the School Psychology Specialist Program at Nicholls's State University in Thibodaux, Louisiana. Upon graduating from both Louisiana State University and Nicholl's State University, Jessica plans to pursue a career as a school psychologist in the New Orleans area to serve the children from her hometown.