



PAY ATTENTION!!!

Screening for Attention Deficit Hyperactivity Disorder in College Students

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"Imagine living in a fast-moving kaleidoscope, where sounds, images, and thoughts are constantly shifting. Feeling easily bored, yet helpless to keep your mind on tasks you need to complete. Distracted by unimportant sights and sounds, your mind drives you from one thought or activity to the next. Perhaps you are so wrapped up in a collage of thoughts and images that you don't notice when someone speaks to you" (Sharyn, 1994).

This description is what 3 – 5% of all children feel like, with approximately three times the number of boys being affected. These children are dealing with Attention Deficit Hyperactivity Disorder (ADHD). ADHD is a disorder with no physical signs. It can only be identified by looking for certain behaviors. These behaviors are characterized by inattentiveness (e.g., failing to complete assignments), impulsivity (e.g., interrupting conversations), and hyperactivity (e.g., always in motion, restless, fidgeting). The diagnostic subtypes are predominantly inattentive, predominantly hyperactive/impulsive, and combined inattentive and hyperactive/impulsive.

For years ADHD was considered a childhood diagnosis that was outgrown. However, in recent years many late adolescents and adults have sought help for ADHD. It has been estimated that 40-80% of children with ADHD continue to experience symptoms into late adolescence and adulthood. The Diagnostic and statistical manual of mental disorders (DSM-IV: APA, 1994) criteria requires the same number of symptoms for the diagnosis regardless of age. However, college students (the focus of this research) were not even included in the DSM-IV field trials. Given the increasing number of college students seeking ADHD evaluations (at one large southwestern university the number of students receiving services for ADHD has increased 150% in the past 3 years and the number requesting evaluations for ADHD has increased 300%) and mandates for colleges and universities to provide services, studies providing evidence for the validity of the DSM-IV criteria with college students are needed.

Smith and Johnson (in press) investigated the dimensionality of the 18 DSM-IV symptoms in a college sample us-

ing The Adult Behavior Checklist (ABC: Johnson & Lyonfields, 1995). The ABC is a self-report assessment that is designed to screen for ADHD as defined by the DSM-IV criteria. The symptoms were reworded in order to allow participants to rate the overall frequency of their behavior. Results of the Smith and Johnson investigation led the researchers to conclude that 15 of the 18 symptoms could be used to reflect the hypothesized dimensions of inattention and hyperactivity/impulsivity.

Should you be evaluated for ADHD?

Using the inattentive items from the ABC, the following is a demonstration of how a qualified individual may use the ABC to decide whether or not you should receive a more extensive evaluation. For each item in Table 1, begin by asking yourself "During the past six months ...". If you feel that the behavior NEVER occurs, give yourself a '1' for that item, if you feel the behavior SOMETIMES occurs, give yourself a '2', if the behavior OFTEN occurs a '3', and if the behavior occurs VERY OFTEN, a '4'. Repeat this process for all nine items addressing inattentiveness and add the resulting values. Using Table 2, which is a raw score to measure conversion table provided courtesy of BIGSTEPS (Linacre & Wright, 1995), find the value of your raw score under the column labeled 'Score.' Find the corresponding linear measure under the column labeled 'Measure'. This value represents the estimated amount of the latent trait 'inattentiveness' which you possess. Is this value high enough to warrant a full evaluation? The current cutoff for further evaluation corresponds to a measure of .39 logits (i.e., the measure corresponding to a raw score of 25 minus one standard error). If your estimated measure is greater than or equal to .39 logits, you may be a candidate for further evaluation. If your measure is below .39 logits, add the standard error corresponding to your estimated measure (found in the column labeled 'S.E.') to your estimated measure. This attempts to account for chance fluctuations in the estimation of your 'inattentiveness' measure. If this value is greater than or equal to .39, you may be referred for a more comprehensive evaluation.

Table 1**Item content of the Adult Behavior Checklist**

- Item 1 - You fail to pay close attention to details or make careless mistakes in school, at work, etc.
 - Item 2 - You have difficulty sustaining your attention to tasks or in play activities.
 - Item 3 - You do not listen when directly spoken to.
 - Item 4 - You do not follow through on instructions and fail to finish schoolwork, chores, work duties, etc.
 - Item 5 - You have difficulty organizing tasks and activities.
 - Item 6 - You avoid, dislike, or are reluctant to engage in tasks that require sustained mental effort (e.g., homework or schoolwork).
 - Item 7 - You lose things necessary for tasks or activities (e.g., books, school assignments, tools or keys).
 - Item 8 - You are easily distracted by extraneous stimuli (e.g., traffic noises, conversations, or looking out the window).
 - Item 9 - You are forgetful in daily activities.
 - Item 10 - You have difficulty playing or engaging in leisure activities quietly.
 - Item 11 - You are "on the go" or act as if "driven by a motor".
 - Item 12 - You talk excessively.
 - Item 13 - You blurt out answers before questions have been completed.
 - Item 14 - You have difficulty awaiting your turn.
 - Item 15 - You interrupt or intrude on others (e.g., butt into conversations or activities).
- Note:** Items 1 through 7 are for the inattentive dimension; items 8 through 15 are for the hyperactive/impulsive dimension.

of other conditions (e.g., depression, anxiety, substance abuse) is also necessary.

Information has been provided for the inattentive set of items from the ABC. Comparable information for the hyperactivity/impulsivity dimension was not provided, as the intent of this article is not to promote self-diagnoses of ADHD, but rather to demonstrate some of the potential benefits of Rasch measurement. Further benefits of Rasch measurement would be realized when gauging the progress (i.e., comparison of pre/post measures) of therapy. In this situation, Rasch measurement would provide the interval level measures necessary for arithmetic operations and many statistical methods. The method presented in this article fails to directly take into account the influence of outlying and extreme responses on the measurement process. See Linacre (1997) for the use of expected score maps to handle these situations. Interested readers and researchers may contact the author for additional information on the ABC and its current state of development. A comprehensive on-line source is also available from the National Institute of Mental Health at <http://www.nimh.nih.gov/publicat/adhd.htm>.

Table 2**Raw score to linear measure conversion table**

SCORE	MEASURE	S.E.	SCORE	MEASURE	S.E.	SCORE	MEASURE	S.E.
9	-5.47E	1.47	19	-.62	.55	29	1.69	.47
10	-4.69	1.08	20	-.33	.53	30	1.92	.49
11	-3.82	.82	21	-.07	.51	31	2.17	.51
12	-3.24	.72	22	.18	.49	32	2.45	.55
13	-2.77	.66	23	.42	.48	33	2.78	.61
14	-2.35	.63	24	.64	.47	34	3.23	.73
15	-1.97	.61	25	.85	.46	35	3.95	1.01
16	-1.61	.60	26	1.06	.46	36	4.66E	1.42
17	-1.26	.58	27	1.27	.46			
18	-.93	.57	28	1.48	.46			

Note: Calibration based on 1503 participants.

Discussion

Simple, inexpensive, and efficient screening assessments such as the ABC are useful for an initial diagnosis of ADHD. However, only a comprehensive ADHD evaluation done by a trained professional (e.g., a psychiatrist, psychologist, pediatrician, or neurologist) can yield more definitive evidence of an ADHD diagnosis. This type of evaluation may include a review of medical, family, and academic records as well as formal assessments of intelligence, memory, and attention/concentration. In addition, the behavioral symptoms need to be confirmed with someone familiar with the individual's behavior (e.g., spouse, parents, roommates). Careful consideration

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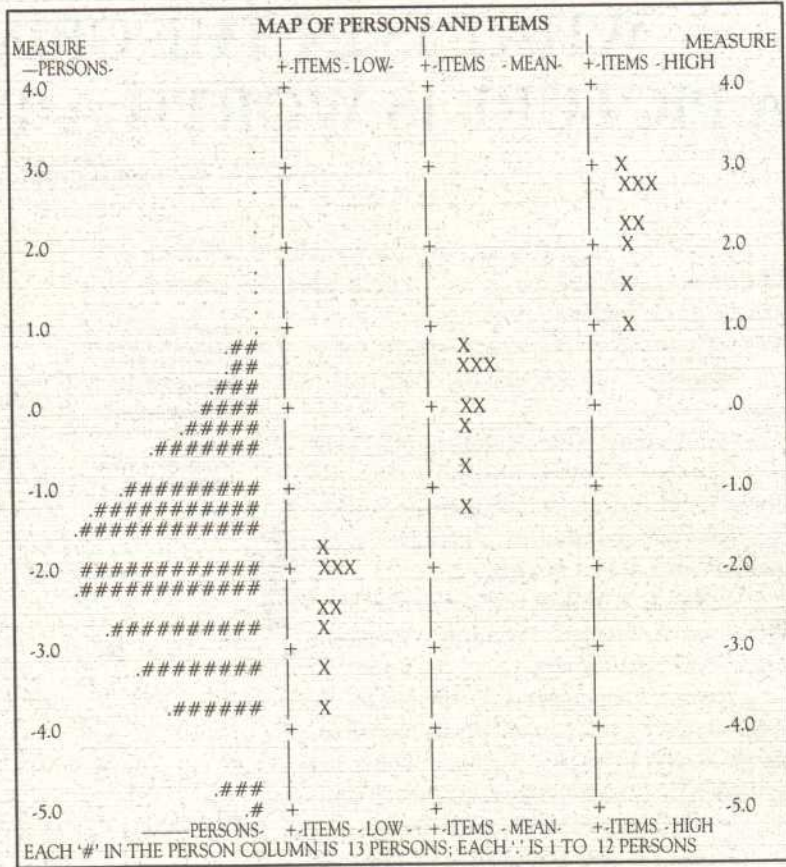
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Applications of objective measurement in cognitive and counseling psychology. Specific interest in the measurement and application of social cognitive constructs.

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Tennis, mountain biking, and spending time with my golden retrievers, Calvin and Hobbes (and yes, they unfortunately behave like the comic strip characters).

