Assessing Validity of a Screener for Social, Emotional, and Behavioral Concerns: Analyzing Gender Differences in a Middle School Population

Kimberly Lowe

Brigham Young University - Provo

Follow this and additional works at: https://scholarsarchive.byu.edu/etd

Part of the Counseling Psychology Commons, and the Special Education and Teaching Commons

BYU ScholarsArchive Citation


This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.
Assessing Validity of a Screener for Social, Emotional, and Behavioral Concerns:
Analyzing Gender Differences in a Middle School Population

Kimberly Lowe

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Educational Specialist

Ellie L. Young, Chair
Lane Fischer
Michael Richardson

Department of Counseling Psychology and Special Education
Brigham Young University
June 2015

Copyright © 2015 Kimberly Lowe
All Rights Reserved
ABSTRACT

Assessing Validity of a Screener for Social, Emotional, and Behavioral Concerns: Analyzing Gender Differences in a Middle School Population

Kimberly Lowe
Department of Counseling Psychology and Special Education, BYU
Educational Specialist

Systematic screening for social, emotional, and behavioral concerns (SEBC) identifies at-risk students and provides information to guide interventions that may prevent negative outcomes (Glover & Albers, 2006; Kauffman, 1999; Severson, Walker, Hope-Dolittle, Katochwill, & Gresham, 2007). However, the screening process may be influenced by the gender of the student (Young, Sabbah, Young, Reiser, & Richardson, 2010). This study further examined the influence of student gender on screening by assessing the congruency of gates one and two of a screening process based on student gender.

Participants included 59 middle school teachers who nominated at-risk students on the Teacher Nomination Form (TNF; Davis, 2012) and then completed the Behavior Assessment System for Children, Behavioral and Emotional Screening System (BASC-2 BESS; Kamphaus & Reynolds, 2007) on each nominated student. A two-tailed z-score was calculated to see if the TNF predicted BASC-2 BESS T-scores better for one gender over the other. A z score of -0.63 ($p > .05$) was obtained in the internalizing category and a z score of 0.39 ($p > .05$) was obtained in the externalizing category; the difference between correlation coefficients for males and females was not statistically significant. While more males were nominated than females in both the internalizing and externalizing categories, the screening instrument does not measure differently for males and females according to the data analysis provided here. Disproportionate identification of males and females in the screening process may be explained by other factors that could be the focus of additional research.

Keywords: emotional and behavioral disorders, school-based screening, universal screening, gender differences, adolescents
ACKNOWLEDGMENTS

My thesis would never have been completed without the help of my amazing chair and committee. Ellie, your undying faith in me, your (not nagging!) reminder emails, your genuine concern, and your willingness to have a sense of humor have helped pull me along in the process. I just might graduate after all. I have appreciated the help of my committee in piecing together the details of my research and data analysis. Thanks especially to Lane for the hours spent working out the hidden codes in a lengthy SPSS file.

I am especially grateful for the support of friends and family. Mom, my thesis blanket keeps me warm at night (with the joy of research, of course). I am forever grateful for those closest to me who keep me laughing and help me feel loved, even when life is hard.
# TABLE OF CONTENTS

ABSTRACT .............................................................................................................................................. ii

ACKNOWLEDGMENTS ............................................................................................................................ iii

TABLE OF CONTENTS ............................................................................................................................ iv

Chapter 1: Introduction ........................................................................................................................... 1

Chapter 2: Literature Review .................................................................................................................. 3

EBD vs. SEBC ......................................................................................................................................... 3

Overview of EBD .................................................................................................................................... 4

Negative Outcomes for Youth with EBD ............................................................................................. 5

Importance of Screening ......................................................................................................................... 7

Screening Versus Diagnosis ..................................................................................................................... 8

Characteristics of Effective Universal Screeners ..................................................................................... 9

  Universal ................................................................................................................................................ 9

  Systematic .......................................................................................................................................... 10

  Multi-gated ........................................................................................................................................ 10

  Strong psychometric properties ......................................................................................................... 10

  Alignment with interventions and supports ......................................................................................... 11

Current Screeners for EBD ..................................................................................................................... 11

  Systematic Screening for Behavior Disorders (SSBD) ...................................................................... 11

  Student Risk Screening Scale (SRSS) ................................................................................................. 12

  Behavior Assessment System for Children, Behavioral and Emotional Screening System (BASC-2 BESS) ...................................................................................................................... 12

  Teacher Nomination Form (TNF) ....................................................................................................... 12
Gender Differences and Similarities in Internalizing and Externalizing Disorders ..........13

Potential Explanations for Disproportionate Identification .............................................15

Teacher influence ...............................................................................................................15

Difference in prevalence .................................................................................................17

Issues with assessment ....................................................................................................18

Purpose of Study ................................................................................................................19

Chapter 3: Method .................................................................................................................21

Participants ..........................................................................................................................21

Measures ............................................................................................................................22

Teacher Nomination Form (TNF) .......................................................................................22

Behavior Assessment System for Children, Behavioral and Emotional Screening
System (BASC-2 BESS) ....................................................................................................23

Procedures ..........................................................................................................................23

Data Analysis .....................................................................................................................25

Chapter 4: Results .................................................................................................................27

Research Question One .........................................................................................................27

Research Question Two ......................................................................................................27

Research Question Three ...................................................................................................28

Research Question Four ....................................................................................................28

Research Question Five .....................................................................................................28

Research Question Six .......................................................................................................29

Research Question Seven ..................................................................................................29

Research Question Eight .................................................................................................29
Chapter 1: Introduction

Youth with social, emotional, and behavioral concerns (SEBC) tend to have a number of negative outcomes in both the academic and behavioral domains. Students with emotional and behavioral disorders (EBD) demonstrate academic achievement deficits in all content areas (Nelson, Benner, Lane, & Smith, 2004; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004) and have the lowest graduation percentages of any disability category (U.S. Department of Education, 2006). These students have difficulties with interpersonal relationships (Cullinan & Sabornie, 2004) and struggle to maintain jobs after high school (Johnson, 2008; Zigmond, 2006). In order to help these students change their negative trajectories, at-risk students first need to be identified so that interventions that match their needs can be implemented.

Universal screening instruments are designed to identify students with SEBC who may benefit from interventions aimed to prevent or alleviate these negative outcomes (Glover & Albers, 2006; Kauffman, 1999; Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham). Given that many emotional and behavioral disorders have an average age-of-onset during early adolescence (Kessler et al., 2005), systematic screening in secondary schools is critical. An entire classroom of students may be considered simultaneously in the screening process, allowing each student an equal chance of being identified (Severson et al., 2007). Screening is an efficient way to garner information about the risk status of students and should guide interventions to prevent the development of emotional and behavioral disorders.

However, there may be a discrepancy in the screening process based on student gender. A study by Young, Sabbah, Young, Reiser, and Richardson (2010) found that teachers nominated males more frequently than females in both the externalizing (5:1) and internalizing (2:1) categories. This finding contradicts a well-established trend in the literature that females
more frequently exhibit internalizing concerns while males more frequently exhibit externalizing concerns. These inconsistencies in the literature call for a further evaluation of the role of student gender in the screening process.
Chapter 2: Literature Review

EBD versus SEBC

Emotional and Behavioral Disorders (EBD) are characterized by a “sustained pattern of socially inappropriate and undesirable behaviors” (Lane, Parks, Kalberg, & Carter, 2007, p. 209). EBD is the term most commonly found in the research literature; however, special education law uses the term emotional disturbance (ED) to identify youth with this educational disability (Code of Federal Regulations, title 34, Section 300.8(c)(4)(i), 2008). The definition of ED found in special education law is:

. . . a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:

1. An inability to learn that cannot be explained by intellectual, sensory, or health factors.
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
3. Inappropriate types of behavior or feelings under normal circumstances.
4. A general pervasive mood of unhappiness or depression.
5. A tendency to develop physical symptoms or fears associated with personal or school problems (Code of Federal Regulations, title 34, Section 300.8(c)(4)(i), 2008).

Given this definition, only the individuals who meet the above criteria will be captured under the term emotional disturbance and receive special education services. This currently includes approximately 1% of the school-age population (NCES, 2012). In contrast, research suggests that the percentage of students who remain in the general education setting with mental
health concerns is significantly higher. Kauffman and Landrum (2009) suggest that estimates of individuals with SEBC vary significantly, ranging “from 0.5% of the school population to 20% or more” (p. 25). A study by Farmer, Burns, Philip, Angold, and Costello (2003) found that, during a given year, approximately 24% of individuals aged 9, 11, and 13 utilized mental health services from school or community resources. In addition, Kessler et al. (2005) found that the median age-of-onset for anxiety disorders and impulse-control disorders is 11 years old, with 75% of disorders developing before ages 21 (anxiety) and 15 (impulse-control).

These results suggest that a number of students with a range of social, emotional, and behavioral concerns remain in the general education classroom in need of additional supports to prevent some of the negative outcomes associated with SEBC (Lane, Bruhn, Eisner, & Kalberg, 2010; Lane, Joliverte, Conroy, Nelson, & Benner, 2011). Thus the term SEBC is preferred over EBD in the screening process because it captures a broader scope of concerns and is more inclusive of children in the general education classroom. However, it should be noted that since the term EBD is still so commonly used in the literature, it will be used frequently throughout this literature review to accurately reflect the writing of other authors.

**Overview of EBD**

EBD can be divided into two broadband categories: externalizing disorders and internalizing disorders (Achenbach, 1966). In general, externalizing disorders involve under-controlled behaviors while internalizing disorders involve over-controlled behaviors (Kauffman & Landrum, 2009). These categories are not mutually exclusive: an individual may have both an internalizing and an externalizing disorder (Kovacs & Devlin, 1998; Lewinsohn, Rohde, & Seeley, 1995; Puig-Antich, 1982). These two categories of disorders, internalizing and externalizing, have distinct characteristics.
Internalizing disorders, as the name suggests, are inwardly focused and individuals direct behavior away from their social environment (Walker & Severson, 1992). They are typically expressed as covert, overcontrolled behaviors (Reynolds, 1990). Examples of these disorders include depression, anxiety, withdrawal, and eating disorders (Leadbeater, Kupermine, Blatt, & Hertzog, 1999). In a classroom, observable behaviors of students with internalizing disorders include acting fearful, not participating in activities, not communicating or interacting with other students, and exhibiting low activity levels (Walker & Severson, 1992); however, given the covert nature of internalizing disorders, behaviors may be difficult for teachers to detect in the classroom (Reynolds, 1990).

In contrast, externalizing disorders are outwardly directed, overt behaviors (Reynolds, 1990; Walker & Severson, 1992). While many externalizing behaviors are frequently observable, externalizing disorders “involve behavioral excesses which are usually maladaptive and aversive to others” (Walker & Severson, 1992, p. 2). Examples of externalizing disorders include aggression, oppositional disorders, and delinquency (Leadbeater et al., 1999). These disorders manifest themselves in behaviors such as hyperactivity, arguing, breaking rules, and disturbing others (Walker & Severson, 1992).

Negative Outcomes for Youth with EBD

Students with EBD frequently present with a “constellation of problems in multiple domains” (Greenbaum et al., 1996, p. 144). In the academic domain, a number of negative educational outcomes are associated with EBD. Students with EBD have the lowest graduation percentages and the highest dropout rates of any disability category (U.S. Department of Education, 2006) and demonstrate academic achievement deficits in all content areas (Nelson, et al., 2004; Reid et al., 2004). A seven-year longitudinal study of 812 students with severe
emotional disturbance (SED) ages 9-17 receiving special education or mental health services revealed that 58% were below grade level in reading and 93% were below grade level in math (Greenbaum et al., 1996). By the end of the study, 353 students were 18 years old or older. Of these students, 75.4% were below grade level in reading, 96.9% were below grade level in math. Only 42.5% had a high school diploma or GED. In addition to these academic deficits, data from three national longitudinal studies indicate that nearly three-quarters (72.9%) of secondary students with EBD have been suspended or expelled (Bradley, Henderson, & Monfore, 2004).

Negative outcomes associated with EBD extend beyond the scholastic realm and into areas of interpersonal relationships and feelings of self-worth. For example, students with EBD frequently score in the low range on assessments of social skills and adaptive behavior (Bradley, Henderson, & Monfore, 2004; Greenbaum et al., 1996). In addition, individuals with EBD demonstrate greater relationship problems, inappropriate behavior, and unhappiness or depression when compared to peers without EBD (Cullinan & Sabornie, 2004). Results from similar comparison studies have shown that students with EBD report lower quality of life (Sacks & Kern, 2008) and a significant decline in self-concept after age 15 (Montague, Enders, Dietz, Dixon, & Cavendish, 2008).

Research suggests that postsecondary outcomes for individuals with EBD are just as bleak. Data from longitudinal studies indicate that over one-third of individuals with EBD have been arrested at least once (Bradley et al., 2004; Greenbaum et al., 1996). Difficulties with employment patterns are also concerning. Only about half of individuals with EBD are employed six months after high school (Johnson, 2008; Zigmond, 2006). Those individuals who are working demonstrate instability in their jobs and change jobs frequently. Most work part-
time jobs that do not require a high school diploma, receiving only minimum wage (Zigmond, 2006).

**Importance of Screening**

Given the number and variety of negative outcomes for youth with EBD, it is crucial to screen for at-risk behaviors in the schools. Many students with social, emotional and behavioral concerns remain in the general education classrooms because their symptoms are not severe enough to warrant special education services under the classification of emotional disturbance (Lane et al., 2010a). In addition, research provides evidence that more at-risk students are identified using systematic screening than through the traditional teacher referral method (Eklund et al., 2009) and that teacher ratings are predictive of future behavior (Montague et al., 2008).

Unfortunately, behavioral and emotional concerns are often overshadowed by academic concerns in the schools. While screening frequently takes place in schools for reading, math, vision, and hearing, screening for behavioral concerns is much less frequent (Hess et al., 2012; Severson et al., 2007). This is concerning due to the correlations that have been found between academic achievement and behavior (Algozzine, Wang, & Violette, 2011; Benner, Beaudoin, Kinder, & Mooney, 2005; Fleming, Harachi, Cortes, Abbott, & Catalano, 2004). A participant in a focus group consisting of students who experienced serious psychological problems starting in high school stated, “[Teachers] think you can separate it, like separate your emotional problems from your academic performance” (Mowbray, Megivern, & Strauss, 2002, p. 20). While some researchers are hesitant to assert a causal relationship between academic achievement and behavior (Algozzine et al., 2011), Walker (2010) asserts, “schools will not be effective if they focus solely on identifying and respond to student concerns in one area only, whether it is
academic or social/behavioral. Instead, schools must recognize that student success in school is based on the interaction of all of these factors” (p. 104).

Rather than waiting for students to have debilitating behavioral or academic difficulties, universal, systematic screening is a proactive approach to identifying students who may benefit from a continuum of services (Eklund et al., 2009; Hess, Short, & Hazel, 2012; Severson et al., 2007; Walker, 2010). The field is turning to a public health model for identifying mental health concerns that focuses on early identification and intervention within multi-tiered systems of support (Hess et al., 2012; President’s Commission on Excellence in Special Education, 2002). Within this model, supports ranging from universal (i.e., provided to all students) to intensive (i.e., one-on-one supports) are implemented based on data collected, such as the results of systematic screening (Hess et al., 2012).

Studies have shown the positive effects of interventions on individuals with EBD (Chitiyo, May, & Chitiyo, 2012; Ryan, Pierce, & Mooney, 2008; Ryan, Reid, & Epstein, 2004; Vannest, Harrison, Temple-Harvey, Ramsey, & Parker, 2011). These interventions take a variety of forms but typically fit into one of three categories: self-mediated, peer-mediated, or teacher-mediated interventions (Ryan et al., 2008). Results from interventions for students with EBD include increased on-task behavior (Kamps et al., 2011; Schoenfeld & Mathur, 2009), improved academic achievement (Ryan et al., 2004; Ryan et al., 2008), increased school-appropriate behavior (Schoenfeld & Mathur, 2009), and decreased frequency of problem behaviors (Kamps, et al., 2011). Outcomes for students with EBD can improve when screening informs appropriate interventions (U.S. Department of Education, 2002).
Screening Versus Diagnosis

The purpose of screening is different from diagnosis and yields a different outcome (Young, Caldarella, Richardson, & Young, 2011). Diagnosis is an individually-focused process that results in the determination of a specific disorder, label, or category (Glover & Albers, 2006; Young et al., 2011). It is both time- and resource-intensive (Young et al., 2011). In contrast, the screening process involves the consideration of a group of individuals, providing everyone an equal chance of being identified (Walker & Severson, 1992). The purpose of screening is to identify at-risk individuals who may benefit from interventions aimed to prevent the development of a disorder or lessen the negative outcomes (Glover & Albers, 2006; Kamphaus & Reynolds, 2009; Kauffman, 1999; Young et al., 2011). Identified individuals may be considered at-risk for developing the disorder but should not be labeled as having the disorder based on the screening process. A benefit of screening over the diagnostic process is its ability to consider a broad range of concerns for multiple people simultaneously, ultimately requiring less time and resources (Glover & Albers, 2006; Kamphaus, 2012; Walker & Severson, 1992; Young et al., 2011).

Characteristics of Effective Universal Screeners

There are a number of characteristics to consider when selecting a universal screening instrument. An ideal screener is universal, systematic, multi-gated, and has strong psychometric properties. In addition, screeners are most effective when they are embedded in a system of multi-tiered supports. Once a screening instrument is selected and implemented, it will be most beneficial if it is used to implement appropriate interventions for students.

Universal. One of the advantages of the screening process over the diagnostic process is its ability to cast a wide net among the population (Young et al., 2011). Screeners consider an
entire group of people, for example, an entire classroom, at once (Glover & Albers, 2006; Young et al., 2011). This provides each individual an equal chance of being identified (Walker & Severson, 1992). In addition, a screener should be broad in scope (Glover & Albers, 2006; Young et al., 2011). Screeners for social, emotional, and behavioral concerns capture information in more domains than a screener for a specific disorder (e.g., depression). In a school setting where time is limited, it is unreasonable to require teachers to fill out a screener for every disorder. Instead, universal screeners efficiently yield sufficient information to determine what additional action is needed (e.g., collecting data or implement interventions).

**Systematic.** Best practices for screening suggest that screening should occur frequently. It should not be a one-time event but a process that aligns with the school culture as well as with research-based interventions that are designed to help students once they are identified (Young et al., 2011). Research suggests that screening should begin approximately six weeks into the school year, giving teachers enough time to get to know the students in the class (Severson et al., 2007; Young et al., 2011). Screening should then continue throughout the school year to capture changes as students continue to develop (Young et al., 2011).

**Multi-gated.** When a screener has multiple gates, it has the ability to effectively consider a group of people while still maintaining sensitivity (Severson et al., 2007). Each gate is a decision-making point that determines whether the individual moves on to the next stage (Young et al., 2011). Considerations become increasingly specific with each gate, essentially narrowing the population to determine the intensity of interventions needed (Severson et al., 2007).

**Strong psychometric properties.** An effective screener should demonstrate adequate scores of validity, or measure what it claims to measure, and reliability, or yield consistent scores
across time and settings (American Educational Research Association [AERA], 1999). In particular, it should demonstrate strong predictive validity, which includes sensitivity, or the likelihood the screener will yield a positive test result when the condition is truly present, and specificity, or the likelihood the screener will yield a negative test result when the condition truly is not present (Kamphaus & Reynolds, 2007). In addition, predictive validity includes the negative predictive value, or the proportion of true negative test results, and positive predictive value, or the proportion of true positive test results (Kamphaus & Reynolds, 2007).

Alignment with interventions and supports. The benefits of screening will only be seen if the results are used to inform the implementation of necessary supports (Kamphaus & Reynolds, 2007). The level of support needed for each student will vary from universal to intensive. Schools should already have in place potential interventions and a system of supports; the screening process should then align with these efforts (Young et al., 2011).

Current Screeners for EBD

There are a number of screeners currently used in the literature including the Systematic Screening for Behavior Disorders (SSBD; Walker & Severson, 1992), the Student Risk Screening Scale (SRSS; Drummond, 1994), the Behavior Assessment System for Children, Behavioral and Emotional Screening System (BASC-2 BESS; Kamphaus & Reynolds, 2007), and the Teacher Nomination Form (TNF; Davis, 2012; see Appendix B). A brief description of each of these screening instruments will be provided below.

Systematic Screening for Behavior Disorders (SSBD). The SSBD has been labeled the gold standard of screening (Kahlberg, Lane, Driscoll, & Wehby, 2011; Lane, Little, & Casey, 2009). It is a nationally normed, multi-gated, three stage screener developed for use in elementary schools (Walker & Severson, 1992); however, research provides preliminary
evidence of its validity in secondary schools (Caldarella, Young, Richardson, Young, & Young, 2008; Richardson, Caldarella, Young, Young, & Young, 2009). In the first stage, teachers nominate students at risk for internalizing or externalizing disorders. These nominated students then move on to stage two, where teachers complete the Critical Events Inventory (CEI) and Combined Frequency Index (CEI) to assess adaptive and maladaptive behaviors. Students with scores that exceed established cut-offs on these instruments are considered in stage three. In this stage, students are observed both on the playground and in the classroom.

**Student Risk Screening Scale (SRSS).** The SRSS is a brief screener consisting of only seven items (Drummond, 1994). Teachers rate every student in their class on all seven items and the student’s total score indicates his/her level of risk. The process for rating an entire class takes approximately 10-15 minutes to complete. When compared with the SSBD, the SRSS had similar detection levels of children with externalizing disorders; however, it was not as effective at identifying students with internalizing disorders, yielding a high number of false negatives (55.56%; Lane et al., 2009; Lane, Kalberg, Lambert, Crnobori, & Bruhn, 2010). Lane et al. (2012) have since added 5 additional items designed to better address internalizing concerns. Named the Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE), preliminary evidence supports its validity (Lane et al., 2012).

**Behavior Assessment System for Children, Behavioral and Emotional Screening System (BASC-2 BESS) Child/Adolescent Teacher Form.** The BASC-2 BESS Child/Adolescent Teacher Form was created for use in grades 3 through 12 (Kamphaus & Reynolds, 2007). The form consists of 27 items and takes approximately 5-10 minutes to complete for each child. Scores on the BASC-2 BESS yield T-scores based on a nationally representative sample. Research has indicated high test-retest reliability (.91), high specificity.
(0.95) and sensitivity (0.80) as well as strong negative predictive value (0.96), and positive
predictive value (0.76; Kamphaus & Reynolds, 2007).

**Teacher Nomination Form (TNF).** The Teacher Nomination Form (TNF) was created
by Davis (2012) for use in screening middle school populations. The screening process was
based on the SSBD (Walker & Severson, 1992); however, since the SSBD was developed for
elementary schools, Davis (2012) sought to create a nomination form with appropriate
descriptors of internalizing behaviors and externalizing behaviors within middle school
populations. Test-retest reliability of the TNF revealed that teachers were moderately consistent
in nominating and ranking students in the externalizing category (61%) and somewhat consistent
in nominating and ranking students in the internalizing category (47%; Davis, 2012).

**Gender Differences and Similarities in Internalizing and Externalizing Disorders**

Gender is an important factor when considering mental health concerns (Friedrich,
Raffaele Mendez, & Mihalas, 2010; Zahn-Waxler, Shirtcliff, & Marceau, 2008). Gender
differences and similarities can be found in both the prevalence and expression of a variety of
internalizing and externalizing disorders (Bell, Foster, & Mash, 2005; Zahn-Waxler et al., 2008).
When considering social, emotional, and behavioral concerns, it should not be assumed that what
is effective for one gender is also effective for the other (Bell et al., 2005). Therefore, it is
important to explore these differences and how they may influence the screening process for
SEBC.

Research suggests that the prevalence of internalizing and externalizing disorders varies
by gender (Hoffmann, Powlishta & White, 2004; Leadbeater et al., 1999; Lewinsohn et al., 1995;
Zahn-Waxler et al., 2008). In a study of 460 sixth and seventh graders in New York (230 males
and 230 females), females reported internalizing symptoms more frequently than males while
males reported externalizing symptoms more frequently than females (Leadbeater et al., 1999). Numerous studies support this idea that females are more commonly internalizers and males are more commonly externalizers (Hoffmann et al., 2004; Lewinsohn et al., 1995; Zahn-Waxler et al., 2008). For example, depression and anxiety are more common with females (Lewinsohn et al., 1995; Tompkins, Hockett, Abraibesh & Witt, 2011) as well as co-rumination (Tompkins et al., 2011), suicide attempts (Lewinsohn et al., 1995), and eating disorders (Ackard, Fulkerson, & Neumark-Sztainer, 2007). In contrast, males are more likely to have conduct disorders (Cohen et al., 1993; Zahn-Waxler et al., 2008) and are more likely to be referred for aggression, disruptive behavior, and bullying (Foster et al., 2005).

Despite this trend in the literature, a study by Young et al. (2010) found that teachers nominated males more frequently than females in both the externalizing and internalizing categories at an overall proportion of 3:1. The findings of the study conducted by Young et al. (2010) are contrary to the expected trend that males would be nominated more frequently in the externalizing category and females would be nominated more frequently in the internalizing category. However, these results are in alignment with other studies showing that males are referred for EBD more frequently than females (Rees, Farrell, & Rees, 2009) and that more males receive special education or related services than females (U.S. Department of Education, 2006).

In addition to the gender difference in the prevalence of internalizing and externalizing disorders, there is evidence that symptoms of disorders vary by gender as well. For example, in a study conducted by Bennett, Ambrosini, Kudes, Metz, & Rabinovich (2005) looking at symptoms of depression, females received higher ratings on feelings of failure, concentration problems, body image dissatisfaction, sleep problems, guilt, self-disappointment,
sadness/depressed mood, difficulty working, and self-blame while males had higher ratings of anhedonia, depressed morning mood, and morning fatigue. This suggests that even though males and females may be diagnosed with the same disorder, they may typically experience this disorder differently.

**Potential Explanations for Disproportionate Identification**

There are a number of potential explanations for the disproportionate identification of males and females in the screening process for SEBC. One possible theory looks at the influence of the teacher in the screening process. Another explanation could be that the prevalence of EBD is actually higher in males than in females. A third possibility is that the screening instrument being used works differently for males and females. These theories will be outlined; however, due to the complex nature of the issue, no definitive conclusions will be made.

**Teacher influence.** Teachers are frequently involved in the screening and referral process due to their intensive involvement with students. Research supports the idea that teacher nominations of students are predictive of future behaviors (Montague et al., 2008). However, there are a variety of factors that may influence teachers to identify males more frequently than females in the screening process.

First, the type of behavior being manifest might influence screening. Teachers are more likely to notice and refer students for externalizing concerns because of the disruptive nature of these behaviors (Green, Clopton, & Pope, 1996). On the other hand, internalizing concerns are more covert and harder to detect in a classroom (Reynolds, 1990). In a study using mail-in surveys, 107 school psychologists were asked about their most recent EBD referral (Rees et al., 2003). The predominant reasons for referral were externalizing concerns including acting out (52 cases), aggression/violence (24 cases), attendance problems/truancy (16 cases), non-
compliance/challenging behaviors (10 cases), disruptive behavior (8 cases), and attention seeking (8 cases). The only internalizing concern cited was anxious behavior (11 cases). In addition, a study by Kokkinos, Panayiotou, and Davazoglou (2004) found that teachers rated antisocial behaviors such as stealing, bullying, and destroying school property as more serious than internalizing concerns. Since males are more frequently externalizers, it is likely that teachers sensitive to only externalizing concerns would refer more male students than females.

Second, teacher perceptions of the severity of a disorder may vary by student gender and thus influence the screening process. Kokkinos et al. (2004) found that teachers were more concerned when students exhibited behavior contrary to gender stereotypes. Klein (2012) also found that teachers were more likely to refer students whose behavioral concerns contrasted with traditional gender concerns. From this perspective, teachers are more likely to identify males with internalizing concerns and females with externalizing concerns. This idea of differential opinions based on student gender is also supported by a study conducted by Rice, Merves, and Srsic (2008). Fifteen face-to-face interviews were conducted with educational professionals working with females with EBD. Through these interviews the researchers found that the professionals used different language when talking about females, that they perceived females with EBD as being harder to work with, and admitted a tendency to avoid working with females with EBD.

Third, since gender differences exist in the expression of a variety of disorders, teachers may be more sensitive to how one gender typically manifests a disorder and therefore identify them more frequently. For example, males more frequently express aggression through physical acts of violence (Landsford et al., 2012) while researchers suggest that there is not a significant gender difference in the expression of relational aggression (Young, Boye, & Nelson, 2006;
Landsford et al., 2012). Based on the tendency to refer students for externalizing concerns, it seems reasonable to hypothesize that if a teacher were asked to identify students who are aggressive in class, he/she may only nominate students who are physically aggressive because this is more easily observable and because physical acts of violence are most commonly thought of first with aggression. This would likely result in the teacher nominating far more male students than female students, perhaps misrepresenting the aggressive students in the class.

It is important to note that while student gender appears to have an influence on teacher nominations, Hardman (2013) found that teacher gender does not have a significant influence in the screening process. Hardman (2013) hypothesized that the disproportionate identification of males and females with social, emotional, and behavioral concerns could be partially explained by teacher gender (i.e., female teachers are more likely to nominate male students). With more female teachers typically employed in junior high schools (NCES, 2010), it follows that more males would then be nominated for social, emotional, and behavioral concerns. However, results from Hardman (2013) showed that male and female teachers nominated at-risk students similarly, both nominating males more frequently than females. Teacher gender also did not influence the nomination of internalizing and externalizing concerns.

**Difference in prevalence.** Another potential explanation for the disproportionate identification rates is that males may truly have emotional and behavioral disorders more frequently than females. Theories abound regarding why gender differences exist in mental health concerns. Hoffmann et al. (2004) suggested that gender role orientation may help explain gender differences and that masculinity may protect against internalizing disorders while femininity may protect against externalizing disorders. Leadbeater et al. (1999) found that gender differences in internalizing and externalizing concerns may be partly explained by gender
differences in vulnerability, risk, and protective factors. For example, attachments to parents were a protective factor that was stronger for females than for males. Strong parental relationships were more likely to protect declines in externalizing behaviors for females compared to males.

Zahn-Waxler, Shirtcliff, and Marceau (2005) summarized some of the possible theories for differing prevalence rates in depression. Females may experience depression more than males in adolescence because females tend to ruminate and dwell on negative events or emotions (Nolen-Hoeksema, Larson, & Grayson, 1999). Dependence on interpersonal relationships may also be a risk factor for females, making females more vulnerable to depression when changes in relationships arise (Cyranowski, Frank, Young, & Shear, 2000). In addition, socialization of females tends to encourage self-sacrificing, helpless, and relationship-dependent behaviors, all of which are risks for depression (Aube, Fichman, Saltaris, & Koestner, 2000).

As an over-arching theory, Zahn-Waxler et al. (2008) proposed that possible explanations fit into one of five categories: males and females experience (a) different environmental risk factors, (b) different levels of the same environmental risk factors, (c) different biological processes, (d) different risk thresholds, or (e) different interactions of environment and biology. While theories abound that fit into each of these categories, the reason for gender differences in the prevalence of disorders is ultimately unknown. This speaks to the complexity of the considerations and the intricate interplay of potential factors throughout development.

**Issues with assessment.** Screening instruments could also explain why males are referred more frequently for EBD (Zahn-Waxler et al., 2005). Some screeners are not as sensitive to internalizing concerns and may therefore not identify these students, typically females, as being at-risk (Kahlberg et al., 2011; Lane et al., 2009; Lane et al., 2010b).
Knowledge of gender differences should be used to inform the screening process; instead, lack of gender-specific items may prevent the identification of some students (Friedrich et al., 2010). In addition, the screener could be more predictive of one gender’s risk status over the other. Having a screening instrument that has evidence of validity for both males and females is essential in accurately identifying at-risk students in need of interventions. Further investigation of the predictability of screeners by gender is necessary.

**Purpose of the Study**

The purpose of this study is to explore the possibility that a screening process may measure differently for males and females. We will analyze the frequency of teacher nominations for internalizing and externalizing concerns based on student gender and consider how the teacher nominations correspond with ratings on the BASC-2-BESS based on student gender. If males and females differ in the frequency of nominations and the predictability of ranking on the TNF, one possible explanation is that the screener may measure differently based on student gender. In other words, nominations on the TNF may predict scores on the BASC-2-BESS with more accuracy for one gender than the other.

Using data from a larger research study conducted during the 2011-2012 school year (Davis, 2012), the following research questions were addressed:

1. Is there a significant difference in the number of males nominated in the externalizing category compared to females?
2. Is there a significant difference in the number of males nominated in the internalizing category compared to females?
3. How does the ranking on the TNF in the internalizing category predict the level of BASC-2 BESS T-score for females?
4. How does the ranking on the TNF in the internalizing category predict the level of BASC-2 BESS T-score for males?

5. How does the ranking on the TNF in the externalizing category predict the level of BASC-2 BESS T-score for females?

6. How does the ranking on the TNF in the externalizing category predict the level of BASC-2 BESS T-score for males?

7. Does the relationship between ranking on the TNF in the internalizing category and the level of BASC-2 BESS T-score differ significantly by student gender?

8. Does the relationship between ranking on the TNF in the externalizing category and the level of BASC-2 BESS T-score differ significantly by student gender?

9. Is there a significant difference in ranking on the combined list by student gender?

10. Is there a significant difference in ranking on the combined list by internalizing or externalizing category?

Based on the findings from the study conducted by Young et al. (2010), the researchers predict that more males will be nominated than females in both the externalizing and internalizing categories. In addition, given that males are more frequently identified as being at-risk, the researchers predict that the TNF will be significantly more predicative of BASC-2 BESS T-scores for males than for females.
Chapter 3: Method

The current research questions are being answered using data from a previous study conducted by Davis (2012). Given that an archival data set was used for this study, additional consent from participants was not needed or obtained. For information on how consent was obtained for the original data, please refer to Davis (2012). Information regarding participants, measures, procedures, and data analysis is outlined below.

Participants

Participants from this study included 59 middle school teachers (76% female) from two schools in a mountain west state. A convenience sample was used; schools and teachers were selected because of willingness to participate. At School One, 22 full-time teachers participated of the 45 full-time teachers at the school (49%). At School Two, 37 full-time teachers participated of the 59 full-time teachers at the school (63%). Of the teachers who participated, 88% identified themselves as Caucasian and 12% identified as another ethnic group.

Teachers provided information on students in this study; however students were not directly involved in the study. School One had 906 students (93% Caucasian, 3% Asian, 2% African, 4% American Indian, 1% Pacific Islander, 9% Hispanic). School Two had 1,417 students (94% Caucasian, 3% Asian, 1% African, 4% American Indian, 2% Pacific Islander, 7% Hispanic). Approximately 26% of students at the schools qualified for free or reduced price lunch. School One had 428 females (47%) and 478 males (53%). School Two had 703 females (50%) and 714 males (50%).

Teachers were asked to provide basic information on the students they nominated including the student’s gender, ethnicity, grade, and student initials. There were 355 different students nominated and 122 of those students had multiple nominations. For this study, each
nomination was considered as a separate case so a total of 518 student nominations were considered. At School One, 133 males were nominated (66.8%) while 66 females were nominated (33.2%). At School Two, 221 males were nominated (69.5%) while 97 females were nominated (30.5%). Nominated students at both schools were predominantly Caucasian: 79.9% at School One and 81.1% at School Two. At School One, 66 seventh grade students were nominated (33.2%), 63 eighth grade students (31.7%), and 70 ninth grade students (35.2%). At School Two, 124 seventh grade students were nominated (39.0%), 84 eighth grade students (26.4%) and 110 ninth grade students (34.6%)

**Measures**

Two instruments were used as part of the screening process. These instruments included the Teacher Nomination Form (TNF; Davis, 2012), and the Behavior Assessment System for Children, Behavioral and Emotional Screening System (BASC-2 BESS; Kamphaus & Reynolds, 2007).

**Teacher Nomination Form (TNF).** The Teacher Nomination Form was developed by Davis (2012) and was based on stage one of the SSBD (Walker & Severson, 1992). The SSBD was designed for use within elementary schools and, although studies have shown evidence of its validity in secondary schools (see Caldarella et al., 2008), the TNF was created for use in middle schools. The TNF was developed using descriptors of internalizing and externalizing disorders generated by middle school teachers during a preliminary study. This list of descriptors provides behavioral anchors in the nomination process (see Appendix B). Teachers nominate five students from their classroom in the externalizing category and five students in the internalizing category. Once these nominations are complete, the teacher ranks the nominated students in order of the severity of their concern (with 1 being the most severe). Teachers then combine all
10 students into one list and again rank them in order of teacher’s concern (with 1 being the most severe concern). This is called the combined category and provides insight on risk status regardless of the nominated category. Test-retest reliability was conducted on the TNF and teachers were moderately consistent in nominating and ranking students in the externalizing category (61%) and somewhat consistent in nominating and ranking students in the internalizing category (47%; Davis, 2012).

**Behavior Assessment System for Children, Behavioral and Emotional Screening System (BASC-2 BESS) Child/Adolescent Teacher Form.** The BASC-2 BESS screener is “designed to determine behavioral and emotional strengths and weaknesses” (Kamphaus & Reynolds, 2007, p. 1) and has a child/adolescent form to be completed by teachers. This form is a feasible second gate in the screening process because it only takes approximately 5-10 minutes to complete for each student. The form has 27 items that are scored on a Likert scale. Total scores are then converted to T-scores with a mean of 50 and a standard deviation of 10.

Evidence supports the validity and reliability of the screener. Tests of validity reveal that the BASC-2 BESS has high sensitivity (.80), high specificity (.95), moderate positive predictor power (.76), and high negative predictive power (.96; Kamphaus & Reynolds, 2007). Reliability is also strong with high test-retest reliability (.91), internal consistency (.96-.97), and inter-rater reliability (.71) scores (Kamphaus & Reynolds, 2007).

**Procedures**

Data were collected during the 2011-2012 school year. Approval for this study was received through the Brigham Young University Institutional Review Board as well as from the school district’s research review board. An archival data set was used and additional consent from the participants was not needed or obtained. Teachers were contacted during a faculty
meeting and asked to participate. Interested teachers were given a packet with the screening instruments along with a standardized explanation of the process. The screening process, including filling out the TNF and the BESS forms took less than one hour to complete. Two weeks were given to complete the forms and return them to a locked box at the school. Teachers received a $75 visa gift card for their participation in the study.

Teachers filled out a brief demographic form that asked for their gender, ethnicity, number of years teaching and subject taught (see Appendix A). They then completed the TNF where they nominated and ranked five students in the internalizing category and five students in the externalizing category. Teachers then combined all ten students into one list and ranked them in order of teacher’s concern. Based on these nominations, teachers filled out the BASC-2-BESS child/adolescent teacher form on each of the nominated students. Some data were removed from the study because of incomplete or overly negative responses. Two teachers nominated fewer than two students, one teacher did not complete the BESS forms, one teacher completed BESS forms on students other than the ones nominated, and all overly negative BESSes were removed. Overly negative BESSes were defined as any BESS form that had a score of 3 or higher on the F validity index. The BASC-2 BESS technical manual indicates that F validity index scores of 3 or higher should be interpreted with caution and therefore were excluded from data analysis (Kamphaus & Reynolds, 2007). With this invalid data removed, 518 completed BASC-2-BESS forms remained.

Since teachers provided information about at-risk students, further information gained from this study (e.g., scores on the BASC-2 BESS) was shared with the teachers so that, ideally, interventions may be implemented to help these students. Once the BASC-2 BESS forms were scored, information sheets were compiled for each teacher. These information sheets included
identifying information, BASC-2 BESS T-scores and BASC-2 BESS category of risk (elevated or extremely elevated) for each student they nominated. These forms were placed in an envelope with the teacher’s initials and the subject he/she taught on the outside of the envelope. The principal of each school then received these envelopes to pass out to teachers. Decisions on how to use these data were left up to the discretion of the school.

**Data Analysis**

Data were analyzed using the IBM Statistical Package for the Social Sciences Statistics software (IBM SPSS Statistics). Teachers were asked to nominate students in either the internalizing or externalizing categories. After their nominations were complete, the teachers ranked the students by need. A student who had a ranking of one had the most concerning behaviors. Rankings by teachers on the TNF were reverse scored so that a higher number indicates greater teacher concern. For example, if a teacher ranked a student with a one (highest concern), this was reverse scored to a five. Rankings were provided in the internalizing (260 nominations), externalizing (258 nominations), and combined (479 nominations) categories. All raw scores on the BASC-2 BESS were converted to T-scores as instructed by the BASC-2 BESS manual. These scores were included to indicate student risk based on a normative sample.

A chi-square test of independence was calculated comparing nominations of male and female students in the internalizing and externalizing categories to assess whether more male or female students were nominated than expected based on the sample in either category. Spearman’s *rhop* correlation coefficients were also calculated to indicate the relationship between ranking on the TNF and BASC-2 BESS T-scores for both male and females. *Z*-scores were then calculated to see if the correlation coefficients differed significantly by student gender. Finally, Mann Whitney *U* tests were calculated to determine whether there was a significant difference in
mean ranking for males and females as well as internalizing and externalizing students on the combined list. A $p$ level of at least .05 was used for all statistical tests.
Chapter 4: Results

The main elements considered in data analysis include teacher ranking of students by gender, number of teacher nominations of students by gender, and BASC-2 BESS T-scores of students by gender. The primary research question was whether strength of teacher concern as demonstrated on the TNF predicts the level of BASC-2 BESS T-score differently based on student gender. The results of the data analysis are presented below under each research question.

Research Question One

Is there a significant difference in the number of males nominated in the externalizing category compared to females? A chi-square test of independence was calculated comparing nominations in the externalizing category for males and females. A significant nonrandom pattern was found ($\chi^2 (1) = 50.607, p < .01$). Based on the sample, it was hypothesized that 128.8 males and 60.2 females would be nominated in the externalizing category; however, 158 males and 29 females were actually nominated in this category. Significantly more males and fewer females were nominated in the externalizing category compared to the number of nominations expected based on the sample.

Research Question Two

Is there a significant difference in the number of males nominated in the internalizing category compared to females? A chi-square test of independence was calculated comparing nominations in the internalizing category for males and females. A significant nonrandom pattern was found ($\chi^2 (1) = 35.700, p < .01$). It was hypothesized that 130.2 males and 61.8 females would be nominated; yet, 104 males and 88 females were actually nominated.
Significantly more females and fewer males were nominated in the internalizing category compared to the number of nominations expected based on the sample.

**Research Question Three**

How does the ranking on the TNF in the internalizing category predict the level of BASC-2 BESS T-score for females? A Spearman’s \textit{rho} correlation coefficient was calculated for the relationship between ranking in the internalizing category and level of BASC-2 BESS T-score for females. A weak positive correlation that was not significant was found (\textit{rho} (86) = .184, \textit{p} > .05). Ranking in the internalizing category does not predict BASC-2 BESS T-scores for females.

**Research Question Four**

How does the ranking on the TNF in the internalizing category predict the level of BASC-2 BESS T-score for males? A Spearman’s \textit{rho} correlation coefficient was calculated for the relationship between ranking in the internalizing category and level of BASC-2 BESS T-score for males. A weak positive correlation that was significant was found (\textit{rho} (102) = .280, \textit{p} < .001). Males with higher ranking in the internalizing category tend to have higher BASC-2 BESS T-scores.

**Research Question Five**

How does the ranking on the TNF in the externalizing category predict the level of BASC-2 BESS T-score for females? A Spearman’s \textit{rho} correlation coefficient was calculated for the relationship between ranking in the externalizing category and level of BASC-2 BESS T-score for females. A weak positive correlation that was significant was found (\textit{rho} (27) = .382, \textit{p} < .05). Females with higher ranking in the externalizing category tend to have higher BASC-2 BESS T-scores.
Research Question Six

How does the ranking on the TNF in the externalizing category predict the level of BASC-2 BESS T-score for males? A Spearman’s \( \rho \) correlation coefficient was calculated for the relationship between ranking in the externalizing category and level of BASC-2 BESS T-score for males. A weak positive correlation that was significant was found (\( \rho (153) = .300, p < .001 \)). Males with higher ranking in the externalizing category tend to have higher BASC-2 BESS T-scores.

Research Question Seven

Does the relationship between ranking on the TNF in the internalizing category and the level of BASC-2 BESS T-score differ significantly by student gender? A z-test score was calculated to assess the significance of the difference between the correlation coefficients for males and females in the relationship between ranking in the internalizing category and BASC-2 BESS T-score. A z score of -0.63 (\( p > .05 \)) was obtained. The difference between correlation coefficients for males and females was not statistically significant.

Research Question Eight

Does the relationship between ranking on the TNF in the externalizing category and the level of BASC-2 BESS T-score differ significantly by student gender? A z score was calculated to assess the significance of the difference between the correlation coefficients for males and females in the relationship between ranking in the externalizing category and BASC-2 BESS T-score. A z score of 0.39 (\( p > .05 \)) was obtained. The difference between correlation coefficients for males and females is not statistically significant.
Research Question Nine

Is there a significant difference in ranking on the combined list by student gender? A Mann-Whitney $U$ test was calculated to examine if there is a significant difference in mean student ranking on the combined list based on student gender. No significant difference in mean ranking was found ($U = 9,744, p > .05$). Males were not more likely than females to have a higher ranking on the combined category.

Research Question Ten

Is there a significant difference in ranking on the combined list by internalizing or externalizing category? A Mann-Whitney $U$ test was calculated to examine if there is a significant difference in median student ranking on the combined list based on the externalizing or internalizing category. Students with externalizing concerns had a higher median rank (MDN= 173.85) than students with internalizing concerns (MDN= 145.32; $U = 14,796.5, p < .05$) on the combined list.
Chapter 5: Discussion

The purpose of this study was to explore the possibility that a screening process may measure differently for males and females. Teachers in a middle school setting nominated students they believed might be at-risk for internalizing and externalizing concerns using the Teacher Nomination Form (TNF; Davis, 2012). Teachers then filled out the BASC-2 BESS on all nominated students (Kamphaus & Reynolds, 2007). The researchers predicted that this screening process would measure differently for males and females. In particular, it was predicted that the TNF would correlate stronger with BASC-2 BESS T-scores for males than for females. Results from this study, however, showed that there was not a significant difference in the way the TNF predicted BASC-2 BESS t-scores for males and females. In other words, based on this study, the screening instrument seems to work the same for males and females in both the internalizing and externalizing categories.

In addition, the researchers found that more males were nominated than expected by proportional chance in the externalizing category and more females were nominated than expected by proportional chance in the internalizing category. This finding is in alignment with the general trend in the literature that males tend to struggle with externalizing concerns and females tend to struggle with internalizing concerns (Hoffmann et al., 2004; Lewinsohn et al., 1995; Zahn-Waxler et al., 2008). While findings from Young et al. (2010) support the idea that males may be overrepresented in the screening process, results from this study support the validity of the screening measure for both males and females, suggesting that a potential overrepresentation may not be attributed to the screening instrument being used.

Finally, the researchers looked at the order in which teachers ranked concerns on the combined list to see if teacher perceptions of the severity of concerns differed by student gender.
or nomination category. Teachers were not more likely to rank males or females higher on the combined list, suggesting that they did not tend to perceive males’ behavior as more severe. In contrast, there was a significant difference in the mean ranking for externalizing and internalizing concerns on the combined list. This suggests that teachers may perceive externalizing behaviors as more of a concern than internalizing behaviors. Given that manifestations of externalizing concerns are typically more disruptive to the classroom environment, it follows that teachers would rate these behaviors as more severe than a student expressing internalizing concerns but who is quiet and compliant in class. Other researchers have found similar findings that students with externalizing concerns are more likely to be referred for interventions or special education services than students with internalizing concerns (Green et al., 1996; Rees et al., 2003).

Findings from this study add to the validity evidence of the TNF because there is not a significant difference in the way it predicts scores on the BASC-2 BESS for males and females. However, some of the weak correlations found between the TNF and the BASC-2 BESS suggests that the TNF is not as predictive of BASC-2 BESS T-scores as would be hoped. Of particular interest is the finding that the TNF had no significant correlation with the BASC-2 BESS for internalizing females. This means that the TNF is not better than chance at predicting BASC-2 BESS T-scores for females at risk for internalizing concerns. This finding is commensurate with a trend in the literature for screening instruments to have stronger psychometric properties for externalizing concerns than for internalizing concerns (Kahlberg et al., 2011; Lane et al., 2009; Lane et al., 2010b). The weak correlation found for externalizing males and females and internalizing males suggests that more work is necessary to create
accurate social, emotional, and behavioral screening instruments for secondary students, especially for internalizing concerns.

**Implications for Practitioners**

Systematic screening can help to identify students with social, emotional, and behavioral concerns so that appropriate interventions may be implemented to help these students in the classroom. The TNF was developed for use in a middle school setting in conjunction with the BASC-2 BESS. It is a multi-gated screening process that teachers may use to screen entire classrooms at once, systematically identifying students who may be at-risk. Given that the age of onset for many mental health concerns falls during middle school (Kessler et al., 2005), practitioners should advocate for systematic screening for social, emotional, and behavioral concerns in secondary settings.

While gender differences and similarities exist in the prevalence and expression of these concerns, this study provides preliminary evidence that this screening process measures similarly for males and females. However, it is essential for practitioners to recognize the difference between externalizing and internalizing concerns. Given that externalizing concerns are more likely to be reported (Green et al., 1996; Rees et al., 2003), practitioners must be mindful of the students with internalizing concerns who may not be identified through the screening process yet may experience notable negative outcomes. Future studies should focus on improving the identification of these students.

**Implications for Future Research**

While research abounds on the use of social, emotional, and behavioral concerns in elementary settings, more research is needed on a screening instrument for secondary students. Future studies should focus on the refining of a screening instrument for secondary students,
particularly in improving the identification of students with internalizing concerns. Given the covert nature of internalizing concerns, researchers should consider the addition of a student-completed measure in the screening process to assess how teacher perceptions align with student perceptions. Researchers should consider having all students independently fill out the BASC-2 BESS and teachers fill out the BASC-2 BESS on every child in their classroom, rather than just the 10 nominated on the TNF in order to more accurately assess how well teacher nominations align with elevated BASC-2 BESS T-scores.

In addition, future studies should consider the use of existing data (such as grades, attendance, office discipline referrals) to help in the identification of student concerns. To further the research on the influence of student gender in the screening process, future studies should consider looking at gender differences and similarities across different nominations (e.g., student-filled out report, teacher report, parent report) to see if differences and similarities are consistent across raters. Finally, researchers may consider exploring the effect on the screening process of enhanced teacher training regarding social, emotional, and behavioral concerns. For example, if teachers receive brief educational training on the differences between externalizing and internalizing concerns, as well the difficulties some students experience related to these concerns, perhaps they would nominate students differently in a screening process.

Limitations

Limitations of this study include the weak to moderate psychometric properties of the TNF, the relatively small sample size, and the relatively homogenous sample that was chosen because of their willingness to participate. A significant limitation is the lack of a multiple perspectives in the nomination process. Teachers completed all the steps of the screening process and student-completed or parent-completed measures were not included as part of this
study. This means that the validity evidence of the TNF is being considered solely on the BASC-2 BESS, another teacher-completed measure, rather than by a student-completed measure. Therefore, students may not be identified or may be misidentified simply because of teacher perception. In other words, it is unknown whether or not there were other at-risk students in the class or if teachers nominated students who were not actually at-risk by another measure. In addition, teachers only completed BASC-2 BESSes on students nominated on the TNF, rather than the entire classroom. Again, this means that there may have been students who would have received elevated BASC-2 BESS scores that weren’t nominated on the TNF; however, since teachers did not complete a BASC-2 BESS on every student, this information is unknown.

Conclusion

This study found that, while males were nominated more frequently in the externalizing category and females were nominated more frequently in the internalizing category, there was not a significant difference in the way the TNF predicted BASC-2 BESS T-scores for males and females. Correlations between the TNF and the BASC-2 BESS were weak to moderate, however, indicating a need for future research to refine the screening process for social, emotional, and behavioral concerns in a secondary setting, particularly for internalizing concerns.
References


Vannest, K. J., Harrison, J. R., Temple-Harvey, K., Ramsey, L., & Parker, R. I. (2011). Improvement rate differences of academic interventions for students with emotional and
doi: 10.1177/0741932510362509

the Individuals with Disabilities Education Act. Retrieved from
http://www2.ed.gov/about/reports/annual/osep/2006/parts-b-c/28th-vol-1.pdf

new era: Revitalizing special education for children and their families. Retrieved from
http://education.ucf.edu/mirc/Research/President's%20Commission%20on%20Excellence%20in%20Special%20Education.pdf

Walker, B. A. (2010). Effective schoolwide screening to identify students at risk for social and
behavioral problems. Intervention in School and Clinic, 46, 104–110. doi:
10.1177/1053451210374989.


Wolfè, M. M. (1978). Social validity: The case for subjective measurement or how applied
behavior analysis is finding its heart. Journal of Applied Behavior Analysis, 11, 203–
214. doi: 10.1901/jaba.1978.11-203

and responding in schools. Psychology in the Schools, 43, 297–312. doi:
10.1002/pits.20148


APPENDIX A

Demographic information needed for research purposes

<table>
<thead>
<tr>
<th>Teacher initials</th>
<th>___ ___ ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher subject taught</td>
<td></td>
</tr>
<tr>
<td>Teacher gender</td>
<td></td>
</tr>
<tr>
<td>Teacher age</td>
<td></td>
</tr>
<tr>
<td>Teacher ethnicity</td>
<td></td>
</tr>
<tr>
<td>Number of years as an educator (including the current year)</td>
<td></td>
</tr>
<tr>
<td>Highest degree earned</td>
<td></td>
</tr>
<tr>
<td>Year highest degree earned</td>
<td></td>
</tr>
</tbody>
</table>

Introduction

Helping students with social, emotional, and behavioral concerns is a major demand of teacher time and expertise. We are developing a way for schools to identify students that may have social, emotional, and behavioral concerns in middle schools so that these students can benefit from early interventions. These concerns tend to be identified in two categories: externalizing and internalizing. Youth with externalizing concerns tend to disrupt others with their negative behavior. On the other hand, students with internalizing concerns may seem sad, lonely, or anxious. This research will ask you to nominate and rank students as at-risk for internalizing concerns or externalizing concerns.
APPENDIX B

Teacher Nomination Form

Externalizing Behaviors

Please read through the following examples and non-examples of externalizing behaviors. Then nominate five students who most clearly exhibit behaviors consistent with the examples listed below. Rank those students with 1 being the student who is demonstrating the most concerning externalizing behaviors and 5 being the student who is displaying the least concerning externalizing behaviors.

Each ranking, 1-5, can only be used once.

A student may only be nominated in ONE category, either externalizing or internalizing. If a student seems to meet the criteria for both, decide which category is more fitting and circle yes in the far right column indicating the student exemplifies internalizing and externalizing behaviors.

<table>
<thead>
<tr>
<th>Examples of Externalizing</th>
<th>Non-examples of Externalizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Seeks attention through negative behavior</td>
<td>• Has good self-control</td>
</tr>
<tr>
<td>• Is aggressive towards people or things</td>
<td>• Behaves appropriately when not supervised</td>
</tr>
<tr>
<td>• Disobeys rules</td>
<td>• Is attentive in class</td>
</tr>
<tr>
<td>• Annoys others on purpose</td>
<td>• Follows teacher directions</td>
</tr>
<tr>
<td>• Defies adults</td>
<td>• Completes tasks without bothering others</td>
</tr>
</tbody>
</table>

Teacher Nomination Form

Internalizing Behaviors

Please read through the following examples and non-examples of internalizing behaviors. Then nominate five students who most clearly exhibit behaviors consistent with the examples listed below. Rank those students with 1 being the student who is demonstrating the most concerning internalizing behaviors and 5 being the student who is displaying the least concerning internalizing behaviors.

Each ranking, 1-5, can only be used once.

A student may only be nominated in ONE category, either externalizing or internalizing. If a student seems to meet the criteria for both, decide which category is more fitting and circle yes in the far right column indicating the student exemplifies internalizing and externalizing behaviors.

<table>
<thead>
<tr>
<th>Examples of Internalizing</th>
<th>Non-examples of Internalizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Seems sad or depressed</td>
<td>• Participates easily in classroom discussion</td>
</tr>
<tr>
<td>• Avoids social situations</td>
<td>• Recovers quickly when criticized or teased</td>
</tr>
<tr>
<td>• Seems lonely</td>
<td>• Seems to enjoy working in a group</td>
</tr>
<tr>
<td>• Acts anxious or worries</td>
<td>• When greeted by others, responds positively.</td>
</tr>
<tr>
<td>• Shows low energy or seems lethargic</td>
<td>• Has frequent physical complaints</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Initials</th>
<th>Male/Female</th>
<th>Ranking (1-5)</th>
<th>Would you have liked to put them in both categories?</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ __ __</td>
<td>M/F</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>__ __ __</td>
<td>M/F</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>__ __ __</td>
<td>M/F</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>__ __ __</td>
<td>M/F</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>__ __ __</td>
<td>M/F</td>
<td>Y/N</td>
<td></td>
</tr>
</tbody>
</table>
**Teacher Nomination Form**

**Combined Ranking: Externalizing/Internalizing**

*Of the students you ranked for externalizing and internalizing behaviors, create a combined ranking list with 1 being the student who displays the most concerning behaviors and 10 being the student who displays the least concerning behaviors.*

<table>
<thead>
<tr>
<th>Ranking (1-10)</th>
<th>Student Initials</th>
<th>Male/Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>2</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>3</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>4</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>5</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>6</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>7</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>8</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>9</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
<tr>
<td>10</td>
<td>__ __ __</td>
<td>M/F</td>
</tr>
</tbody>
</table>