A Comparison of the BASC and the CBCL With Referred Preschoolers

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A COMPARISON OF THE BASC AND THE CBCL WITH REFERRED PRESCHOOLERS

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By
Kristina J. Sidebottom

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A COMPARISON OF THE BASC AND CBCL WITH REFERRED PRESCHOOLERS

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Thesis Director note. This thesis research project was completed in collaboration with Sara Murphy. Thus, this thesis and Murphy’s (2005) thesis contain the same literature review and methodology. Results are presented using the same structure.
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Behavior rating scales, such as the Behavior Assessment System for Children ([BASC] Reynolds & Kamphaus, 1998) and the Child Behavior Checklist ([CBCL] Achenbach & Rescorla, 2000), are often used to assess social and emotional behavior problems. Although a substantial amount of research exists on the previous version of the BASC/6-18 and CBCL/4-18, little research exists on the latest preschool versions of the BASC/2.5-5 and CBCL/1.5-5. The current study examined the overall consistency between the latest BASC and CBCL preschool versions.

A sample of 50 parents of preschool-aged children referred for a developmental evaluation participated in this study by completing both the BASC and CBCL on their children. Mean scores, correlations, and standard score differences were examined for 13 corresponding scales on the BASC and CBCL. The results indicated that the BASC and CBCL did not always produce consistent results within a group of referred preschoolers. Overall, more research needs to be conducted regarding the reliability and validity of the preschool versions of the BASC and CBCL.
Introduction

Many children experience symptoms of social and emotional behavior disorders. These disorders, which are often classified as externalizing problems or internalizing problems, are prevalent among children, including preschoolers. Externalizing disorders are estimated to be quite common in childhood. According to the Diagnostic and Statistical Manual of Mental Disorders 4th Edition ([DSM-IV] APA, 1994), an estimated 3-5% of children exhibit symptoms of Attention Deficit Hyperactivity Disorder, 2-16% of children exhibit symptoms of Conduct Disorder, and 2-16% of children exhibit symptoms of Oppositional Defiant Disorder. Estimates for the occurrence of internalizing disorders in children may not be as accurate due to limited research on internalizing disorders of children (Merrell, 2003). Researchers such as Costello (1989) reported high numbers of children presenting with internalizing disorders. Costello estimated that up to 5.9% of children are affected by depression and that 8.9% are affected by anxiety disorders. Research has indicated that children who are identified as having social and emotional behavior problems in preschool will most likely continue to experience these same problems into childhood and adolescence (Campbell, 1995; Fisher, Rolf, Hasazi, & Cummings, 1984; Stormont, 2000). Due to high numbers of children with disorders and persistence of the disorders, methods of early identification should be studied and, if necessary, improved in order to better measure the social and emotional problems of preschool-aged children.
There are many types of assessment tools available for measuring social and emotional behavior, such as behavior observations, interviews with teachers and/or parents, record reviews, and behavior rating scales. Behavior rating scales have flourished in becoming the standard method in identifying at-risk and problematic behaviors of school aged children. The *Behavior Assessment System for Children* ([BASC] Reynolds & Kamphaus, 1998) and the *Child Behavior Checklist* ([CBCL] Achenbach & Rescorla, 2000) have become two of the most prominent behavior rating scales because of their excellent reliability and validity within the school aged population (Merrell, 2003; Merrell, Streeter, Boelter, Caldarella, & Gentry, 2001). Recently, both scales were revised and the age ranges were extended downward to include younger preschool-aged children. However, little research has been conducted on the validity of the new preschool versions of these scales.

This researcher seeks to determine whether the BASC and CBCL are consistent measures of social and emotional problems in preschool-aged children. Scores from the scales on the CBCL will be compared to the scores on the corresponding scales on the BASC using a sample of referred preschoolers. Referred preschoolers are children that have been referred by their parents for an evaluation because of behavioral or developmental concerns. For the purpose of this study, a referred child is precisely the one for whom a behavior rating scale would be completed.
Literature Review

Social and emotional behavior problems evident in preschool children are likely to remain constant over childhood and into adulthood (Gimpel & Holland, 2003). The knowledge that lifelong problems are evident in preschool children emphasizes the importance of detecting social and emotional behavior disorders early in order to increase the chances of successful intervention (Gimpel & Holland, 2003). The National Association of School Psychologists (NASP) noted that the preschool years are the most important time to identify problems because early intervention efforts are likely to increase the success of interventions (NASP, 1991). NASP also indicated that there is a shortage of sufficient assessment instruments to measure preschool behavior. Many factors may contribute to the shortage of preschool assessment instruments and to the overall difficulty of assessing social and emotional behavior.

Determining what is considered “normal” behavior for preschoolers can be more challenging than evaluating the behavior of older children. One reason is that the range of normal behavior is much broader within the preschool years than the typical range of normal behavior for school-aged children (Keith & Campbell, 2000). Additionally, Keith and Campbell stated that due to limited cognitive and language abilities of preschoolers, it is more difficult to accurately assess their social and emotional behavior. Preschoolers have a limited ability of expressing thoughts and feelings to an interviewer. Thus, social and emotional problems are difficult for professionals to accurately identify and describe (Keith & Campbell, 2000). In contrast, a physical disability is much easier to identify
and describe than the social and emotional functioning of a child. Because of the
difficulties inherent in preschool social and emotional behavior assessment, it is
imperative that more research is conducted in order to determine effective assessment
methods.

*Behavior Rating Scales*

While there are many methods for assessing social and emotional functioning in
children, behavior rating scales have become a standard method in the assessment of
social and emotional behavior. Behavior rating scales have become widely used by
school psychologists because of many advantages. For example, Merrell (2003) stated
that these scales are important tools that can be used within the child’s natural
environment to provide norm-referenced data. These data are helpful in supplementing
interview and observation information. Behavior rating scales are to be completed by
informants who know the child well and, therefore, can provide firsthand information
regarding their behaviors.

According to Keith and Campbell (2000), there are several purposes for using
behavior rating scales: (a) screening, (b) obtaining diagnostic data, (c) formulating
interventions, and (d) forming the basis for future research. Technology and research
have improved the reliability and validity of behavior rating scales, making them more
reliable than interviews or other techniques such as projective-expressive methods
(Merrell, 2003). Merrell also noted that behavior rating scales are useful with young
children, such as preschoolers, who cannot provide certain information regarding their
own social and emotional development. However, NASP (1991) stated caution should be
used when interpreting the results of standardized assessments used with young children attributable to less accurate predictive ability.

Despite the many advantages of using behavior rating scales in measuring children's social and emotional behavior, there are a few limitations in using these scales. Merrell (2003) stated that behavior rating scales can be problematic because they do not provide any actual observation data, and they rely on the reports of others. Strictly relying on different informants can be problematic in that each informant may interpret behaviors differently, and therefore rate the child's behaviors differently (Keith & Campbell, 2000). Merrell (2003) explained that situational variance can also be a factor in using behavior rating scales to measure social and emotional behavior. Informants in different situations or settings may rate behaviors differently due to the child's actually behaving differently in those situations. Another limitation of relying on behavior rating scales is simply that a child's behaviors can change over time, especially a young child. Behavior rating scales only provide an account of the child's behaviors within recent months. Merrell also pointed out that the informant's ratings of the behaviors may change over time due to attitude changes. Lastly, he indicated that another problem of using behavior rating scales is that different scales may measure related or similarly named constructs in different ways. For example, it may not be appropriate to compare the BASC's (Reynolds & Kamphaus, 1998) Attention Problems scale with the CBCL's (Achenbach & Rescorla, 2000) Attention Problems scale because the two scales may actually measure slightly different constructs despite having the same name.

It is evident that behavior rating scales have both advantages and disadvantages. But what do they actually measure? Rating scales are designed to produce a profile of a
child’s level of functioning across various situations by various people relevant in the child’s life. Some rating scales are considered “narrowband” and are intended to measure only one specific problem area such as a child’s attention problems. Other rating scales, known as “broadband” scales, yield a much more comprehensive assessment of a child’s overall level of social and emotional functioning in a variety of problem areas (Keith & Campbell, 2000). Broadband behavior rating scales, such as the CBCL and BASC, are typically developed with the intent to measure two domains: internalizing and externalizing problems (Eckert, Dunn, Guiney, & Codding, 2000).

**Internalizing and Externalizing Domains**

Many psychologists utilize behavior rating scales to help identify children with either internalizing or externalizing problem behaviors. The system of utilizing broadband rating scales to measure behaviors on a continuum of externalizing and internalizing disorders is the most widely recognized method of measuring social and emotional disorders (Albano, Chorpita, & Barlow, 1996). Internalizing behaviors are typically seen as overcontrolled behaviors, while externalizing behaviors are viewed as undercontrolled (Merrell, 2003). Internalizing problems are typically covert problems, which are not easily observed by others and are manifested by internal feelings (Sattler, 2002). This quality makes it more difficult for assessment instruments to accurately identify them. Some internalizing problems that may be found in children include social withdrawal, depression, anxiety, and somatic complaints. Such problems can create extreme stress for a child, but may not initially create problems for others (e.g., teachers) involved in the child’s life due to the subtlety of symptoms (Sattler, 2002).
Externalizing problems are at the opposite end of the continuum from internalizing disorders. Externalizing problems are displayed as overt behavioral problems that may emerge as an excess in an activity or as an obvious social/emotional disturbance (Sattler, 2002). Some externalizing problems that may appear in children include aggression, hyperactivity, and antisocial personality traits. Specific disorders that are typically seen in children with externalizing problems are Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), and Oppositional Defiant Disorder (ODD). Externalizing problems, unlike internalizing, are typically very distressing to everyone that is involved in the child’s life and are more easily recognized for this reason (Sattler, 2002). Since the behaviors are more easily observed, it may be easier to use behavior rating scales to identify these behaviors as opposed to internalizing behaviors.

Due to the fact that internalizing disorders are difficult to recognize and assess in young children, professionals are challenged in determining how severe the problems are and how stable over time the problems persist. Because of this uncertain stability of internalizing disorders, past research has primarily focused on externalizing behaviors. Externalizing disorders may also have more empirical research because of a higher likelihood of referrals to special education and other mental health agencies resulting from noticeable behavior patterns.

The externalizing domain, however, is not universally accepted as an all-encompassing model. Some researchers think that the externalizing domain is composed of different disorders that only share some characteristics. For example, Stormont (1998) stated that the externalizing domain may be too broad and may encompass
disorders that have varying causes and outcomes. She suggested separating the 
externalizing domain into two separate subdomains, such as aggression and hyperactivity, 
attributable to such differing etiologies and prognoses. This suggested division into 
subdomains would narrow the range of behavioral characteristics which may be helpful 
for research, intervention, and diagnostic purposes.

There may also be other problems with the current method of splitting social and 
emotional problems into internalizing and externalizing domains. As noted by Merrell 
(2003), some studies showed that problems associated with the two domains may co-
occur more frequently than previously thought. Separating and labeling all problems as 
either an internalizing or externalizing behavior may not be feasible because some 
problems may have characteristics that fit into both domains. For example, a child may 
have behavior problems that fall within the internalizing and externalizing domains. Due 
to the more overt symptoms of externalizing behaviors, the internalizing behavioral 
symptoms may be overlooked. Therefore, an accurate diagnosis may not be obtained, 
and the most effective interventions may not be implemented.

If the comorbidity rates of internalizing and externalizing problems are high, 
young children that appear to display only one disorder or problem may actually have 
multiple social/emotional behavioral problems. For example, some children may present 
symptoms of an externalizing disorder such as ODD, but may also have an internalizing 
disorder (e.g., depression) that goes unnoticed and undiagnosed. Future research should 
focus on developing techniques that better identify all of a child's social/emotional 
behavior problems (Hinshaw & Anderson, 1996).
Elliot, Busse, and Gresham (1993) suggested that one problem that may arise in using internalizing and externalizing domains for diagnostic purposes is the selection of inaccurate target behaviors during the intervention process. Rating scales inform the evaluator how far a child’s behavior is deviating from the norm but may not clearly explain what specific behavior needs to be targeted for intervention purposes. Therefore, the professional may not choose the appropriate primary target behavior resulting in unsuccessful intervention attempts.

Other problems may arise when using the externalizing and internalizing domains to assess preschoolers. For instance, the two domains do not subsume all problems that young children may encounter. Gimpel and Holland (2003) stated that a percentage of the preschool population may experience problems that do not fall into either internalizing or externalizing disorders, such as selective mutism, feeding problems, problems with sleeping, and difficulties in toileting such as enuresis and encopresis. These problems are significant but are not likely to be identified when using a broadband behavior rating scale.

Importance of Early Identification

Despite drawbacks of using the internalizing and externalizing domains for the assessment of social and emotional behavior, it is still considered to be the most reliable method of classification to date (Gimpel & Holland, 2003). Symptoms of externalizing disorders, such as ADHD and ODD, often initially appear during preschool and early elementary school years. For example, the DSM-IV (APA, 1994) stated that for a diagnosis of ADHD to be made, symptoms must appear before the age of seven. Additionally, symptoms for ODD typically emerge within or directly prior to the early
elementary school years. Therefore, there is a tremendous need to be able to accurately identify these types of externalizing disorders in children at a young age as a means of providing appropriate interventions.

The early detection of internalizing disorders is also extremely important. Attributable to a lack of research, the overall prevalence of internalizing disorders in young children is unknown. Similar to externalizing disorders, symptoms of some internalizing disorders such as Separation-Anxiety Disorder (SAD) may also appear during the preschool and kindergarten years. Although SAD is the only internalizing disorder recognized by the DSM-IV in childhood, young children may still have other internalizing problems such as depression, general anxiety disorders, phobias, and obsessive compulsive disorder (Gimpel & Holland, 2003). If these problems exist in early childhood, accurate instruments are needed to measure these behaviors.

Other studies support the importance of early detection through the use of the externalizing and internalizing domains. A study conducted by Fisher et al. (1984) examined the stability of internalizing and externalizing problems over time. Fisher et al. were able to locate 541 children between the ages of 9 and 15 who were previously assessed between the ages of 2 and 6 years with the CBCL and the Vermont Behavior Checklist. They found a moderate positive relationship (.36) between externalizing behaviors in preschool and externalizing behaviors in later school years. However, preschool internalizing behaviors were positively correlated with future internalizing behaviors for only 2-year-old females (.31), 5-year-old males (.24), and 6-year-old males (.41). Overall, this study suggested that externalizing symptoms in preschool appear to
predict externalizing behaviors in later school years for both girls and boys but little stability was evident for internalizing symptoms.

Stormont (2000) found similar results from her study, which involved assessing the correlations between internalizing and externalizing problems of 37 preschool children and their internalizing and externalizing problems five years later. The children were originally identified using the CBCL and placed into one of three groups: hyperactivity, hyperactivity and aggression, or a comparison group. Five years later, the CBCL was again used to assess these same children's internalizing and externalizing problems. Stormont found that preschoolers with externalizing problems such as hyperactivity alone and those with both hyperactivity and aggression were more likely to have more externalizing and/or internalizing problems in later school years than the control group.

Campbell (1995) provided another example that externalizing and internalizing problems that occur in preschool are likely to persist into the school years. Campbell reported on the prevalence and duration of preschool behavior problems from a longitudinal study. Campbell studied a group of 3- and 4-year-olds who were reported by their parents and teachers to have inattention, discipline problems, and overactivity. This same group of children were also assessed for problem behaviors at ages 4, 6, 9, and 13. Campbell found that at 6 years of age, 50% of those preschoolers that originally presented with externalizing disorders continued to experience the externalizing problem. At 9 years of age, 48% of the original sample still presented characteristics of an externalizing disorder. Although Campbell did not report specific numbers, she also
noted this same group of children continued to experience more behavior problems in adolescence.

Heller, Baker, Henker, and Hinshaw (1996) also looked at the presence of externalizing behaviors in 77 children over the course of their preschool through first grade years. They found that the preschoolers who were diagnosed with an externalizing problem continued to experience this disorder in the first grade. Additionally, preschool children who did not display externalizing problems as preschoolers were less likely to be diagnosed with externalizing problems in the first grade. This study supported the importance of behavior problem identification and intervention in preschool and early childhood. It also discussed the need for successful and proficient preschool assessment tools to measure social/emotional behavior problems. Additionally, these results stressed the idea that such problems can be successfully identified in preschool and are good predictors of future behavior.

Recognizing potential problematic behavior within the preschool years is essential for the prevention of future externalizing problems. Unfortunately, internalizing disorders in preschool children have been researched less; therefore less is known about the stability of the disorders over time. Overall, future studies need to attempt to discover more about the internalizing domain and interventions that are the most successful. There continues to be a dire need for more assessment tools, which focus on early identification of internalizing and externalizing disorders so early intervention can be successfully provided. Gredler (2000) emphasized that early identification aids in targeting the child's difficulties and assists in generating effective interventions. He indicated that if a child's difficulties are not identified early, the difficulties are likely to persist throughout future
school years. Additionally, Gredler stated that accurate preschool screening can lead to effective interventions or near remediation of the difficulties. Gredler concluded by stressing the importance of preschool assessment in order to prevent future developmental and learning problems.

*Preschool Assessment*

Accurate assessment of social and emotional behavior in preschoolers is important for numerous reasons. First, professionals in the field of psychology are responsible for the use of efficient measurement tools for early detection. Children who need interventions must be recognized and receive prompt assistance. A second reason for the need of accurate preschool assessment instruments is that it is extremely difficult for professionals to accurately and efficiently assess preschoolers' social and emotional behavior through observation and child interviews (Keith & Campbell, 2000). Preschoolers have immature cognitive abilities along with very spontaneous behavior from time to time. Since preschool children do not have the abilities to report their own problems accurately and their overt behavior is inconsistent, interviews and observations can be unreliable. A third reason for the need for accurate assessment is found in research conducted by Stallard (1993). She stated that approximately 50-75% of all parents with infants and young children reported being worried about their children's overall behavior. With such a large percentage of parents being concerned, it is even more important to develop appropriate instruments to accurately determine which concerns are valid and which may be typical developmental characteristics. A last reason for the importance of developing and using effective assessment measures is that the DSM-IV does not include diagnostic criteria for preschool and kindergarten-age children.
(Gimpel & Holland, 2003). Young children can be diagnosed by the DSM-IV but must meet criteria for older children or adults. This method can be problematic because the criteria for diagnosing internalizing and externalizing disorders in adults may not be appropriate criteria for preschoolers. The duration, frequency, and intensity of symptoms that are considered problematic for older children and adults may differ quantitatively and/or qualitatively from symptoms in preschoolers.

It is evident that appropriate evaluations of preschool children need to receive a substantial amount of attention. However, there is little research examining assessment instruments designed for the preschool age group. Therefore, there is a need and demand for more research related to the assessment of preschoolers. The percentage of school-aged children in need of intervention would likely decrease if early intervention with preschoolers is improved and increased (Gimpel & Holland, 2003). Despite the limitations of behavior rating scales, third party rating scales are the most efficient and accurate tools currently available for assessing the social and emotional behavior of preschoolers (Keith & Campbell, 2000).

*The BASC and the CBCL Preschool Scales*

There have been numerous behavior rating scales developed for use with preschoolers, but many have poor psychometric properties and are not nationally standardized (Kroff, Stollar, Johnson, & Chenneville, 1999). The CBCL and the BASC are two popular broadband instruments used by psychologists to assess the social and emotional behavior of preschoolers. They have earned such popularity due to their reliability and validity when used with school-aged children. Feil, Severson, and Walker (2002) indicated that the CBCL has become the model rating scale in measuring child
and adolescent social and emotional behavior. Merrell et al. (2001) also stated that the CBCL has become the most widely used and researched behavior rating scale in the world. Additionally, the BASC has a reputation for providing good measurements of child and adolescent behavior (Merrell, 2003). The BASC and the CBCL are useful tools when assessing externalizing and internalizing behaviors. Additionally, these two instruments also have great value in diagnosing problems such as ADHD (Power & Eiraldi, 2000). The BASC and CBCL pick up on numerous symptoms of problem behaviors and a wide array of disorders. Another advantage of using the CBCL is that this scale often identifies as many children with internalizing disorders as externalizing disorders (Gimpel & Holland, 2003). The significant point is that internalizing problems are often less diagnosed than externalizing problems at early ages because of the fact that externalizing symptoms are more easily observed than internalizing symptoms. Overall, behavior rating scales, such as the BASC and CBCL, have demonstrated to be some of the most efficient and effective methods of evaluating externalizing and internalizing behavior problems with school-age children (Merrell, 2003).

The BASC and CBCL were recently renormed and the age range was extended downward to include younger children. The BASC was extended downward to 30 months of age in 1998, and the CBCL was extended down to 18 months of age in 2000. Merrell (2003) stated that the BASC Preschool Scales seem to be a positive addition to the realm of behavior rating scales but acknowledged little research has been conducted on the preschool version. The reliability and validity of the BASC and CBCL is considered excellent when measuring behavior of school-aged children. However, there is little research on the reliability and validity on either of the revised preschool scales.
No published research was found that has evaluated the new BASC and the new CBCL preschool forms. However, research that used the school-aged versions of the BASC and CBCL have shown that the two behavior rating scales are highly correlated with each other. An example of such a study assessed 156 children in the first to fourth grades using the parent versions of the BASC/6-18 and the CBCL/4-18 (Doyle & Ostrander, 1997). They found that the convergent and criterion-related validity of the BASC was comparable to the CBCL. This study suggested that the school-aged versions of the BASC and CBCL consistently identified problematic behaviors.

Another study, requiring both teachers and parent reports, assessed 73 children ranging from 6.7 to 11.9 years old utilizing the BASC/6-18 and CBCL/4-18 scales. This research demonstrated that the BASC and the CBCL were reliable when compared to each other in diagnosing ADHD (Vaughn, Riccio, Hynd, & Hall, 1997). Although these scales were shown to be reliable and valid at the child and adolescent levels, more research needs to be conducted to provide evidence of the psychometric properties of the preschool scales.

Purpose

Social and emotional behavioral problems are difficult for professionals to assess in preschoolers through observation and child interview. As a result, there is a great need for accurate preschool behavior rating scales because of the importance of early identification and intervention. Recent revisions of the BASC and CBCL now include a wider age range of preschoolers. However, there is little evidence supporting the use of either scale for this age level. The reliability and validity of these scales must be examined as a safeguard to ensure their appropriateness. The purpose of this study was to
compare parent ratings of referred preschool children’s behavior on the BASC/2,5-5 and the CBCL/1.5-5 in order to determine if both instruments consistently measure similarly-named behavioral constructs in a group of referred preschoolers.

**Hypotheses**

This researcher investigated three hypotheses. If the scales are measuring the same behavioral constructs consistently, the mean standard scores on all corresponding scales on the BASC and CBCL should be at the same level. Thus, the first hypothesis was that there would be no significant differences between the mean standard scores on corresponding scales for the two instruments. For the second hypothesis, the correlations between the corresponding scales on the BASC and CBCL were examined. Because the scales examined in this study are similarly named on each instrument, it was expected that correlations for all pairs of corresponding scales on the BASC and CBCL would be positive, significant, and at a strong level (> .50). Examining overall means and correlations provides useful statistical data on the two behavioral measures. For a practical, applied evaluation of the consistency between the measures, the actual differences between the standard scores on all pairs of corresponding scales on the BASC and CBCL for each participant were examined. The third hypothesis was that all differences (100%) in standard scores would be less than one standard deviation. By definition, the term “standard deviation” refers to the typical deviation found between scores (Gravetter & Wallnau, 2000). Because it is expected that the two behavior rating scales will produce scores that are consistent, one could expect the standard scores on the corresponding scales to fall within one standard deviation of each other.
Method

Participants

The participants for this study were comprised of 50 parents of referred preschoolers between 30 and 71 months of age with a mean age of 43.9 months (SD = 11.9 months). Referred preschoolers are children that have been referred by their parents for an evaluation due to behavioral or developmental concerns. Participants were obtained from the Regional Child Development Clinic (RCDC) in Bowling Green, Kentucky, and from parents of children identified as needing special education services in the Hart and Muhlenberg County School Districts in Kentucky. RCDC is a nonprofit agency designed to address the developmental needs of children birth to 8 years of age. Thirty-three families from RCDC and 94 families from the school system were contacted for participation in this study. One hundred percent of contacted RCDC families participated. Twenty-three parents (24%) from the school system gave consent to participate. Of these, 17 parents completed and returned the behavioral rating measures for a total of 18% of the original school sample. Thirty-five of the total participants (70%) completed the rating scales on a male preschooler, and fifteen (30%) participants completed the scales on a female preschooler. Thirty-nine (78%) of the total preschool sample were identified as Caucasian, three (6%) as African American, three (6%) as Asian, one (2%) as Hispanic, and four (8%) as “other.” Forty mothers (80%), three fathers (6%), two grandmothers (4%) and five female guardians (10%) completed the protocols. To obtain information on the level of education the parent respondents
possessed, the parents were asked to indicate their highest completed education level. Three (6%) had less than a high school education, 16 (32%) had a high school diploma or GED, 15 (30%) had some college or vocational training, and 16 (32%) had a college degree.

*Instruments*

*Behavior Assessment System for Children (BASC/2.5-5).* Three versions of the BASC were originally developed by Reynolds and Kamphaus (1992). One version was to be completed by teachers, one self-report version was for the child, and the third version was to be completed by parents of children ages 4 to 18. The self-report version was not applicable for children under 8 years of age. Originally, the BASC versions for teachers and parents had three different forms available for the purpose of assessing different age groups: preschool (ages 4 to 5), children (ages 6 to 11), and adolescents (ages 12 to 18). A later revision of the BASC by Reynolds and Kamphaus (1998) made changes only to the preschool version by extending the age range downward to include children as young as 2.5 years of age. The instrument itself did not change. After collecting additional data on 559 children ages 2 years, 6 months to 3 years, 4 months, it was determined that composite scores were the same as children 4 to 5 years of age. Therefore, the previous preschool norms tables used for 4-to 5-year-old children are now used for children as young as 2 years, 6 months.

For the purposes of this study, only the parent version of the preschool form was described and examined. The parent preschool version of the BASC lists 131 specific problems or behaviors and the parent is to rate the occurrence of each item using a 4-point rating system: Never, Sometimes, Often, or Almost Always. The specific
behavioral items are grouped together to form 10 scales (i.e., Aggression, Hyperactivity, Anxiety, Depression, Somatization, Attention Problems, Atypicality, Withdrawal, Adaptability, and Social Skills). The BASC also provides results in the composite areas of Internalizing Problems, Externalizing Problems, Adaptive Skills, and the Behavioral Symptoms Index (BSI).

The Internalizing Problems Composite is comprised of the Anxiety, Depression, and Somatization scales. The Externalizing Problems Composite consists of the Hyperactivity and Aggression scales. An Adaptive Skills Composite consists of Adaptability and Social Skills. The BSI is an overall measure of the child’s behavior problems and is comprised of the Aggression, Hyperactivity, Anxiety, Depression, Attention Problems, and Atypicality scales.

Research provided evidence suggesting strong convergent and discriminant construct validity between the parent version of the original preschool BASC/4-5 rating scale and other behavior rating scales such as the Internalizing Symptoms Scale for Children (Merrell, Blade, Lund, & Kempf, 2003; Reynolds & Kamphaus, 1992). The internal consistency reliability of the most recent revision for ages 2 years, 6 months to 3 years, 11 months of the parent preschool scale is moderately strong with coefficient alpha reliabilities for all four composites ranging from .80 to .91 (Reynolds & Kamphaus, 1998). The Adaptive Skills composite produced a coefficient alpha of .80 for ages 2 years, 6 months to 2 years, 11 months and .84 for ages 3 years, 0 months to 3 years, 11 months. The Behavioral Symptoms Index produced a coefficient alpha of .90 for ages 2 years, 6 months to 2 years 11 months and .91 for ages 3 years, 0 months to 3 years, 11 months. Published research does not appear to be available as regards the reliability or
validity of the newest preschool form with children between 2 years, 6 months and 3 years, 11 months.

*Child Behavior Checklist (CBCL/1.5-5).* A second frequently used behavior rating scale that utilizes the two broadband domains of internalizing and externalizing problems is the CBCL originally developed by Achenbach (1991). The first version was designed with one form to measure problems of children ages 4 to 18 and a second form for ages 2 to 3. A later revision by Achenbach and Rescorla (2000) revised the CBCL and renamed the scale to include children of younger ages. Currently the two forms of the CBCL are for children ages 1.5 to 5 years and for children ages 6 to 18 with three versions available (Achenbach & Rescorla, 2000). One version is to be completed by teachers, one version is to be completed by parents, and the third version is a self-report that is completed by the child (the self-report is not applicable for preschool children).

For the purposes of this study, the parent version of the preschool form was examined. The preschool version of the CBCL lists 100 specific problems or behaviors and the parent is to rate the occurrence of each item using a 3-point rating scale: 0 (Not True), 1 (Somewhat True), and 2 (Very True). The specific behavioral items are grouped together to form 12 scales (i.e., Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Attention Problems, Aggressive Behavior, Sleep Problems Affective Problems, Anxiety Problems, Pervasive Developmental Problems, Attention Deficit/Hyperactivity Problems, and Oppositional Defiant Problems). The CBCL also provides results in the composite areas of Internalizing Problems, Externalizing Problems, and Total Problems.
The Internalizing Problems Composite is comprised of the Emotionally Reactive, Anxious/Depressed, Somatic Complaints, and Withdrawn scales. The Externalizing Problems Composite consists of the Aggressive Behavior and Attention Problems scales. The Total Problems Composite is comprised of the overall scores for Internalizing Problems, Externalizing Problems, Sleep Problems, and all additional specific items that are not listed under a specific domain. The CBCL also provides scores for five “DSM oriented scales” (i.e., Affective Problems, Anxiety Problems, Pervasive Developmental Problems, Attention Deficit/Hyperactivity Problems, and Oppositional Defiant Problems). DSM oriented scales are designed to measure behaviors that are consistent with diagnostic criteria as defined in the Diagnostic and Statistical Manual.

Although the CBCL/4-18 has been shown to strongly correlate with other scales such as the BASC and Community Social Behavior Scales, there is little research on the validity of the revised preschool scale (Merrell et al., 2001). The CBCL/1.5-5 has strong internal consistency coefficients for all three composites ranging from .89 to .95 (Achenbach & Rescorla, 2000).

Scale Comparisons

For the purposes of this study, 13 corresponding scales and composites from the BASC and the CBCL were chosen for comparison based on similarity in construct names and/or similarity in the behavioral symptoms measured. For example, the BASC Atypicality scale was compared with the CBCL Pervasive Developmental Disorders scale because both scales measure similar atypical behaviors such as rocking, staring blankly, and repeating one activity over and over. It is important to note that two BASC scales (i.e., Anxiety, Depression) were compared to the same CBCL scale (i.e.,
Anxious/Depressed). The BASC and CBCL scales for the thirteen comparisons are listed in Table 1.

Procedure

The informed consent procedures for this study were approved by the Western Kentucky University Human Subjects Board (see Appendix A). Six teachers in six classrooms within the Hart County school system, along with three teachers in six classrooms (with two preschool classes assigned to each teacher) within the Muhlenberg County school system, received the informed consent documents (see Appendix B). Teachers sent the informed consent documents home with each student that was identified as a referred preschooler due to receiving special education services within the district. To receive special education services as a preschooler, each student must be more than 2 standard deviations below the mean in one developmental area (i.e., cognitive, adaptive behavior, communication, motor, social/emotional) or at least 1.5 standard deviations below the mean in two or more areas. Parents who wished to participate in the study wrote their name and mailing address on the consent form, signed it, and mailed it to the investigators in addressed and stamped envelopes. No follow up procedures were attempted with non-respondents. A Ph.D. level psychologist at RCDC obtained informed consent from participating parents who referred their children to the clinic for a developmental evaluation. All families from RCDC chose to participate in this study.
Table 1  

Pairs of BASC and CBCL Scales Used for Research Comparisons

<table>
<thead>
<tr>
<th>BASC</th>
<th>CBCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperactivity</td>
<td>Attention Deficit/Hyperactivity Problems²</td>
</tr>
<tr>
<td>Aggression</td>
<td>Aggressive Behavior</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Anxious/Depressed</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Anxiety Problems²</td>
</tr>
<tr>
<td>Depression</td>
<td>Anxious/Depressed</td>
</tr>
<tr>
<td>Depression</td>
<td>Affective Problems²</td>
</tr>
<tr>
<td>Somatization</td>
<td>Somatic Complaints</td>
</tr>
<tr>
<td>Atypicality</td>
<td>Pervasive Developmental Problems²</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>Attention Problems</td>
<td>Attention Problems</td>
</tr>
<tr>
<td>Internalizing Problems</td>
<td>Internalizing Problems</td>
</tr>
<tr>
<td>Externalizing Problems</td>
<td>Externalizing Problems</td>
</tr>
<tr>
<td>Behavioral Symptoms Index</td>
<td>Total Problems</td>
</tr>
</tbody>
</table>

²Refers to DSM-IV oriented diagnostic scales on the CBCL.
As informed consent documents were returned from parents in the two school
districts, a packet containing the following items were mailed to each parent agreeing to
participate: (a) a copy of the signed informed consent, (b) a BASC and a CBCL protocol,
(c) a cover letter (see Appendix C) containing directions for completion of the scales, (d)
sheet for the parent to indicate their name, address, and educational level (see Appendix
C), and (e) a stamped/addressed return envelope. A separate name/address sheet was
included again so that the investigator could mail the participant a $5.00 voucher for
completing and returning the BASC and CBCL. Once the investigator received the
completed BASC and CBCL, the completed name/address sheet was immediately
removed from the materials and placed in a separate file to protect the anonymity of the
rating scales. The investigator then sent a $5.00 voucher to the participants that returned
the rating scales and the name/address sheets. The psychologist at RCDC administered
and collected all protocols and other information received on children 2 years, 6 months
to 5 years, 11 months of age.
Results

All rating scales were scored using computer scoring software sold by the tests’ publishers. The CBCL only provides gender-specific norms so gender-specific norms were also used when scoring the BASC protocols in order to enhance comparability. The lowest T score attainable on the individual scales of the CBCL is 50. Only the Internalizing, Externalizing, and Total Problems composite scales on the CBCL can result in T scores less than the mean (50). Therefore, for some analyses, T scores falling below 50 on the BASC, with the exception of the Internalizing, Externalizing, and BSI composites, were truncated at 50 in order to compare scores between the two measures. Raw scores were also used in some data analyses. The percentage of truncated scaled scores ranged from 20% on the BASC Attention scale to 68% on the BASC Somatization scale. Overall, 41.3% of scores were truncated to a T score of 50 on the BASC. The results will be presented in terms of the three hypotheses posed.

Consistency of Mean Scores – Hypothesis 1

It was hypothesized that there would be no significant differences between the mean scores on the corresponding scales of the BASC and CBCL. Mean scores for the corresponding scales are listed in Table 2. In order to evaluate this hypothesis, paired sample t-tests were conducted between standard scores on the corresponding scales to determine if the means were significantly different. The results showed that 9 out of
Table 2

*Mean Standard Scores for Comparable BASC and CBCL Scales*

<table>
<thead>
<tr>
<th>BASC-CBCL</th>
<th>BASC Mean</th>
<th>CBCL Mean</th>
<th>t values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperactivity-ADHD^a</td>
<td>58.9</td>
<td>58.6</td>
<td>.31</td>
</tr>
<tr>
<td>Aggression-Aggressive</td>
<td>55.0</td>
<td>59.8</td>
<td>-3.52**</td>
</tr>
<tr>
<td>Anxiety-Anxious/Depressed</td>
<td>54.0</td>
<td>57.6</td>
<td>-3.13**</td>
</tr>
<tr>
<td>Anxiety-Anxiety Problems</td>
<td>54.0</td>
<td>57.4</td>
<td>-2.82**</td>
</tr>
<tr>
<td>Depression-Anxious/Depressed</td>
<td>56.5</td>
<td>57.6</td>
<td>-1.03</td>
</tr>
<tr>
<td>Depression-Affective Problems</td>
<td>56.5</td>
<td>58.6</td>
<td>-1.49</td>
</tr>
<tr>
<td>Somatization-Somatic Complaints</td>
<td>52.6</td>
<td>55.1</td>
<td>-2.67*</td>
</tr>
<tr>
<td>Atypicality-PDD^b</td>
<td>57.1</td>
<td>65.6</td>
<td>-5.19***</td>
</tr>
<tr>
<td>Withdrawal-Withdrawn</td>
<td>60.2</td>
<td>62.8</td>
<td>-1.43</td>
</tr>
<tr>
<td>Attention-Attention</td>
<td>63.9</td>
<td>59.3</td>
<td>3.27**</td>
</tr>
<tr>
<td>Internalizing-Internalizing</td>
<td>49.1</td>
<td>58.8</td>
<td>-6.65***</td>
</tr>
<tr>
<td>Externalizing-Externalizing</td>
<td>54.0</td>
<td>58.3</td>
<td>-3.44**</td>
</tr>
<tr>
<td>Behavioral Symptoms Index-Total Problems</td>
<td>56.1</td>
<td>59.5</td>
<td>-2.70*</td>
</tr>
</tbody>
</table>

^a ADHD = Attention Deficit Hyperactivity Disorder. ^b PDD = Pervasive Developmental Disorder.

* p < .05. ** p < .01. ***p < .001.
13 corresponding scales resulted in significantly different mean scores. The BASC Atypicality versus CBCL Pervasive Developmental Disorders comparison and the BASC Internalizing Problems versus CBCL Internalizing Problems comparison resulted in the largest differences between mean standard scores of all 13 comparisons. Only the Hyperactivity – ADHD, Depression Anxious/Depressed, Depression Affective Problems, and the Withdrawal Withdrawn comparisons did not result in significant differences between the mean scores.

*Strength of Correlations – Hypothesis 2*

It was hypothesized that correlations for all pairs of corresponding scales on the BASC and CBCL would be positive, significant, and strong (> .50). For testing purposes, paired sample correlations between T scores and raw scores on the corresponding scales were conducted. This hypothesis was partially supported in that all 13 corresponding scales were significant and positively correlated for both standard and raw score comparisons (see Table 3). However, some corresponding scales (both standard and raw scores), such as BASC Depression and CBCL Affective Problems, BASC Somatization and CBCL Somatic Complaints, BASC Atypicality and CBCL Pervasive Developmental Disorders (PDD), and BASC Withdrawal and CBCL Withdrawn, produced significant correlations less than the .50 criteria. Additionally, a strong correlation was not evident for the comparison of standard scores on the BASC Aggression and CBCL Aggressive scale, and for the comparison of raw scores on the BASC Anxiety and CBCL Anxious/Depressed scale.
Table 3

Correlations Between Corresponding Scales on the BASC and CBCL

<table>
<thead>
<tr>
<th>BASC-CBCL</th>
<th>Standard Scores</th>
<th>Raw Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperactivity-ADHD&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.73***</td>
<td>.74***</td>
</tr>
<tr>
<td>Aggression-Aggressive</td>
<td>.49***</td>
<td>.53***</td>
</tr>
<tr>
<td>Anxiety-Anxious/Depressed</td>
<td>.57***</td>
<td>.47**</td>
</tr>
<tr>
<td>Anxiety-Anxiety Problems</td>
<td>.52***</td>
<td>.51***</td>
</tr>
<tr>
<td>Depression-Anxious/Depressed</td>
<td>.74***</td>
<td>.60***</td>
</tr>
<tr>
<td>Depression-Affective Problems</td>
<td>.48***</td>
<td>.48***</td>
</tr>
<tr>
<td>Somatization-Somatic Complaints</td>
<td>.37**</td>
<td>.39**</td>
</tr>
<tr>
<td>Atypicality-PDD&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.37**</td>
<td>.49***</td>
</tr>
<tr>
<td>Withdrawal-Withdrawn</td>
<td>.33*</td>
<td>.41**</td>
</tr>
<tr>
<td>Attention-Attention</td>
<td>.62***</td>
<td>.67***</td>
</tr>
<tr>
<td>Internalizing-Internalizing</td>
<td>.62***</td>
<td>.60***</td>
</tr>
<tr>
<td>Externalizing-Externalizing</td>
<td>.72***</td>
<td>.80***</td>
</tr>
<tr>
<td>Behavioral Symptoms Index-Total Problems</td>
<td>.75***</td>
<td>.75***</td>
</tr>
</tbody>
</table>

<sup>a</sup> ADHD = Attention Deficit Hyperactivity Disorder.  
<sup>b</sup> PDD = Pervasive Developmental Disorder.

* *p < .05. ** *p < .01. *** *p < .001.
Standard Score Differences – Hypothesis 3

It was hypothesized that 100% of the actual differences between the standard scores on all pairs of corresponding scales on the BASC and CBCL would be less than one standard deviation (<10 points). The percentage of participants scoring less than one standard deviation between the standard scores on the corresponding BASC and CBCL scales was calculated as a means of testing this hypothesis. Results are presented in Table 4. If these two instruments were consistently measuring the same behavioral symptoms, all 13 comparisons should produce standard score differences of less than one standard deviation apart. The Somatization versus Somatic Complaints scale comparison resulted in the highest number of standard scores within one standard deviation of each other (82%) with similar results found for the Hyperactivity - ADHD comparison (80%). About half of the scale comparisons resulted in at least one out of every three standard scores being greater than one standard deviation apart. There were two comparisons, Atypicality - PDD and Internalizing - Internalizing, for which the majority of standard scores (i.e., more than half) were greater than one standard deviation apart. Because so many score comparisons were greater than one standard deviation apart, and no pair of scales had 100% of scores less than one standard deviation apart, the third hypothesis was not supported.

Externalizing Problems Versus Internalizing Problems

A post-hoc analysis was conducted in order to examine the number of children the BASC and CBCL identified with externalizing problems, internalizing problems, or both externalizing and internalizing problems. The criteria used to determine whether or not
Table 4

*Percentage of Participants Scoring Less Than or Greater Than One Standard Deviation Between Standard Scores on the Corresponding BASC and CBCL Scales*

<table>
<thead>
<tr>
<th>BASC-CBCL</th>
<th>&lt; 1 SD</th>
<th>≥ 1 SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperactivity-ADHD*a</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Aggression-Aggressive</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>Anxiety-Anxious/Depressed</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>Anxiety-Anxiety Problems</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>Depression-Anxious/Depressed</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>Depression-Affective Problems</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td>Somatization-Somatic Complaints</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Atypicality-PDD*b</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Withdrawal-Withdrawn</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Attention-Attention</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>Internalizing-Internalizing</td>
<td>44</td>
<td>56</td>
</tr>
<tr>
<td>Externalizing-Externalizing</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Behavioral Symptoms Index-Total Problems</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

*a ADHD = Attention Deficit Hyperactivity Disorder. *b PDD = Pervasive Developmental Disorder.
an area was significantly high was 1.5 standard deviations above the mean or a standard score of 65 of higher. Percentages for three categories were calculated for both the BASC and CBCL. Three categories were examined: (a) an elevated score on the Externalizing scale, (b) an elevated score on the Internalizing scale, and (c) elevated scores on both the Externalizing and Internalizing scales. The results are presented in Table 5. Results indicate that the BASC identified more children with only externalizing problems than with only internalizing problems; however, the CBCL produced opposite results. In addition, the BASC identified more children with only internalizing problems and only externalizing problems than with both internalizing and externalizing problems combined. However, the CBCL again produced opposite results. More children were identified with both internalizing and externalizing problems on the CBCL than with only internalizing problems or only externalizing problems. Overall, the CBCL identified a greater percentage of children as having a problem in one or both domains. These results suggest that the CBCL consistently rated referred preschoolers higher than the BASC in the internalizing and externalizing domains.
Table 5

Percentage of Participants Identified with Elevated Standard Scores (≥ 65) on Internalizing Problems, Externalizing Problems, or Both Scales

<table>
<thead>
<tr>
<th></th>
<th>BASC</th>
<th></th>
<th>CBCL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total #</td>
<td>%</td>
<td>Total #</td>
<td>%</td>
</tr>
<tr>
<td>Internalizing Problems Only</td>
<td>3</td>
<td>6</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Externalizing Problems Only</td>
<td>8</td>
<td>16</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Internalizing and Externalizing Problems</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Total in Sample With One or Both</td>
<td>13</td>
<td>26</td>
<td>21</td>
<td>42</td>
</tr>
</tbody>
</table>
Discussion

The BASC and the CBCL have become two of the most widely used instruments by school psychologists to assess the social and emotional behavior of school-aged children (Feil et al., 2002; Merrell, 2003). However, little research has been conducted with the preschool versions of the BASC and CBCL. The current study examined the relationship of corresponding scales on the BASC and CBCL preschool behavior rating scales to determine how the instruments measured similarly-named behavioral constructs in a group of referred preschoolers. This study provided much needed information regarding the psychometric properties of the preschool behavior rating scales.

Parents of referred preschoolers from two school systems and one local child development clinic participated in this study by completing the both the BASC and CBCL regarding their children. A variety of analyses were conducted to evaluate the two scales in different ways. This study examined mean scores and correlations on comparisons of corresponding scales for the BASC and CBCL to look for score consistency. The difference between actual standard scores was examined to assess the "practical" consistency in test results for individual children. Finally, the number of children having externalizing problems, internalizing problems, or both was examined to look at the rates of such problems in a referred sample of preschoolers.

The current research examined the mean scores of the 13 corresponding scales on the BASC and CBCL. Nine out of the 13 comparisons on the BASC and CBCL resulted in significantly different mean scores; therefore, the majority of scales compared did not
have similar mean scores. Overall, t-tests between mean scores suggest that there may be moderate differences between similarly-named scales on the BASC and CBCL. This finding has important implications for psychologists in choosing which measure to utilize when assessing social/emotional behaviors in preschool children. It appears that these two instruments do not provide similar results for all similarly-named scales. The “accuracy” of the ratings was not determined. Therefore, it is unknown whether the CBCL or the BASC is producing the inflated score on a given scale. Another possibility is that two similarly-named scales may actually measure slightly different constructs or aspects of a behavioral symptom.

The current research also examined the correlations of standard and raw scores for all 13 corresponding scales. All comparisons resulted in significant and positive correlations. However, four comparisons using both standard and raw scores (BASC Depression – CBCL Affective Problems, BASC Somatization – CBCL Somatic Complaints, BASC Atypicality – CBCL PDD, and BASC Withdrawal – CBCL Withdrawn), along with BASC Aggression – CBCL Aggressive (standard score comparison only) and BASC Anxiety – CBCL Anxious/Depressed (raw score comparison only) was not found to be at a strong level (> .50). Perhaps these results imply that the items designed to measure such behavioral symptoms on the BASC and CBCL may actually measure different problem behaviors. Psychologists wishing to use either the BASC or the CBCL to measure some behavioral symptoms may not be assessing these areas appropriately. Therefore, decisions based on clinically significant levels on some of the BASC or CBCL scales may be misguided.
For the most part, statistical analyses of the consistency of the BASC and CBCL scores do not support the results of Doyle and Ostrander (1997) who found that the BASC/6-18 and the CBCL/4-18 consistently identified problematic behaviors within the school-aged population. The present results indicated that six scale comparisons are not equivalent measures on the parent-preschool versions of the BASC and CBCL. Future research may need to focus on clarifying the definitions of some behavioral symptoms and how to better measure those constructs within the preschool-aged population.

The current research examined the actual differences between standard scores (after truncating some scores on the BASC) on corresponding scales of the BASC and CBCL for each respondent. The percentage of participants scoring less than one standard deviation between the standard scores on each corresponding BASC and CBCL scale was calculated. No pair of scales had higher than 82% of the standard scores falling within one standard deviation of each other. At least one-third of the children received standard scores at least one standard deviation apart on six of the scale comparisons (i.e., Depression, Atypicality, Withdrawal, Internalizing, Externalizing, and BSI). Three more scales (i.e., Anxiety, Depression, and Attention) had one-fourth of the children receiving standard scores at least one standard deviation apart on the two instruments. Such results suggest that overall there is significant variability between BASC and CBCL test results.

Vaughn et al. research (1997) indicated that the previous versions of the BASC/6-18 and CBCL/4-18 produced consistent results when assessing school-aged children for ADHD. The current research found similar results using the BASC/2.5-5 Hyperactivity scale and the CBCL/1.5-5 ADHD scale. The two scales had a high correlation and resulted in equivalent mean scores. Most (80%) of participants' individual
standard scores fell less than one standard deviation apart from each other. Although ideally all scores should be within one standard deviation of each other, the results imply that the recent BASC and CBCL preschool rating scale may produce a comparable level of consistency as the BASC/6-18 and CBCL/4-18 scales when examining ADHD-type behavior.

The current research also examined the number of children the BASC and CBCL identified with externalizing problems and/or internalizing problems. Gimpel and Holland (2003) reported that one advantage of using the CBCL is that it often identifies as many children with internalizing disorders as externalizing disorders. The results of this study using the CBCL with a referred sample partially supported their claim. More children were identified as having only internalizing problems than having only externalizing problems. However, the BASC identified a higher number of children as having only externalizing problems than only internalizing problems. In addition, the CBCL identified more children as having either both internalizing problems and externalizing problems combined.

Limitations

The current study has its limitations. The representativeness of a sample is a concern when making generalizations for the population as a whole. While 127 families were contacted for participation in this study, only 50 families (39%) participated. No follow-up procedures were used to contact non-respondent families to increase sample size. All participants were obtained from rural areas in south central and western Kentucky, which contained minimal diversity and high levels of poverty. Over a third of the sample of parents had only a high school or less education level. Parents with low
reading capabilities or who are illiterate may not have been able to understand the items on the behavior rating scales to answer each item accurately. The parents’ reading abilities or understanding of the items was not assessed.

Only families of referred preschoolers (identified as having a developmental delay) received an opportunity to participate in this study. Parents of at-risk preschoolers or other preschool-aged children not considered as having a delay were not offered participation in this study. Limiting participants to parents of referred preschoolers restricts the sample and may provide statistical results different from a sample representative of the population as a whole. However, the intent of this study was to examine how the BASC and CBCL would compare on a sample of children receiving services due to some sort of delay.

This study focused only on social and emotional behavior problems assessed by the BASC and CBCL. Thirteen scales were matched and compared between the BASC and CBCL, with some scales compared more than once due to slight differences in construct names. All scales on the BASC/2.5-5 and CBCL/1.5-5 were not used in the comparisons. It is unknown as to how all scales from the BASC compare to all scales from the CBCL. There may be behavioral constructs that may seem very different based on name but are correlated highly. Such findings may result in additional interpretations of the soundness of the constructs.

*Future Research*

The overall means and correlations found in this study suggest that the parent version of the BASC and CBCL are not measuring problematic behaviors fairly consistently within a referred population of preschoolers. Wide variability in individual
scores between the two instruments raises concerns for the practitioner assessing preschoolers with social/emotional problems. Future research needs to further examine preschool behavior rating scales to provide additional reliability and validity data.

The BASC was recently revised and released in November 2004. The revised BASC-II could be compared to the CBCL to determine whether current research results are found with the new version. Similarly, a new behavior rating scale called the *Clinical Assessment of Behavior* ([CAB] Bracken & Keith, 2004) was recently published. The CAB is intended for preschoolers as well as school-aged children. Future research could compare any combination of those three rating scales.

A teacher report version is available for the BASC and CBCL preschool scales; however, it was not used in this study. Preschool versions of the BASC and CBCL could be included in future research to examine how the parent versions of the scales relate to teacher versions. Teacher ratings also play an important role in the identification and intervention of social and emotional problems in preschool-aged children; therefore, it is imperative that the scales produce reliable and valid results for teachers and parents alike.

The current study provides information regarding the consistency of the BASC and CBCL within a group of referred preschoolers. Future research should also examine the consistency of the two scales within a population of preschoolers who have been identified as “at-risk” in order to determine if the results are similar for both groups of preschoolers. In addition, research should attempt to obtain a more representative sample including participants from a wide range of geographical locations, from different levels of social-economic status, and of different ethnicities. It may also be beneficial to examine the reading ability of the respondents and determine if there is a relationship
between reading ability or education level and consistency of ratings between different behavior rating scales. This study focused on the problem behaviors that behavior rating scales measure. Future research could also examine behavior rating scales designed to measure positive traits such as adaptive behavior or social skills to determine consistency across measures in those areas.

The CBCL identified more children as having only internalizing problems than only externalizing problems. However, the BASC identified more children as having only externalizing problems than only internalizing problems. Overall, the two behavior rating scales did not rate externalizing or internalizing problems at a consistent rate. Future research could examine whether externalizing or internalizing problems actually occur more frequently within the preschool population. These results support the need for additional research on the prevalence of internalizing and externalizing disorders in preschoolers.

Future studies could also examine whether or not the results of the BASC or the CBCL can be used to target appropriate problem behaviors for the purpose of providing specific interventions. This approach would support the functional utility of a particular behavior rating scale beyond its statistical qualities. In addition, future research could examine the accuracy of the instruments by examining whether or not independent clinical diagnoses matched the results of the BASC or CBCL preschool behavior rating scales. For example, a preschooler diagnosed with ADHD should have elevated scores on the BASC Hyperactivity scale and the CBCL ADHD scale. This information would lend more support to the construct validity of the two scales.
Finally, longitudinal research should be conducted in order to examine the longevity of problem behaviors identified by the preschool versions of the BASC and CBCL. For example, a child whose Internalizing Problems score on the CBCL was clinically significant in preschool should be evaluated after a few years to determine whether or not the problem behavior identified by the CBCL is still occurring.

Summary

The current research provided much needed information regarding the consistency of the CBCL and the BASC preschool behavior rating scales. Overall, the statistical analyses suggest that the BASC and CBCL are not producing consistent scores within a group of referred preschoolers. Additional research is needed to provide more information regarding the consistency of results of the preschool versions of the revised BASC and CBCL.
References


In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 1697-1699). Bethesda, MD: NASP.


Appendix A
Human Subjects Review Board Approval
Kristina Sidebottom
513 Glenview Drive
Horse Cave, KY 42749

Dear Kristina:

Your research project, “A Comparison of the BASC and CBCL Preschool Scales,” was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects’ welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that: (1) signed informed consent will be obtained. (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

a. Your research therefore meets the criteria of Full Board Review and is Approved.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Sincerely,

Phillip E. Myers, Ph.D.
Director, OSP and
Human Protections Administrator

c: Dr. Carl Myers
Sara Beth Alvey
Human Subjects File Sidebottom04-017
Appendix B
Cover Letter Explaining Study and Informed Consent
Dear Parent:

We are conducting a study on how parents rate their preschool-aged children on two different rating scales. We are asking for your help. **You will get a $5.00 Houchens voucher for completing the scales.** It will take about 15 minutes to fill out the scales. No one in the Hart County school system will see any of the information you give us. If you want to help, please follow the directions below:

1---Read, sign, and date the paper (Parent/Legal Guardian Consent) attached to this letter- please make sure that you write in your name and address so we can mail the scales to you for you to fill out.

2---Place the signed paper into the envelope and return it to us in the mail. The envelope is already addressed and the postage is paid.

When we receive your consent form, we will mail two scales to the address that you provided. We will also send directions on how to fill out these scales. After you complete the scales, you will need to send them back to us in the pre-paid/pre-addressed envelope that we will give you. We will send you the $5.00 Houchens voucher after we receive the completed scales.

We thank you for your help and it is greatly needed. If you have questions about our study, please call one of us at the numbers below or contact Dr. Phillip Myers, WKU Human Protections Administrator, at 270-745-4652.

Kristina Sidebottom  
(270)745-2535  
School Psychology Graduate Student

Sara Alvey  
(270)745-6929  
School Psychology Graduate Student

Carl Myers, Ph.D.  
(270)745-4410  
Associate Professor of Psychology
PARENT/LEGAL GUARDIAN CONSENT

Title of Study: Preschool Behavior Rating Scales

Researchers: Kristina J. Sidebottom and Sara B. Alvey, School Psychology Graduate Students
Contact: Dr. Carl Myers - Psychology Department - (270)745-4410

If you would like to be a part of this study, Western Kentucky University requires that you read and sign this form.

This form will talk about why we are doing this study, how we will do it, and why you may or may not want to be a part of it. You may ask us any questions you have to help you understand the study. Our names and phone numbers are provided on the cover sheet. Please read the information below and sign if you agree to be a part of our study.

You will be mailed a copy of this form to keep. You will get a $5.00 Houchens voucher at the end of the study if you finish all of the study.

Why We Are Doing This Study: This study is to help the graduate students at Western Kentucky University to obtain a graduate degree. The purpose of this study is to see if two behavior rating scales are good at measuring preschool behavior.

How We Will Do This Study: If you wish to be a part of the study, you will need to write your name and mailing address on this form so we can mail you the rating scales to fill out. Please return this form in the pre-addressed and pre-stamped envelope.

After you mail this form back, we will mail you the rating scales. When you get the scales in the mail, please follow the directions. Please return the scales to us in the pre-addressed and pre-stamped envelope given to you. A name/address sheet will be included so that the $5.00 Houchens voucher can be mailed to you after finishing the study. If you do not wish to be in our study, you may simply throw this away. You will not be contacted again.

Why You May Not Want To Be In Our Study: It will take you about 15 minutes to fill out the scales. Some of you might be uncomfortable with some of the questions. Remember, if you feel uncomfortable with answering any of the questions, you may quit at any time.

Why You May Want To Be In Our Study: This study will help us see if the two scales are good to use for measuring preschoolers' behaviors. Also, you will get a $5.00 Houchens voucher for completing the scales.

Your Name And Address Will Be Kept Separate: You will not be asked to write any names on the forms. People at the school will not know any results or even who was in our study. Forms that have your name and address will not be kept with the rating scales. One form that you will get will have a place for your name and address at the top and a place at
the bottom to check parents education level. When we get this form back from you, it will be cut in half. The name and address part will go in one pile, and the parent education part will be stapled to the behavior rating scale. This way, we will not be able to link your name or address with the behavior rating scales you filled out.

**If You Choose Not To Be In Our Study:** If you decide not to be a part of this study, it will not affect future services you can get from Western Kentucky University, your school system, or from other centers. Anyone who agrees to be a part of this study is free to quit the study at any time.

*You understand that we have listed things that might make you uncomfortable with this study, and you understand that all possible risks cannot be listed. You believe that we have tried to make all risks known.*

__________________________________________  ____________________________
Signature of Parent/Legal Guardian          Date

NAME:_____________________________________

ADDRESS:__________________________________

__________________________________________

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS REVIEW BOARD
Dr. Phillip E. Myers, Human Protections Administrator
TELEPHONE: (270) 745-4652
Appendix C
Protocol Directions and Education Sheet
Directions for Participating in Survey

Dear Parent/Guardian,

Please complete all steps for the BASC (white form) first. Then you will need to complete the Child Behavior Checklist (blue form).

**The same parent/guardian should fill out both forms.**

1. Fill out only the highlighted areas at the top of the BASC and CBCL.
2. Read all directions on the forms carefully.
3. Answer each item – do not skip any. Surveys with items skipped will not be used.
4. Complete the form provided with your name/address and parent/guardian education level to receive the $5.00 voucher.

Place all three forms in the mail in the provided envelope. **DO NOT** send back your copy of the informed consent document or this direction sheet in the mail. They are yours to keep.

**You have one week from the day of receiving this packet to return all completed forms. Any forms returned after one week may not be used in the study and vouchers may not be mailed.**
In order for us to send you a $5.00 voucher for filling out the two rating scales, you need to write your name and address on this sheet.

Name:______________________________

Address:______________________________

**************************************************

This sheet will be cut along the above line and separated so researchers cannot link names and education levels to the rating scales.

HIGHEST EDUCATION LEVEL

Please check the highest education level for each parent (or step-parent) living in the home. If you are a single parent, just complete the column for yourself.

Mother                                               Father
_____Less than High School                        _____Less than High School
_____High School or GED                            _____High School or GED
_____Some College or Vocational School            _____Some College or Vocational School
_____College Degree(s)                            _____College Degree(s)