Positive Illusory Bias in Adolescents with ADHD: Examination of the Likert-Scale Hypothesis

Angela Varma, M.A., Natalie Muradian, Judith Wiener, Ph.D., C. Psych.
Ontario Institute for Studies in Education/University of Toronto

Background & Objectives

Considerable research indicates that 7 to 12 year old children with ADHD underestimate their behavioral difficulties relative to parent and teacher reports; this underestimation of difficulties is known as a “positive illusory bias” (PIB). The PIB has frequently been demonstrated in studies requiring children with ADHD to provide severity ratings of their difficulties on standardized likert-scales. Responses on such scales typically range from 0 (never a problem) to 3 (very often a problem). The possibility that the PIB may be related to difficulty with completing such likert-scale questions has not been examined. In addition, the persistence of the PIB in adolescents with ADHD has not been established.

Therefore, the current study objectives were:
1) To investigate whether the PIB continues to be present in adolescents with ADHD.
2) To examine if the PIB in adolescents with ADHD may be reduced using an alternative measurement strategy that does not require likert-scale ratings.

Determining the presence of a continued PIB in adolescence may impact treatment decisions. Clinicians may need to increase awareness of behavioral problems to obtain better responsiveness to treatment if youth with ADHD continue to have a PIB, but this increased awareness may harm self-esteem. However, if adolescents with ADHD no longer have a PIB or if the PIB is an artifact of likert-scale measurement, clinicians may increase awareness without concern about harming adolescents’ self-esteem.

Methodology

Sample
N = 34 (17 ADHD, 17 Comparison) Age = 13-17 years Gender = Male

Measures

Conners’ Rating Scales-Revised (CRS-R): The CRS-R are norm-referenced, standardized likert rating scales commonly used in clinical and research settings to screen for ADHD symptoms. In the present study, the parent, teacher, and adolescent self-report forms (i.e., CPRS, CTRS, and CASS) were administered to obtain ratings of adolescents’ inattention, hyperactivity/impulsivity, oppositionality, anxiety, and cognitive problems.

Alex: The Alex is a structured picture-based questionnaire used to identify problem behaviors in adolescents. It consists of 77 pictures of an adolescent, Alex, appearing to be 15 to 16 years of age, displaying behaviors characteristic of ADHD and of common comorbid disorders. Pictures are presented serially and participants are asked whether they “are like Alex” (YES/NO). This response format simply requires adolescents to acknowledge the presence of a problem.

Advantages: Pictures “normalize” behaviors & reduce processing demands

Results

Objective 1: Do Adolescents with ADHD have a PIB?

Parent-Adolescent Discrepancy Ratings

Figure 1. A series of independent t-tests were conducted between ADHD & Comparison parent-adolescent subscale discrepancy ratings. The Heats were significant for all subscales, p < .001, with the exception of Oppositionality.

Teacher-Adolescent Discrepancy Ratings

Figure 2. A series of independent t-tests were conducted between ADHD & Comparison teacher-adolescent subscale discrepancy ratings. The Heats were significant for all subscales, p < .001, with the exception of Oppositionality.

Objective 2: Can the PIB be Reduced Using Alternative Measures?

Acknowledgement of ADHD Behaviors

Figure 3. Independent t-tests between ADHD & Comparison youth indicated that adolescents with ADHD continue to underestimate their ADHD behaviors on both standardized and pictorial measures, p < .01.

Procedure

Participants for the study were recruited through flyers and pamphlets distributed in the community, word of mouth, newspaper advertisements placed in a local newspaper, and from a list of participants from our previous studies who agreed to be contacted for future research. Adolescents completed questionnaires in individual testing sessions at OISE/UT with a graduate student. Questionnaires were mailed to parents and teachers.

Data Analysis

In order to determine if adolescents with ADHD (relative to Comparison adolescents) have a PIB, adolescent ratings were compared to parent & teacher ratings of their behavioral problems on the standardized likert-scale measures. The PIB was quantified by employing discrepancy analyses. Discrepancy scores were computed by subtracting adolescent self-report ratings from parent ratings (CPRS minus CASS) and from teacher ratings (CTRS minus CASS) for the following subscales: Cognitive Problems, Hyperactivity, Anxiety, Oppositionality, DSM Inattention, and DSM Hyperactivity. A larger discrepancy score reflects a greater PIB (see Figures 1 and 2 for results).

After confirming the presence of a PIB on the standardized likert-scales, additional analyses were computed to determine if the PIB could be reduced using the alternative pictorial measure. Adolescents’ acknowledgement of ADHD behaviors [NO = 0, YES = 1] on the pictorial measure were compared to parent and teacher ratings on the standardized scales.

Likert-scale ratings on the standardized measures were dichotomized to code for acknowledgement of problems: 0 = NO 1 = YES

Adolescent ratings should not differ from parent & teacher acknowledgement ratings if the pictorial measure reduces the PIB (see Figure 3 for results).

Discussion & Clinical Implications

The results of this investigation indicate that adolescents with ADHD relative to Comparison youth underestimated their inattention, hyperactivity, oppositionality, anxiety symptoms, and cognitive problems compared to parent & teacher ratings on standardized likert-scales. Furthermore, adolescents with ADHD continued to underestimate their ADHD behaviors on an alternative pictorial measure that eliminated likert-scale ratings. Taken together, these results indicate that youth with ADHD continue to have a PIB in adolescence, and this PIB is not an artifact of likert-scale measurement.

The present results have implications for assessment & treatment of youth with ADHD. Since adolescents with ADHD underestimate their difficulties, it is questionable whether their self-report ratings should be used in psychological assessments. In terms of treatment, clinicians may need to make youth with ADHD more aware of their behavioral problems. However, treatment may need to be approached cautiously, as increasing levels of awareness may harm self-esteem.

References